

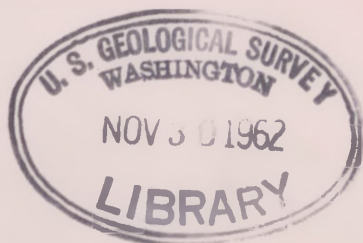
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Surface Water Records of California

Volume 2: Northern Great Basin and Central Valley

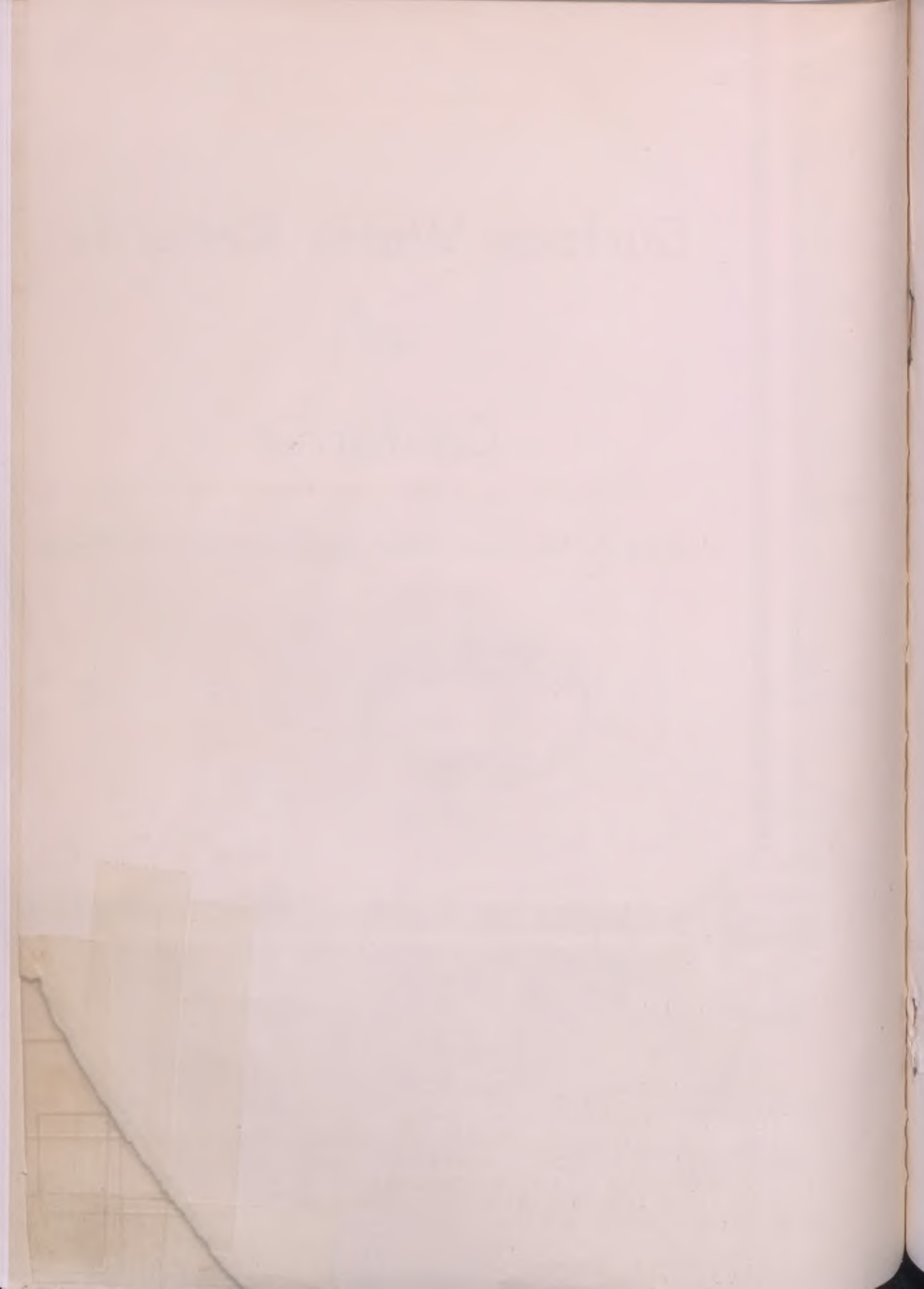


*U.S. Geological Survey, Surface Water
Branch.*



**UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

Prepared in cooperation with the State of California and other agencies



United States Department of the Interior
Geological Survey - Water Resources Division

SURFACE WATER RECORDS
OF CALIFORNIA

1961

Volume 2: Northern Great Basin and Central Valley

Prepared under the direction of Walter Hofmann, District Engineer,
Surface Water Branch, in cooperation with the State of
California and other agencies

Copies of this report may be obtained from
District Engineer, Surface Water Branch
U. S. Geological Survey
345 Middlefield Road
Menlo Park, California

CALENDAR FOR WATER YEAR 1961

OCTOBER 1960

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FEBRUARY 1961

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AUGUST 1961

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SEPTEMBER 1961

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CONTENTS

	Page
Introduction.....	449
Cooperation.....	450
Definition of terms and abbreviations.....	451
Downstream order and station numbers.....	452
Explanation of data.....	453
Accuracy of field data and computed results.....	457
Supplemental data.....	458
Hydrologic conditions.....	459
Gaging-station records.....	460
<u>Walker Lake basin</u>	
Virginia Creek (head of Walker River) near Bridgeport.....	460
Green Creek near Bridgeport.....	461
Robinson Creek at Twin Lakes outlet, near Bridgeport.....	462
Buckeye Creek near Bridgeport.....	463
Swager Creek near Bridgeport.....	464
East Walker River (continuation of Virginia Creek):	
Bridgeport Reservoir near Bridgeport.....	465
East Walker River near Bridgeport.....	466
East Walker River above Strosnider ditch, near Mason, Nev.....	467
West Walker River at Leavitt Meadows, near Coleville.....	468
Little Walker River near Bridgeport.....	469
West Walker River below Little Walker River, near Coleville.....	470
West Walker River near Coleville.....	471
Topaz Reservoir near Topaz.....	472
West Walker River at Hoyer Bridge, near Wellington, Nev.....	473
<u>Humboldt-Carson Sink basin</u>	
<u>Carson River basin</u>	
East Fork Carson River:	
Silver Creek below Pennsylvania Creek, near Markleeville.....	474
East Fork Carson River below Markleeville Creek, near Markleeville	475
East Fork Carson River near Gardnerville, Nev.....	476
West Fork Carson River at Woodfords.....	477
<u>Pyramid and Winnemucca Lakes basin</u>	
Truckee River:	
Upper Truckee River near Myers.....	478
Blackwood Creek near Tahoe City.....	479
Trout Creek near Tahoe Valley.....	480
Lake Tahoe at Tahoe.....	481
Truckee River at Tahoe.....	482
Truckee River near Truckee.....	483
Donner Creek at Donner Lake, near Truckee.....	484
Martis Creek near Truckee.....	485
Prosser Creek at Hobart Mills.....	486
Alder Creek near Truckee.....	487

Gaging-station records--Continued

Pyramid and Winnemucca Lakes basin--Continued

Truckee River--Continued

	Page
Prosser Creek near Boca.....	488
Little Truckee River near Hobart Mills.....	489
Sagehen Creek near Truckee.....	490
Little Truckee River above Boca Reservoir, near Boca.....	491
Boca Reservoir at Boca.....	492
Little Truckee River at Boca.....	493
Truckee River at Farad.....	494
Dog Creek near Verdi, Nev.....	495
Truckee River at Reno, Nev.....	496

Honey Lake basin

Susan River at Susanville.....	497
Willow Creek near Susanville.....	498
Eagle Lake:	
Pine Creek near Susanville.....	499
Pine Creek near Westwood.....	500

Upper Lake basin

Bidwell Creek near Fort Bidwell.....	501
--------------------------------------	-----

Buena Vista Lake basin

Kern River:

Golden Trout Creek near Cartago.....	502
Kern River near Quaking Aspen Camp.....	503
Little Kern River near Quaking Aspen Camp.....	504
Packsaddle Canyon Creek near Fairview.....	505
Kern River near Kernville.....	506
Kern River at Kernville.....	508
Borel Canal below Isabella Dam.....	509
South Fork Kern River near Olancho.....	511
South Fork Kern River near Onyx.....	512
Kelso Creek near Weldon.....	513
Isabella Reservoir near Isabella.....	514
Kern River below Isabella Dam.....	515
Kern River near Democrat Springs.....	516
Kern River below Kern Canyon powerhouse.....	517
San Emigdio Creek at San Emigdio Ranchhouse.....	518

Tulare Lake basin

Tulare Lake in Kings County.....	519
Poso Creek near Oildale.....	520
Middle Fork Tule River:	
North Fork of Middle Fork Tule River near Springville.....	521
Tule River:	
North Fork Tule River at Springville.....	522
Tule River near Springville.....	523
South Fork Tule River near Success.....	524
Pioneer ditch below Success Dam.....	525

CONTENTS

v

Gaging-station records--Continued

Tulare Lake basin--Continued

	Page
Tule River below Success Dam.....	526
Middle Fork Kaweah River near Potwisha Camp.....	527
Marble Fork Kaweah River at Potwisha Camp.....	529
Kaweah River at Three Rivers.....	530
South Fork Kaweah River at Three Rivers.....	531
Kaweah River near Three Rivers.....	532
Dry Creek near Lemon Cove.....	533
Kings River above North Fork.....	534
North Fork Kings River below Meadow Brook.....	535
Fleming Creek near Blackcap Mountain.....	536
Post Corral Creek near Blackcap Mountain.....	537
Helms Creek below Courtright Dam.....	538
Reservoirs in Tulare Lake basin.....	539
North Fork Kings River near Cliff Camp.....	540
Teakettle Creek at site No. 3, near Patterson Mountain.....	541
Teakettle Creek tributary No. 7 near Patterson Mountain.....	542
Teakettle Creek tributary No. 2 near Patterson Mountain.....	543
Teakettle Creek tributary No. 2A near Patterson Mountain.....	544
Teakettle Creek tributary No. 1 near Patterson Mountain.....	545
North Fork Kings River above Dinkey Creek.....	546
Rock Creek at Dinkey Creek.....	548
North Fork Kings River below Dinkey Creek.....	549
Kings River below North Fork.....	551
Big Creek above Pine Flat Reservoir.....	552
Sycamore Creek above Pine Flat Reservoir.....	553
Pine Flat Reservoir near Piedra.....	554
Kings River below Pine Flat Dam.....	555
Mill Creek near Piedra.....	556
Los Gatos Creek above Nunez Canyon, near Coalinga.....	557

San Joaquín River basin

Middle Fork San Joaquín River:

North Fork San Joaquín River below Iron Creek.....	558
--	-----

San Joaquín River at Miller Crossing.....	559
---	-----

Granite Creek near Cattle Mountain.....	560
---	-----

South Fork San Joaquín River:

Florence Lake:

Ward tunnel at intake.....	561
----------------------------	-----

Florence Lake near Big Creek.....	562
-----------------------------------	-----

South Fork San Joaquín River near Florence Lake.....	563
--	-----

Bear Creek near Lake Thomas A. Edison.....	565
--	-----

Lake Thomas A. Edison near Big Creek.....	566
---	-----

Mono Creek below Lake Thomas A. Edison.....	567
---	-----

Jackass Creek near Jackass Meadow.....	568
--	-----

Chiquito Creek near Arnold Meadow.....	569
--	-----

Mammoth Pool Reservoir near Big Creek.....	570
--	-----

Gaging-station records--Continued

	Page
San Joaquin River basin--Continued	
San Joaquin River above Big Creek.....	571
Big Creek:	
Ward tunnel at outlet.....	573
Huntington Lake near Big Creek.....	574
Big Creek below Huntington Lake.....	575
Pitman Creek below Tamarack Creek.....	577
Stevenson Creek:	
Huntington-Shaver conduit at outlet.....	578
Shaver Lake near Big Creek.....	579
San Joaquin River above Willow Creek, near Auberry.....	580
North Fork Willow Creek:	
Bass Lake near Bass Lake.....	581
Pacific Gas & Electric Co. conduit No. 3 near Bass Lake.....	582
North Fork Willow Creek near Bass Lake.....	583
Willow Creek at mouth, near Auberry.....	584
San Joaquin River below Kerckhoff powerhouse.....	586
Millerton Lake:	
Friant-Madera Canal at Friant.....	588
Friant-Kern Canal at Friant.....	589
Millerton Lake at Friant.....	590
San Joaquin River below Friant.....	591
Little Dry Creek at mouth, near Friant.....	592
San Joaquin River near Biola.....	593
Panoche Creek below Silver Creek, near Panoche.....	594
Little Panoche Creek tributary No. 1 near Panoche.....	595
Fresno River:	
Miami Creek near Oakhurst.....	596
Fresno River near Knowles.....	597
Fresno River near Daulton.....	598
East Fork Chowchilla River near Ahwahnee.....	599
West Fork Chowchilla River near Mariposa.....	600
Middle Fork Chowchilla River near Nipinnawassee.....	601
Chowchilla River at Buchanan damsite.....	602
Bear Creek near Cathay.....	603
Mariposa Creek near Cathay.....	604
Salt Slough near Los Banos.....	605
San Joaquin River at Fremont Ford Bridge.....	606
Los Banos Creek near Los Banos.....	607
San Luis Creek near Los Banos.....	608
Merced River at Happy Isles Bridge, near Yosemite.....	609
Merced River at Pohono Bridge, near Yosemite.....	610
South Fork Merced River at Wawona.....	611
South Fork Merced River near El Portal.....	612
Merced River at Bagby.....	613
Maxwell Creek at Coulterville.....	614

Gaging-station records--Continued

San Joaquin River basin--Continued	Page
Lake McClure at Exchequer.....	615
Merced River at Exchequer.....	616
Merced River near Stevinson.....	617
Merced River Slough near Newman.....	618
San Joaquin River near Newman.....	619
Orestimba Creek near Newman.....	620
Del Puerto Creek:	
Del Puerto Creek tributary No. 2 near Patterson.....	620
Tuolumne River:	
Falls Creek near Hetch Hetchy.....	621
Hetch Hetchy Reservoir at Hetch Hetchy.....	622
Tuolumne River near Hetch Hetchy.....	623
Cherry Creek:	
Cherry Lake near Hetch Hetchy.....	624
Cherry Creek below Cherry Valley Dam, near Hetch Hetchy.....	625
Eleanor Creek:	
Lake Eleanor near Hetch Hetchy.....	626
Eleanor Creek near Hetch Hetchy.....	627
Cherry Creek Canal near Early Intake.....	628
Cherry Creek near Early Intake.....	629
South Fork Tuolumne River near Oakland Recreation Camp.....	630
Middle Tuolumne River at Oakland Recreation Camp.....	631
Clavey River near Buck Meadows.....	632
Big Creek near Groveland.....	633
North Fork Tuolumne River above Dyer Creek, near Tuolumne.....	634
Woods Creek near Jacksonville.....	635
Don Pedro Reservoir near La Grange.....	636
Tuolumne River above La Grange Dam, near La Grange.....	637
Modesto Canal near La Grange.....	638
Turlock Canal near La Grange.....	639
Tuolumne River at Modesto.....	640
Middle Fork Stanislaus River at Kennedy Meadows.....	641
Clark Fork Stanislaus River near Dardanelle.....	642
Donnells Reservoir near Dardanelle.....	643
Middle Fork Stanislaus River at Hells Half Acre Bridge.....	644
Beardsley Lake near Strawberry.....	645
Middle Fork Stanislaus River below Beardsley Dam.....	646
Middle Fork Stanislaus River at Sand Bar Flat, near Avery.....	647
North Fork Stanislaus River below Silver Creek.....	648
Highland Creek below Spicer Meadows Reservoir.....	649
North Fork Stanislaus River below Ganns damsite.....	650
North Fork Stanislaus River near Avery.....	651
South Fork Stanislaus River at Strawberry.....	652
Philadelphia Canal near Strawberry.....	653
Tuolumne Canal near Long Barn.....	654

gaging-station records--Continued

San Joaquin River basin--Continued

Middle Fork Stanislaus River--Continued	Page
South Fork Stanislaus River near Long Barn.....	655
Stanislaus River:	
Melones Reservoir at Melones Dam.....	656
Stanislaus River below Melones powerhouse.....	657
Tulloch Reservoir near Knights Ferry.....	658
South San Joaquin Canal near Knights Ferry.....	659
Oakdale Canal near Knights Ferry.....	660
Stanislaus River below Goodwin Dam, near Knights Ferry.....	661
Stanislaus River at Ripon.....	662
San Joaquin River near Vernalis.....	663
Corral Hollow Creek near Tracy.....	664
South Fork Calaveras River:	
San Domingo Creek near San Andreas.....	665
South Fork Calaveras River near San Andreas.....	666
Calaveritas Creek near San Andreas.....	667
North Fork Calaveras River near San Andreas.....	668
Calaveras River below Hogan Dam.....	669
Cosgrove Creek near Valley Springs.....	670
Calaveras River at Jenny Lind.....	671
Bear Creek near Lockeford.....	672
Delta-Mendota Canal at Tracy pumping plant near Tracy.....	673
North Fork Mokelumne River:	
Salt Springs Reservoir near West Point.....	674
Tiger Creek powerhouse conduit below Salt Springs Dam.....	675
North Fork Mokelumne River below Salt Springs Dam.....	676
Cole Creek near Mokelumne Peak.....	677
Bear River near Salt Springs Dam.....	678
Mokelumne River:	
Middle Fork Mokelumne River:	
Forest Creek near Wilseyville.....	679
Middle Fork Mokelumne River at West Point.....	680
South Fork Mokelumne River near West Point.....	681
Mokelumne River near Mokelumne Hill.....	682
Mokelumne River at Lancha Plana.....	684
Mokelumne River near Clements.....	685
Woodbridge Canal at Woodbridge.....	686
Mokelumne River at Woodbridge.....	687
Dry Creek near Ione.....	689
Sutter Creek near Sutter Creek.....	691
Dry Creek near Galt.....	692
North Fork Cosumnes River:	
Camp Creek near Somerset.....	693
North Fork Cosumnes River near El Dorado.....	694
Middle Fork Cosumnes River near Somerset.....	695
South Fork Cosumnes River near River Pines.....	696

CONTENTS

IX

Gaging-station records--Continued

San Joaquin River basin--Continued

Mokelumne River-Continued

	Page
Cosumnes River at Michigan Bar.....	697
Deer Creek near Sloughhouse.....	698
Cosumnes River at McConnell.....	699
Contra Costa Canal near Oakley.....	700
Dutch Slough:	
Marsh Creek near Byron.....	701

Sacramento River basin

Sacramento River near Mount Shasta.....	702
Sacramento River at Delta.....	703
North Fork Pit River near Alturas.....	704
South Fork Pit River near Likely.....	705
Pit River near Canby.....	706
Pit River near Lookout.....	707
Ash Creek at Adin.....	708
Pit River near Bieber.....	709
Horse Creek at Little Valley, near Pittville.....	710
Fall River near Dana.....	711
Hat Creek near Hat Creek.....	712
Burney Creek near Burney.....	713
Pit River below Pit No. 4 Dam.....	714
Pit River at Big Bend.....	715
Pit River near Montgomery Creek.....	716
Squaw Creek above Shasta Lake.....	717
McCloud River near McCloud.....	718
McCloud River above Shasta Lake.....	719
Shasta Lake near Redding.....	720
Sacramento River at Keswick.....	721
Clear Creek at French Gulch.....	722
Clear Creek near Igo.....	723
Churn Creek near Redding.....	724
Cow Creek:	
South Cow Creek near Millville.....	725
Oak Run Creek near Oak Run.....	726
Little Cow Creek near Ingot.....	727
Cow Creek near Millville.....	728
Bear Creek near Millville.....	729
Middle Fork Cottonwood Creek near Ono.....	730
North Fork Cottonwood Creek near Igo.....	731
Cottonwood Creek near Cottonwood.....	732
Battle Creek near Cottonwood.....	733
Paynes Creek near Red Bluff.....	734
Sacramento River near Red Bluff.....	735
Red Bank Creek near Red Bluff.....	737
Antelope Creek near Red Bluff.....	738
Elder Creek near Paskenta.....	739

Gaging-station records--Continued

Sacramento River basin--Continued

	Page
Elder Creek at Gerber.....	740
Mill Creek near Los Molinos.....	741
Thomes Creek at Paskenta.....	742
Deer Creek near Vina.....	743
Big Chico Creek near Chico.....	744
Stony Creek near Fruto.....	745
Stony Creek at Black Butte damsite, near Orland.....	746
Stony Creek near Hamilton City.....	747
Sacramento River at Butte City.....	748
Sacramento River at Colusa.....	749
Butte Creek at Butte Meadows.....	750
Butte Creek near Chico.....	751
Cottonwood Creek:	
Gold Run:	
Gold Run tributary near Nelson.....	752
Sacramento River below Wilkins Slough.....	753
Sacramento River at Knights Landing.....	754
Middle Fork Feather River:	
Little Last Chance Creek near Chilcott.....	755
Big Grizzly Creek near Portola.....	756
Middle Fork Feather River near Clio.....	757
Middle Fork Feather River below Sloat.....	758
Middle Fork Feather River near Merrimac.....	759
South Fork Feather River above Little Grass Valley Reservoir....	760
South Fork Feather River below Little Grass Valley Reservoir....	761
South Fork Feather River below diversion dam near Strawberry Valley.....	762
Lost Creek above Sly Creek Reservoir.....	763
Lost Creek near Clipper Mills.....	764
South Fork Feather River near Forbestown.....	765
Palermo Canal at Enterprise.....	766
South Fork Feather River at Enterprise.....	767
Feather River at Bidwell Bar.....	768
North Fork Feather River:	
Lake Almanor near Prattville.....	769
North Fork Feather River near Prattville.....	770
Butt Creek above Almanor-Butt Creek tunnel, near Prattville...	771
Indian Creek (head of East Branch of North Fork Feather River):	
Red Clover Creek near Genesee.....	772
Indian Creek near Taylorsville.....	773
Lights Creek near Taylorsville.....	774
Indian Creek near Crescent Mills.....	775
Spanish Creek near Quincy.....	776
Spanish Creek above Blackhawk Creek, at Keddie.....	777
East Branch of North Fork Feather River near Rich Bar.....	778

CONTENTS

XI

Gaging-station records--Continued

Sacramento River basin--Continued

Feather River--Continued

North Fork Feather River--Continued

Bucks Creek:

Bucks Lake near Bucks Lodge..... Page 779

North Fork Feather River at Big Bar..... 780

West Branch Feather River near Paradise..... 781

West Branch Feather River near Yankee Hill..... 782

Feather River near Oroville..... 783

Honcut Creek:

North Honcut Creek near Bangor..... 785

South Honcut Creek near Bangor..... 786

Middle Yuba River (head of Yuba River):

Milton-Bowman tunnel at outlet..... 787

Middle Yuba River at Milton..... 788

Middle Yuba River near Alleghany..... 789

Middle Yuba River above Oregon Creek..... 790

Oregon Creek near North San Juan..... 791

North Yuba River below Goodyears Bar..... 792

Slate Creek below diversion dam near Strawberry Valley..... 793

North Yuba River below Bullards Bar Dam..... 794

South Yuba River:

Upper Castle Creek at Soda Springs..... 795

South Yuba River near Cisco..... 796

Canyon Creek:

Bowman Lake near Graniteville..... 797

Bowman-Spaulding Canal at intake..... 798

Canyon Creek below Bowman Lake..... 799

South Yuba River near Washington..... 800

South Yuba River at Jones Bar..... 801

Yuba River at Englebright Dam..... 802

Deer Creek near Smartville..... 803

Dry Creek at Virginia Ranch..... 804

Yuba River near Marysville..... 805

Bear River near Auburn..... 806

Bear River near Wheatland..... 807

Dry Creek near Wheatland..... 808

Feather River at Nicolaus..... 809

Sacramento River at Verona..... 810

Sacramento weir near Sacramento..... 811

North Fork American River:

Onion Creek:

Onion Creek tributary No. 3 (head of Onion Creek) near Soda Springs..... 812

Onion Creek tributary No. 5A near Soda Springs..... 813

Onion Creek tributary No. 2 near Soda Springs..... 814

Onion Creek tributary No. 1 near Soda Springs..... 815

Gaging-station records--Continued

Sacramento River basin--Continued

North Fork American River--Continued

Page

Onion Creek near Soda Springs..... 816

Onion Creek tributary No. 7 near Soda Springs..... 817

Shirrtail Creek:

North Shirrtail Creek:

Forbes Creek:

North Fork Forbes Creek near Dutch Flat..... 818

North Shirrtail Creek near Dutch Flat..... 819

North Fork American River at North Fork Dam..... 820

Middle Fork American River at French Meadows..... 822

Duncan Creek near French Meadows..... 823

Rubicon River at Rubicon Springs, near Meeks Bay..... 824

South Fork Rubicon River at mouth, near Georgetown..... 825

Rubicon River near Georgetown..... 826

Pilot Creek:

Georgetown Divide ditch above Pilot Creek, near

Georgetown..... 827

Pilot Creek above Stumpy Meadows Reservoir..... 828

Long Canyon Creek near French Meadows..... 829

Rubicon River near Foresthill..... 830

Middle Fork American River near Foresthill..... 831

Middle Fork American River near Auburn..... 832

South Fork American River:

Echo Lake conduit near Phillips..... 833

Pyramid Creek near Phillips..... 834

Silver Lake Outlet (head of Silver Fork of South Fork

American River) near Kirkwood..... 835

Twin Lakes Outlet near Kirkwood..... 836

South Fork American River near Kyburz..... 837

Alder Creek near White Hall..... 838

Silver Creek:

South Fork Silver Creek:

Ice House Reservoir near Kyburz..... 839

South Fork Silver Creek near Ice House..... 840

Silver Creek below Camino diversion dam..... 841

Silver Creek near Placerville..... 842

South Fork American River near Camino..... 843

South Fork American River near Lotus..... 844

American River:

Folsom Lake near Folsom..... 846

American River at Fair Oaks..... 847

Sacramento River at Sacramento..... 848

Morrison Creek near Sacramento..... 849

CONTENTS

XIII

Gaging-station records--Continued

Sacramento River basin--Continued

Yolo bypass:

Clear Lake (head of Cache Creek):

Adobe Creek near Kelseyville.....	850
Highland Creek near Kelseyville.....	851

Middle Creek:

Scotts Creek near Lakeport.....	852
Kelsey Creek near Kelseyville.....	853

Clear Lake at Lakeport.....	854
-----------------------------	-----

Cache Creek:

Copsey Creek near Lower Lake.....	855
Cache Creek near Lower Lake.....	856
North Fork Cache Creek near Lower Lake.....	857
Bear Creek near Rumsey.....	858
Cache Creek above Rumsey.....	859
Cache Creek near Capay.....	860
Cache Creek at Yolo.....	861

Yolo bypass near Woodland.....	862
--------------------------------	-----

Putah Creek:

Dry Creek near Middletown.....	863
Putah Creek near Guenoc.....	864
Pope Creek near Pope Valley.....	866
Lake Berryessa near Winters.....	867
Putah Creek near Winters.....	868
Pleasants Creek near Winters.....	869
Putah Creek near Davis.....	870

Discharge of partial-record stations and miscellaneous sites.....	871
---	-----

Crest-stage partial record stations.....	871
--	-----

Measurements at miscellaneous sites.....	872
--	-----

Index.....	873
------------	-----

SURFACE WATER RECORDS OF CALIFORNIA, 1961

INTRODUCTION

The surface-water records for the 1961 water year for gaging stations, partial-record stations, and miscellaneous sites within the State of California are given in this report. For convenience there are also included records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey, under the direction of Walter Hofmann, district engineer, Surface Water Branch.

This report marks the beginning of a new method of presenting, annually, basic data on surface-water records by States. Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in California were contained in Parts 9, 10, and 11 of that series.

Beginning with the 1961 water year, streamflow records and related data will be released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports will be limited and primarily for local needs. The records later will be published in Geological Survey water-supply papers at 5-year intervals. These 5-year water-supply papers will show daily discharge and will be compiled on the same geographical areas previously used for the annual series; however, some of the 14 parts of conterminous United States will be further subdivided.

SURFACE WATER RECORDS OF CALIFORNIA, 1961

COOPERATION

In California the work was done under cooperative agreements with the State Department of Water Resources, W. E. Warne, director; Alameda County Water District; Calaveras County Water District; East Bay Municipal Utility District; Georgetown Divide Public Utility District; Imperial Irrigation District; Marin Municipal Water District; Metropolitan Water District of Southern California; Montecito County Water District; Monterey County Flood Control and Water Conservation District; Palo Verde Irrigation District; Santa Clara County Flood Control and Water Conservation District; Orange County Flood Control District, San Bernardino Valley Water Conservation District; San Luis Obispo County Flood Control and Water Conservation District; Santa Barbara County Water Agency; Santa Cruz County Flood Control and Water Conservation District; San Benito County; Santa Maria Valley Water Conservation District; Ventura River Municipal Water District; and cities of Arcata, San Diego, and Santa Barbara. In Oregon the work was done under cooperative agreement with the State of Oregon, L. A. Stanley, State engineer. In Nevada the work was done in cooperation with the State Department of Conservation and Natural Resources, H. A. Shamberger, director; office of State engineer Edmund Muth. In Arizona the work was done in cooperation with the State Land Department, O. B. Lassen, commissioner.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 67 gaging stations, by the United States Navy for 9 gaging stations, by the Bureau of Reclamation, United States Department of the Interior, for 49 gaging stations, and by the Soil Conservation Service, United States Department of Agriculture, for 2 gaging stations. The entire expense of the investigation of streamflow in the Tuolumne River basin made for the Hetch Hetchy project and of the flow of Alameda Creek near Niles was borne by the city and county of San Francisco.

The following organizations and individuals aided in collecting records: In California, The Pacific Power and Light Co.; California Water and Telephone Co.; East Bay Municipal Utility District; The Irvine Ranch; Kings River Water Association; Los Angeles County Flood Control District; Pauba Ranch; Pacific Gas & Electric Co.; Placer County Water Agency; Sacramento Municipal Utility District; San Bernardino County Flood Control District; Southern California Edison Co.; United Water Conservation District; Ventura County Water Resources Division; and Helix, Madera, Merced, Modesto, Nevada, Serrano and Carpenter, Turlock, Oakdale, Oroville-Wyandotte, South San Joaquin, Vista, and Woodbridge Irrigation Districts; In Oregon, The Pacific Power and Light Co.

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfs/m) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches (in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main-stem station listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention shows which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations, so that the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete number for each station, such as 11-1208.00 includes the part number "11" and a six digit station number. In this report, the part number and only the essential digits of the station number are shown. For example, the complete number 11-1208.00 would appear as 11-1208, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from a water-stage recorder that gives a continuous record of fluctuations or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is in effect the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information required for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. For such stations, the rate of change in stage is used as a factor in determining discharge.

At some gaging stations the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and

occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute the daily discharge. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins.

The data in this report generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1961 water year is shown on page II to facilitate finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Under "Records available" are given periods for which there are published records for the present station or for stations generally equivalent to the present one. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U.S. Coast and Geodetic Survey. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height if it is significant. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record

within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and to conditions which affect the natural flow at the gaging station is given under "Remarks."

Skeleton rating tables are published for all stations except those for which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables generally are not published for canals, ditches, or springs.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such a fluctuation, the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, which is an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Maximum daily and minimum daily discharges for the month are listed in the next two lines. Discharge for the month for three stations is expressed in cubic feet per second per square mile (line headed "Cfsm"), in inches (line headed "In."), and in acre-feet (line headed "Ac-ft").

SURFACE WATER RECORDS OF CALIFORNIA, 1961

Discharge for the month for all other stations is expressed in acre-feet (line headed "Ac-ft"). For those stations equipped with a tipping-bucket rain gage, precipitation, in inches, is given for the month.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights for most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods for which discharge was computed or estimated by unusual or special methods because of no gage-height record, ice effect, or other conditions that reduce the degree of accuracy of the records. The footnotes are either reference footnotes, with corresponding symbols used in the table of daily discharge to indicate the days included, or general footnotes, introduced by the word "Note," in which the days included are stated. The following footnotes and their corresponding symbols have been standardized for use throughout this report. The methods used in computing data for such footnoted periods have been explained in preceding paragraphs.

* Discharge measurement made on this day. Used to indicate days on which discharge measurements were made at a gaging station unless they were made at frequent regular intervals, two or more times monthly, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

** Field estimate made on this day. Used to indicate days on which an estimate of the flow was made at the gaging station.

a No gage-height record. Used to indicate periods when there was no gage-height record or the available record was such that it could not be used to compute the daily discharge. No mention is made of periods of no gage-height record if they are few and of short duration, no more than 4 days in succession and not more than 12 days distributed throughout the water year, and if the degree of accuracy of records for those days is not changed.

b Stage-discharge relation affected by ice. Used to indicate periods when the stage-discharge relation is affected by ice forming on stream, control, or streambed. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

c Backwater from aquatic growth (or debris or other conditions). Used only when records for the periods affected are rated down in accuracy.

e Shifting-control method used. Used only when records for the periods affected are rated down in accuracy.

g Computed from once-daily (twice-daily, etc.) staff (or chain, wire-weight, etc.) gage readings. Used only for recording stations for periods when the water-stage recorder graph was not used but readings of a nonrecording gage were used. The symbol is not used for periods of short duration if the degree of accuracy of records for the periods involved are not changed.

k Computed by using rate of change in stage as a factor. Used only when records for the periods involved are rated down in accuracy.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published each year for all reservoirs for which records are published on a daily basis, but it is not published for reservoirs for which only monthly data are given.

For those stations equipped with a thermograph, a table of daily maximum and minimum water temperatures is included.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

SUPPLEMENTAL DATA

Data collected at those partial-record stations which are not included in the California District report, Floods from Small Drainage Areas, published separately, and measurements made at miscellaneous sites are given at the end of this report. Data for partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are given in special tables after the list of measurements at miscellaneous sites.

Information of a more detailed nature than that published for most of the gaging stations is on file in the district office, such as discharge measurements and recorder charts or nonrecording-gage readings. Most gaging-station records in the State through 1958 have been analyzed with an electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year. At many gaging stations water samples are collected from the streams for the purpose of making chemical analyses; computing dissolved solids, suspended sediment loads, and particle-size distribution; or measuring water temperatures. For most of these samples the results are published in an annual series of U.S. Geological Survey water-supply papers entitled "Quality of Surface Waters of the United States." Information on the availability of electronic computer analyses, unpublished data, or quality of water records may generally be obtained from the district office.

Drought conditions persisted throughout California for the third consecutive year except in the north coastal region, where runoff was at about median levels. In the San Francisco Bay region runoff was about 35 percent of median, and in the south and central coastal regions only about 25 percent of median. The Central Valley showed a similar trend wherein runoff decreased from north to south; in the Sacramento Valley runoff was about 75 percent of median and in the San Joaquin Valley about 40 percent of median. In the desert areas localized flooding occurred during August and September as a result of a series of severe thunderstorms.

WALKER LAKE BASIN

10-2890. Virginia Creek near Bridgeport, Calif.

Location.--Lat 38°11'30", long 119°12' 30", near center of W₂ sec.22, T.4 N., R.25 E., on right bank $\frac{1}{4}$ miles downstream from Clearwater Creek, 3 miles upstream from mouth, and $\frac{4}{5}$ miles southeast of Bridgeport.

Drainage area.--64 sq mi, approximately.

Records available.--October 1953 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 6,700 ft (from topographic map).

Average discharge.--8 years, 14.0 cfs (10,140 acre-ft per year).

Extremes.--Maximum discharge during year, 26 cfs Aug. 21 (gage height, 3.67 ft); maximum gage height, 3.74 ft Jan. 5 (backwater from ice); minimum discharge, 1.0 cfs July 28.

1953-61: Maximum discharge, 1,300 cfs Dec. 23, 1955 (gage height, 8.40 ft), from rating curve extended above 170 cfs on basis of slope-area measurement of peak flow; minimum, 1.0 cfs Aug. 18, 1960 and July 28, 1961.

Remarks.--Records good except those for periods of ice effect and no gage-height record, which are fair. Flow partly regulated by Virginia Lakes and other lakes near headwaters. Diversions for irrigation of about 3,000 acres above station.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

2.99	1.1	3.3	6.9
3.1	2.5	3.5	14
3.2	4.4	3.6	20

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.6	5.9	9.9	b 6.4	7.9	9.9	9.5	7.2	2.0	3.6	1.3	3.3
2	4.6	5.9	8.9	b 5.6	7.9	1.2	1.0	6.9	1.9	3.3	1.2	2.7
3	4.6	6.6	8.2	b 6.4	7.6	1.1	1.3	6.4	1.3	4.2	* 1.6	2.5
4	4.6	6.6	b 8.6	6.9	b 7.2	9.5	1.4	6.2	9.5	4.9	1.6	2.5
5	4.6	8.2	b* 7.2	b 6.2	b 7.6	8.6	* 1.3	6.2	* 9.5	* 4.4	2.0	2.4
6	5.4	8.6	b 6.6	b 6.6	* 8.6	* 7.9	1.2	5.9	1.0	4.2	2.2	2.4
7	5.4	8.6	b 6.4	7.2	8.9	b 7.2	1.2	5.9	1.4	4.2	2.2	2.4
8	5.4	* 7.6	b 6.6	7.2	8.9	b 7.6	1.0	* 5.6	1.6	3.6	2.2	2.5
9	5.6	7.2	7.9	* 7.2	9.5	8.9	1.1	5.4	1.7	3.3	1.8	2.9
10	6.4	8.2	a 7.9	7.2	1.3	8.2	1.1	5.4	1.6	3.1	1.7	2.9
11	* 6.4	8.2	a 7.9	b 6.9	1.6	8.9	1.0	5.4	1.6	3.1	2.2	2.7
12	5.9	8.2	a 7.9	7.2	b 1.1	9.5	1.1	6.4	1.4	3.3	2.7	3.1
13	5.6	8.2	a 7.9	b 7.2	9.9	1.3	1.1	6.4	1.2	3.4	2.1	3.3
14	5.4	8.6	a 7.9	7.2	b 8.6	1.4	1.1	5.6	1.1	2.9	2.0	3.4
15	5.4	9.2	a 7.9	b 6.9	9.5	1.1	1.1	5.4	1.3	2.5	1.7	3.4
16	5.9	9.2	a 9	b 6.9	9.2	9.2	1.1	5.4	1.3	2.2	1.7	3.4
17	5.9	8.6	a 1.0	b 6.9	b 6.9	1.0	1.2	5.6	1.1	2.0	1.6	4.2
18	5.9	9.2	8.2	b 6.9	b 6.9	8.9	1.2	6.2	1.3	2.0	1.6	4.6
19	5.9	8.2	7.6	b 6.4	b 6.4	9.5	1.1	6.9	1.2	2.0	1.8	4.4
20	5.6	8.2	7.9	b 5.9	b 7.6	1.1	1.1	6.9	8.9	2.0	2.2	4.6
21	5.6	8.2	7.9	b 5.9	b 8.6	1.2	1.1	6.6	8.9	1.8	5.6	4.6
22	5.6	7.2	8.2	b 6.2	9.5	1.3	1.1	6.4	8.9	1.8	7.0	* 4.9
23	5.6	7.9	7.9	b 6.9	b 6.6	1.4	1.4	6.9	9.2	1.8	7.8	4.9
24	5.9	8.9	7.6	b 6.6	9.2	1.1	1.4	7.2	6.9	2.1	4.0	4.9
25	5.9	8.6	7.6	b 6.9	9.5	9.9	1.4	9.2	6.6	1.7	3.1	4.9
26	5.9	8.2	7.9	7.6	8.9	1.0	1.1	9.5	7.2	1.5	2.5	4.9
27	5.6	b 5.6	7.6	7.6	b 7.6	9.5	9.2	9.2	6.4	1.6	2.7	4.9
28	6.2	b 6.4	b 7.6	b 6.4	b 7.9	9.5	8.6	7.9	5.4	1.1	3.1	5.2
29	5.9	8.9	b 7.2	b 6.4	-	9.5	8.6	1.4	4.6	1.1	2.9	5.9
30	5.9	8.2	7.9	7.2	-----	9.5	7.9	1.2	4.0	1.5	3.3	5.4
31	6.2	-----	7.9	8.2	-----	9.5	-----	1.4	-----	1.3	3.4	-----
Total	173.4	235.3	245.7	211.2	246.9	313.2	335.8	224.2	33.6	81.5	82.8	114.1
Mean	5.59	7.84	7.93	6.81	8.82	10.1	11.2	7.23	11.2	2.63	2.67	3.80
Max.	6.4	9.2	10	8.2	16	14	14	14	20	4.9	7.8	5.9
Min.	4.6	5.6	6.4	5.6	6.4	7.2	7.9	5.4	4.0	1.1	1.2	2.4
Ac-ft	344	467	487	419	490	621	666	445	666	162	164	226

Calendar year 1960:

Water year 1960-61:

Max 23

Max 20

Min 1.1

Min 1.1

Mean 7.85

Mean 7.12

Acre-ft 5,700

Acre-ft 5,160

Peak discharge (Base, 50 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

461

10-2895. Green Creek near Bridgeport, Calif.

Location.--Lat 38°10'25", long 119°14'00", in NE 1/4 sec. 29, T.4 N., R.25 E., on right bank 130 ft downstream from county road bridge and 5 1/2 miles south of Bridgeport.

Drainage area.--19.4 sq mi.

Records available.--October 1953 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 6,850 ft (from topographic map).

Average discharge.--8 years, 26.4 cfs (19,110 acre-ft per year).

Extremes.--Maximum discharge during year, 80 cfs June 8 (gage height, 2.50 ft); maximum gage height, 2.86 ft Dec. 8 (backwater from ice); minimum discharge, 3.4 cfs Oct. 4, 5, but may have been less during periods of ice effect.

1953-61: Maximum discharge, 307 cfs Dec. 23, 1955, from rating curve extended above 220 cfs on basis of slope-area measurement of peak flow and logarithmic plotting; maximum gage height, 3.46 ft Feb. 2, 1956 (backwater from ice); minimum discharge, 2.5 cfs Sept. 27, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by West, Green, East, Summit, and other lakes.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.55	2.6	2.0	23
1.6	3.8	2.2	41
1.7	6.6	2.5	80
1.8	11		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.1	3.8	b 6.0	b 4.3	4.3	6.3	9.6	1.9	3.8	3.1	4.2	9.6
2	3.8	3.8	b 5.0	b 4.1	4.3	7.0	1.2	2.0	3.6	3.0	3.6	8.7
3	3.8	4.3	b 4.3	b 3.8	4.3	7.0	1.5	2.0	3.6	3.1	* 3.2	8.3
4	3.6	6.0	b 4.3	b 3.8	b 4.3	6.0	2.2	2.0	3.6	3.8	3.1	7.9
5	3.6	7.9	b * 4.7	b 3.8	b 4.3	b 5.3	* 2.5	1.9	* 4.3	* 3.8	3.0	7.0
6	4.3	8.3	b 3.5	b* 3.8	* 4.5	b* 4.7	2.2	1.8	5.8	3.1	3.1	6.6
7	5.0	7.0	b 3.5	3.8	4.5	b 4.5	2.0	1.6	7.1	2.9	2.9	6.0
8	4.7	b 4.7	b 3.5	3.8	4.3	b 5.6	* 1.6	* 1.6	7.6	2.6	2.5	6.0
9	4.7	b * 4.3	b 3.5	4.1	4.7	6.0	1.7	1.9	7.6	2.9	2.3	6.0
10	5.6	b 4.7	b 3.5	4.1	7.0	b 5.6	1.6	2.2	7.0	2.4	2.0	6.0
11	* 5.6	5.6	b 4	4.1	8.3	b 5.3	1.6	2.0	7.0	2.4	2.0	6.0
12	5.3	6.0	b 4	4.1	b 6.0	b 5.3	1.8	1.9	6.4	2.4	1.9	5.6
13	5.0	4.7	b 3.5	4.1	b 6.0	6.6	1.6	1.7	6.2	2.4	1.8	5.6
14	5.0	b 3.6	4.7	4.1	b 6.0	7.9	1.6	1.7	6.6	2.2	1.5	5.3
15	4.7	b 3.6	4.7	4.1	b 6.3	7.4	1.7	1.9	7.0	2.1	1.4	5.0
16	4.5	b 3.6	4.7	4.1	b 6.0	b 5.6	2.1	2.2	7.0	2.0	1.4	4.7
17	4.5	b 3.6	4.7	4.1	b 4.7	b 5.6	2.5	2.5	7.0	2.0	1.3	5.6
18	4.5	5	4.7	4.1	b 4.5	b 6.0	2.9	2.7	7.0	2.0	1.2	8.7
19	4.3	b 5	4.3	b 3.8	b 4.5	b 6.0	2.2	2.7	7.0	4.5	1.1	8.7
20	4.3	b 5	4.5	b 3.8	b 4.5	7.4	2.0	2.8	6.8	4.9	1.1	8.3
21	4.3	5.6	4.7	b 3.8	b 4.5	7.4	1.8	3.4	6.5	4.6	1.2	7.4
22	4.3	b 4.5	4.5	3.8	6.3	7.9	1.8	4.4	6.1	4.4	1.1	* 6.6
23	4.3	b 4.7	4.5	3.8	b 4.5	1.2	1.8	4.8	5.6	4.0	1.3	6.0
24	4.1	5.3	4.3	3.8	b 5.3	1.0	1.6	5.0	5.2	3.7	1.5	6.0
25	4.1	5.6	4.3	3.8	6.0	8.7	1.8	5.6	5.1	3.6	1.4	6.0
26	3.8	5.0	4.3	3.8	b 5.0	8.7	1.6	6.0	4.8	3.4	1.2	6.0
27	3.6	b 4.1	4.3	4.1	b 4.7	8.7	1.5	5.2	4.6	3.1	1.0	5.6
28	3.8	b 3.6	4.3	b 4.1	b 5.3	7.4	1.5	4.9	4.6	2.9	1.0	5.6
29	3.8	b 4.7	b 4.1	4.1	-	9.6	1.6	4.9	3.9	2.7	1.0	6.0
30	3.8	4.7	b 4.3	4.3	-----	8.3	1.7	4.2	3.4	2.6	1.0	5.6
31	3.8	-----	4.3	4.3	-----	9.6	-----	3.7	-----	4.2	1.0	-----
Total	13 4.6	14 8.3	13 3.5	12 3.5	14 4.9	21 9.4	54 2.6	93 1	17 1.8	96 8	57 3	19 6.4
Mean	4.34	4.94	4.31	3.98	5.18	7.08	18.1	30.0	57.3	31.2	18.5	6.55
Max.	5.6	8.3	6.0	4.3	8.3	12	29	60	76	49	42	9.6
Min.	3.6	3.6	3.5	3.8	4.3	4.5	9.6	16	34	20	10	4.7
Ac-ft	267	294	265	245	287	435	1,080	1,850	3,410	1,920	1,140	390
Calendar year	1960:			Max 97		Min 2.6		Mean 17.9		Acre-ft 12,980		
Water year	1960-61:			Max 76		Min 3.5		Mean 16.0		Acre-ft 11,570		

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

10-2905. Robinson Creek at Twin Lakes outlet, near Bridgeport, Calif.

Location.--Lat 38°10'20", long 119°19'25", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.28, T.4 N., R.24 E., on left bank a quarter of a mile downstream from Twin Lakes and 8 miles southwest of Bridgeport.

Drainage area.--34.7 sq mi.

Records available.--October 1953 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 7,050 ft (from topographic map).

Average discharge.--8 years, 52.5 cfs (38,010 acre-ft per year).

Extremes.--Maximum discharge during year, 157 cfs June 21 (gage height, 3.12 ft); No flow Nov. 30, Dec. 17-Jan. 7.
1953-61: Maximum discharge, 445 cfs June 29, 1956 (gage height, 4.35 ft); no flow for many days in some years.
Maximum discharge known, 660 cfs June 21, 1911 (gage height, 5.2 ft), at site $2\frac{1}{2}$ miles downstream.

Remarks.--Records excellent. Flow regulated by Twin Lakes.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.01	0	1.6	19
1.05	.3	2.0	41
1.1	1.2	2.5	83
1.2	3.9	3.1	155

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	6.0	0.1	b 0	b 0.2	0.3	9.1	97	59	122	49	34
2	14	6.0	.1	b 0	b 2	3	11	101	52	120	47	31
3	14	5.7	.1	b 0	b 2	3	16	104	48	117	* 44	30
4	13	6.0	b .1	b 0	b 2	3	17	106	47	116	44	29
5	* 9.8	6.0	*b .1	b 0	b 2	3	* 24	106	* 47	* 114	45	28
6	10	6.0	b .1	b 0	*b 2	* 3	27	109	50	111	47	26
7	7.8	5.7	b .1	b 0	b 2	b 3	26	105	56	109	47	26
8	6.6	* 5.7	b .1	b .1	b 2	3	28	* 103	70	106	48	25
9	6.0	5.4	b .1	*b .1	b 2	3	31	100	81	104	48	24
10	6.0	5.4	b .1	b .1	b 2	3	31	103	92	101	54	24
11	5.7	5.4	b .1	b .1	3	3	32	105	104	98	59	22
12	6.0	5.4	b .1	b .1	b 2	4	27	102	118	95	58	22
13	6.3	5.4	b .1	b .1	b 2	4	23	90	127	92	57	21
14	6.6	5.4	b .1	b .1	b 2	b 4	24	83	133	90	55	20
15	6.6	5.1	b .1	b .1	1	6	24	81	136	87	53	20
16	7.0	5.1	b .1	b .1	1	6	25	80	138	83	50	19
17	7.4	5.1	0	b .1	1	6	30	81	144	76	48	19
18	7.8	4.8	0	b .1	1	6	34	83	144	70	46	19
19	11	4.5	0	b .1	1	b 6	31	81	148	68	44	18
20	15	4.2	0	b .1	1	b 6	30	80	149	67	44	18
21	17	3.9	0	b .1	1	4	31	79	151	66	42	17
22	19	4.2	0	b .1	2	6	34	82	151	65	42	* 17
23	19	4.2	b 0	b .1	2	8	35	86	149	64	42	17
24	20	4.2	b 0	b .1	2	6	34	85	147	63	41	17
25	20	4.2	b 0	b .1	2	6	34	84	144	63	40	17
26	20	3.9	0	b 2	2	b 6	33	85	141	61	38	17
27	20	1.7	b 0	b 2	2	b 6	66	82	136	60	37	17
28	20	.1	b 0	b 2	2	4	77	78	131	58	37	17
29	20	.1	b 0	b 2	2	4	89	71	126	55	37	17
30	20	0	b 0	b 2	2	4	94	66	124	53	37	17
31	15	-----	b 0	b 2	2	4.5	-----	62	-----	50	36	-----
Total	390.6	134.8	1.6	3.0	5.0	18.2	1027	2760	3345	2604	1416	645
Mean	12.6	4.49	.05	0.10	0.18	.58	34.2	89.0	112	84.0	45.7	21.3
Max.	20	6.0	.1	.2	.3	4.5	94	109	151	122	59	34
Min.	5.7	0	0	0	.1	.3	9.0	62	47	50	36	17
Ac-ft	775	267	3.2	6.0	9.9	36.0	2,040	5,470	6,630	5,160	2,810	1,280
Calendar year	1960:	Max	140	Min	0	Mean	35.5	Acre-ft	25,760			
Water year	1960-61:	Max	151	Min	0	Mean	33.8	Acre-ft	24,490			

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

463

10-2915. Buckeye Creek near Bridgeport, Calif.

Location.--Lat 38°14'20", long 119°19'30", in NE NE sec.4, T.4 N., R.24 E., on right bank at Buckeye Hot Springs, 0.6 mile downstream from Eagle Creek, and 5½ miles southwest of Bridgeport.

Drainage area.--45 sq mi, approximately.

Records available.--November 1910 to September 1914 (fragmentary), October 1953 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 6,900 ft (from topographic map). November 1910 to September 1914, staff gage at site half a mile downstream at different datum.

Average discharge.--9 years (1911-12, 1953-61), 52.9 cfs (38,300 acre-ft per year).

Extremes.--Maximum discharge during year, 526 cfs Aug. 22 (gage height, 3.76 ft); minimum, 4.2 cfs Jan. 19, result of freezeup. 1953-61: Maximum discharge, 700 cfs Dec. 23, 1955 (gage height, 4.00 ft), from rating curve extended above 360 cfs on basis of slope-area measurement of peak flow; minimum, 3.3 cfs Dec. 12, 1959, result of freezeup.

Flood of June 21, 1911, reached an observed stage of 4.8 ft (discharge not determined), site and datum then in use.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.4	8	2.3	83
1.6	17	2.6	137
1.8	30	2.9	209
2.0	47		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	12	b 12	b 10	b 11	16	23	51	72	47	19	20
2	11	12	b 12	b 10	12	16	29	47	72	46	19	19
3	11	13	b 11	b 12	b 11	15	42	48	83	54	* 19	19
4	11	14	b 12	b 14	b 11	14	52	52	93	55	19	19
5	11	14	b* 13	b 10	b 12	14	* 53	47	* 111	* 48	24	18
6	14	14	b 11	b* 12	* 13	* 12	50	42	125	44	22	17
7	14	14	b 10	12	13	b 16	45	40	127	42	26	16
8	13	b 11	b 11	b 9.6	13	b 16	42	* 42	131	39	28	17
9	13	b* 12	b 11	b 8.4	14	15	40	55	125	38	21	17
10	14	b 14	b 13	12	21	b 12	36	64	123	37	21	16
11	* 14	14	b 14	b 11	21	b 11	36	50	119	36	21	15
12	14	14	b 14	12	b 15	15	44	44	110	36	21	16
13	12	b 11	b 13	b 11	b 15	16	36	41	112	36	20	15
14	12	b 11	b 14	12	b 14	16	36	47	115	34	18	14
15	12	b 13	b 13	b 12	16	16	41	65	113	31	18	14
16	12	b 12	b 16	b 11	14	b 12	56	75	112	31	17	15
17	12	b 14	15	12	b 12	b 12	65	85	113	30	17	23
18	12	16	14	b 11	b 11	b 12	64	91	106	29	16	21
19	12	b 12	b 13	b 8.8	b 14	b 12	48	86	101	28	17	19
20	12	b 12	b 12	b 8.8	b 12	15	42	80	96	26	18	* 16
21	12	b 14	14	b 9.6	b 12	17	39	98	93	25	16	16
22	12	b 14	b 12	b 11	b 12	20	36	106	86	24	78	16
23	12	b 14	b 12	b 12	b 12	24	35	104	80	23	196	16
24	12	14	b 12	b 12	b 12	21	34	114	77	23	32	16
25	12	15	b 12	11	15	b 16	36	125	72	25	26	16
26	12	b 14	14	12	b 13	b 15	35	117	68	24	23	16
27	12	b 13	b 12	12	b 13	b 16	36	94	65	22	23	16
28	12	b 13	14	b 11	b 12	b 15	37	103	59	24	22	18
29	12	b 16	b 11	12	-	b 13	42	93	54	20	22	21
30	12	b 16	b 12	12	-----	b 17	44	72	50	21	25	17
31	12	-----	b 11	b 11	-----	21	-----	73	-----	19	21	-----
Total	370	402	390	345.2	376	478	1254	2251	2863	1017	885	514
Mean	12.2	13.4	12.6	11.1	13.4	15.4	41.8	72.6	95.4	32.8	28.5	17.1
Max.	14	16	16	14	21	24	65	125	131	55	196	23
Min.	11	11	10	8.4	11	11	23	40	50	19	16	14
Ac-ft	752	797	774	685	746	948	2,490	4,460	5,680	2,020	1,760	1,020
Calendar year	1960:			Max 188		Min 9		Mean 33.3			Acre-ft 24,160	
Water year	1960-61:			Max 196		Min 8.4		Mean 30.6			Acre-ft 22,132	

Peak discharge (base 100 cfs).--May 25 (12 p.m.) 169 cfs (2.70 ft); June 8 (12:30 a.m.) 169 cfs (2.69 ft); Aug 22 (10 p.m.) 526 cfs (3.76 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

10-2920. Swager Creek near Bridgeport, Calif.

Location.--Lat 38°17'00", long 119°17'50", in SE 1/4 sec. 23, T.5 N., R.24 E., on right bank three-quarters of a mile downstream from Yaney Canyon and 4 miles northwest of Bridgeport.

Drainage area.--53 sq mi, approximately.

Records available.--June 1911 to September 1915 (fragmentary), October 1953 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 6,620 ft (from topographic map). June 1911 to September 1915 staff gages at approximately same site at different datums.

Average discharge.--9 years (1911-12, 1953-61), 10.8 cfs (7,820 acre-ft per year).

Extremes.--Maximum discharge during year, 114 cfs Aug. 20 (gage height, 3.33 ft); minimum, 1.1 cfs Aug. 17, 18.

1911-15, 1953-61: Maximum discharge, 585 cfs Dec. 23, 1955 (gage height, 6.24 ft), from rating curve extended above 175 cfs on basis of slope-area measurement of peak flow; minimum observed, 0.5 cfs Apr. 20, 1912.

Remarks.--Records good except those for periods of ice effect and no gage-height record which are fair. Diversions for irrigation of about 1,000 acres above station.

Rating table, water-year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting--control method used July 1-Sept. 30.)

1.68	1.1	1.9	5.2
1.70	1.3	2.0	8.7
1.75	1.9	2.1	13
1.8	2.8		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	4.4	6.4	b 4.7	5.5	6.4	3.0	3.5	9.1	1.5	1.3	2.6
2	3.2	4.7	4.7	b 4.7	6.7	6.7	3.5	3.2	9.6	1.5	1.4	2.8
3	3.0	5.5	4.7	b 4.7	6.7	5.2	4.9	3.7	7.1	1.8	* 1.4	3.0
4	3.0	5.5	b 4.7	5.5	5.8	2.1	5.8	3.7	6.4	1.7	1.3	2.8
5	* 2.8	6.1	b* 4.9	b 5.2	6.7	2.1	* 4.4	3.5	* 5.5	* 1.7	2.4	2.8
6	3.0	6.1	b 4.4	b 5.2	* 6.7	* 2.3	3.5	3.7	4.7	1.7	1.7	2.8
7	3.2	6.1	b 4.4	5.8	6.7	2.3	3.5	3.2	4.2	1.7	1.8	2.6
8	3.2	* 4.9	b 4.7	5.8	6.7	2.4	3.0	* 3.7	3.9	1.7	1.5	2.8
9	3.2	5.2	5.5	* 5.5	6.7	2.6	3.7	3.9	3.7	1.5	1.4	3.0
10	3.7	5.2	6.1	5.5	7.9	2.3	3.9	3.7	3.5	1.5	1.4	2.1
11	3.5	4.7	6.7	5.8	7.9	2.1	3.7	2.6	3.5	1.5	1.5	1.8
12	3.2	4.7	b 6.4	5.8	5.5	2.1	4.4	2.8	3.2	1.5	1.4	1.8
13	3.2	3.5	b 6.1	5.8	5.8	2.4	4.4	3.0	2.8	1.7	1.3	1.4
14	3.5	3.5	b 6.4	6.1	6.1	2.4	4.4	3.0	2.4	1.5	1.3	1.2
15	4.4	b 3.0	b 6.1	5.8	6.4	2.1	4.2	3.5	2.3	1.5	1.2	1.2
16	4.4	b 3.5	6.4	5.8	5.5	2.1	4.9	3.2	2.3	1.4	1.2	1.3
17	4.4	5.2	6.7	6.1	4.4	2.1	4.7	2.8	2.3	1.5	1.1	2.4
18	4.4	6.1	6.7	5.5	4.7	2.3	3.0	4.7	1.9	1.5	1.1	3.5
19	4.2	4.7	6.4	5.2	4.9	2.4	2.6	4.7	1.9	1.5	1.3	3.2
20	3.9	6.1	6.4	b 5.2	5.2	2.3	2.6	3.9	1.8	1.3	1.3	* 3.5
21	3.9	6.1	6.7	5.5	6.4	2.4	2.6	4.4	1.7	1.3	a 6.0	3.5
22	4.2	5.5	6.7	5.8	5.8	2.6	3.2	4.4	1.7	1.3	a 4.0	3.5
23	4.2	5.8	6.4	6.1	5.2	3.2	4.4	4.2	1.7	1.3	a 3.0	3.5
24	4.4	6.4	6.4	5.8	6.4	3.0	4.4	4.4	1.7	1.3	a 3.0	3.5
25	4.4	5.8	b 5.2	5.5	6.7	2.8	4.2	4.2	1.7	1.4	a 3.0	3.5
26	4.4	4.7	b 5.8	5.8	5.5	2.6	3.7	3.2	1.8	1.4	a 3.0	3.2
27	4.7	b 3.7	5.5	5.5	5.5	2.6	3.5	2.6	1.7	1.4	a 3.0	3.2
28	4.7	b 4.4	5.2	b 4.4	5.5	2.4	3.7	2.6	1.7	1.3	a 3.0	3.7
29	4.7	5.8	b 4.2	5.5	5.5	2.4	3.7	4.7	1.8	1.3	a 3.0	3.5
30	4.2	6.1	5.2	5.5	-----	2.4	3.5	3.7	1.8	1.3	3.0	2.3
31	4.2	-----	b 5.5	7.5	-----	2.6	-----	5.5	-----	1.3	2.8	-----
Total	11 9.3	15 3	17 7.6	17 2.6	16 9.5	8 5.7	11 5	11 3.9	9 9.4	4 5.8	7 6.8	8 2
Mean	3.85	5.10	5.73	5.57	6.05	2.76	3.83	3.67	3.31	1.48	2.48	2.73
Max.	4.7	6.4	6.7	7.5	7.9	6.7	5.8	5.5	9.6	1.8	13	3.7
Min.	2.8	3.0	4.2	4.4	4.4	2.1	2.6	2.6	1.7	1.3	1.1	1.2
Ac-ft	237	303	352	342	336	170	228	226	197	91	152	163

Calendar year 1960: Max 13 Min 1.4 Mean 4.64 Acre-ft 3,360
Water year 1960-61: Max 13 Min 1.1 Mean 3.86 Acre-ft 2,800

Peak discharge (base 25 cfs).--Aug. 20 (6 p.m.) 114 cfs (3.33ft); Aug. 21 (4 p.m.) 37.8 cfs (2.51 ft).

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

465

10-2925. Bridgeport Reservoir near Bridgeport, Calif.

Location.--Lat 38°19'30", long 119°12'50", in SE 1/4 sec. 34, T.6 N., T.25 E., at Bridgeport Dam on East Walker River, 4 1/2 miles north of Bridgeport.

Drainage area.--362 sq mi.

Records available.--March 1926 to September 1961. Monthly contents only for some periods, published in WSP 1314.

Gage.--Float gage read once daily. Datum of gage is at mean sea level.

Extremes.--Maximum contents during year, 12,900 acre-ft Apr. 3-5 (elevation, 6,446.18); minimum contents, 1 acre-ft Oct. 27, 30. 1926-61: Maximum contents, 44,580 acre-ft June 12, 1938, June 25, 26, 1958 (elevation, 6,460.7 ft); no contents during fall of 1929, 1930, 1960.

Remarks.--Reservoir is formed by earth-fill, rock-faced dam. Storage began Dec. 8, 1923. Dam completed in November 1924. Capacity, 42,460 acre-ft between elevations 6,415 ft (approximate elevation of bottom of reservoir) and 6,460 ft (crest of spillway). Elevation of sill of outlet gate, 6,412 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District.

Cooperation.--Elevations and capacity table furnished by Walker River Irrigation District.

Capacity table, water year 1960-61 (elevation, in feet, and contents, in acre-feet)

6,415	0	6,418	20	6,422	163	6,429	895	6,440	6,240
6,416	3	6,419	42	6,425	334	6,432	1,710	6,444	10,200
6,417	9	6,420	75	6,427	539	6,436	3,450	6,447	13,990

Contents, in acre-feet, at 8 a.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	3,510	6,640	9,000	11,380	12,830	12,320	10,670	10,090	7,080	5,370
2	2	2	3,750	6,720	9,100	11,440	12,830	12,320	10,850	10,140	6,860	5,220
3	2	45	4,020	6,770	9,210	11,500	12,900	12,260	10,910	10,090	6,680	5,180
4	2	107	4,150	6,810	9,270	11,570	12,900	12,190	10,850	10,140	6,500	5,110
5	2	188	4,280	6,900	9,380	11,630	12,900	12,260	10,730	10,200	6,460	5,080
6	2	285	4,380	6,940	9,480	11,690	12,830	12,190	10,730	10,200	-	5,000
7	3	373	4,450	7,030	9,540	11,760	12,770	12,190	10,730	10,140	6,370	4,970
8	3	468	4,510	7,000	9,650	11,820	12,770	12,190	10,730	10,040	6,280	4,860
9	4	571	4,580	7,170	9,760	11,880	12,770	12,130	10,790	9,920	6,240	4,780
10	5	756	4,680	7,220	9,820	11,940	12,700	12,190	10,910	9,870	6,200	4,710
11	6	846	4,780	7,360	9,920	12,000	12,630	12,070	10,970	9,870	6,160	4,680
12	3	1,010	4,890	7,410	10,140	12,070	12,770	11,940	11,030	9,820	6,120	4,510
13	2	1,130	4,970	7,500	10,260	12,130	12,630	12,000	10,970	9,820	6,080	4,440
14	2	1,260	5,040	7,600	10,320	12,190	12,570	11,880	10,910	9,820	6,000	4,480
15	2	1,350	5,150	7,650	10,500	12,260	12,570	11,760	10,790	9,700	5,960	4,410
16	4	1,450	5,220	7,740	10,550	12,260	12,570	11,690	10,730	9,600	5,920	4,350
17	2	1,560	5,330	7,840	10,610	12,320	12,570	11,630	10,610	9,480	5,840	4,250
18	3	1,710	5,440	7,940	10,670	12,380	12,570	11,570	10,550	9,380	5,760	4,180
19	3	1,860	5,520	8,030	10,730	12,440	12,570	11,500	10,550	9,210	5,680	4,150
20	3	1,980	5,600	8,080	10,790	12,500	12,440	11,440	10,550	9,050	5,600	4,080
21	4	2,110	5,720	8,130	10,850	12,500	12,440	11,320	10,610	8,900	5,520	4,020
22	2	2,250	5,800	8,230	10,970	12,500	12,440	11,200	10,670	8,740	5,520	4,020
23	4	2,390	5,920	8,340	11,030	12,570	12,440	11,080	10,550	8,590	5,680	3,960
24	3	2,540	6,000	8,390	11,080	12,630	12,440	10,970	10,380	8,440	5,720	3,930
25	3	2,760	6,080	8,490	11,200	12,630	12,440	10,970	10,260	8,280	5,680	3,900
26	4	2,870	6,200	8,540	11,200	12,700	12,440	10,910	10,140	8,080	5,680	3,840
27	1	2,970	6,280	8,640	11,200	12,700	12,440	10,790	10,140	7,940	5,600	3,810
28	3	3,080	6,280	8,690	11,320	12,700	12,440	10,730	10,140	7,740	5,560	3,750
29	2	3,180	6,460	8,790	-	12,770	12,380	10,670	10,090	7,500	5,520	3,720
30	1	3,290	6,500	8,840	-----	12,770	12,380	10,730	10,040	7,410	5,480	3,660
31	1	-----	6,540	8,950	-----	12,770	-----	10,550	-----	7,310	5,400	-----
(†)	6,415.50	6,435.70	6,440.36	6,442.83	6,444.94	6,446.12	6,445.79	6,444.30	6,443.86	6,441.22	6,438.97	6,436.37
(†)	+1	+3,288	+3,250	+2,410	+2,370	+1,450	-390	-1,830	-510	-2,730	-1,910	-1,740

Calendar year 1960..... † -4,310

Water year 1960-61..... † +3,659

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

WALKER LAKE BASIN

10-2930. East Walker River near Bridgeport, Calif.

Location.--Lat 38°19'40", long 119°12'50", in SW¼NE¼ sec.34, T.6 N., R.25 E., on right bank 1,500 ft downstream from Bridgeport Reservoir, 5 miles north of Bridgeport, and 10 miles upstream from Sweetwater Creek.

Drainage area.--362 sq mi.

Records available.--July 1911 to September 1914 (gage heights only), October 1921 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 6,400 ft (from topographic map). Prior to Oct. 1, 1921, staff gage at site half a mile upstream at different datum. Oct. 1, 1921, to Feb. 21, 1924, water-stage recorder at site 1 mile downstream at different datum. Feb. 22, 1924, to Sept. 30, 1931, water-stage recorder and Oct. 1, 1931, to May 25, 1939, staff gage, at present site at datum 2.34 ft lower.

Average discharge.--38 years(1922-24, 1925-61), 129 cfs (93,390 acre-ft per year).

Extremes.--Maximum daily discharge during year, 191 cfs June 23 (gage height, 1.43 ft); minimum daily, 4.7 Jan. 10, 11, Mar. 11, 20, 21.

1921-61: Maximum discharge, 1,240 cfs Jan. 22, 1943; maximum gage height, 4.95 ft (top of surge); minimum daily, 0.2 cfs Nov. 2-29, Dec. 1-22, 25-28, 1955, Jan. 17-25, 1956.

Remarks.--Records good. Diversion for irrigation of meadow pasture lands near Bridgeport. Flow regulated by Bridgeport Reservoir.

Rating table, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)

0.1	2.5	.6	33
.2	5.0	.8	61
.3	9.0	1.0	96
.4	15	1.5	212

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	3.8	5.0	5.4	6.2	5.4	5.4	3.8	6.0	4.6	13.4	6.4
2	3.4	3.1	5.0	5.4	6.2	5.8	5.4	3.8	7.4	4.6	13.4	6.4
3	3.4	2.8	5.0	5.4	6.2	6.2	1.4	3.8	11.8	5.0	* 13.4	6.4
4	3.4	2.7	5.0	5.4	6.2	6.2	2.9	4.0	11.8	6.6	11.8	6.4
5	3.2	1.9	* 5.0	5.4	6.2	6.2	* 3.2	4.0	* 10.2	* 6.6	9.6	6.4
6	3.6	1.7	5.0	5.8	* 6.2	* 6.2	3.8	3.8	7.3	7.6	9.6	6.4
7	3.7	1.8	5.0	5.8	6.2	6.2	3.8	3.8	7.3	9.2	9.6	6.4
8	3.6	* 1.5	5.0	5.4	5.8	6.2	3.8	* 3.8	7.3	7.5	8.3	6.4
9	3.6	9.0	5.0	* 5.4	5.4	5.8	3.8	4.1	7.8	4.5	6.4	6.4
10	4.2	7.8	5.0	4.7	5.4	5.0	3.7	5.0	8.9	4.5	6.4	6.4
11	* 4.2	7.8	5.0	4.7	5.4	4.7	3.0	6.1	11.4	4.5	6.4	6.4
12	4.0	7.8	5.0	5.0	5.4	5.0	1.8	6.1	12.9	4.5	6.4	6.4
13	3.8	7.4	5.0	5.4	5.4	5.0	1.9	6.1	14.5	5.4	6.4	6.4
14	3.8	7.4	5.0	5.4	5.4	5.0	1.9	6.1	14.5	6.4	6.4	6.4
15	3.8	7.4	5.0	5.4	5.4	5.0	1.9	6.1	14.5	6.4	6.4	6.4
16	3.8	7.4	5.0	5.4	5.4	5.0	2.0	6.1	13.8	6.4	6.4	6.4
17	3.8	7.0	5.0	5.4	5.4	5.0	2.8	6.8	12.7	7.0	6.4	6.4
18	3.8	7.0	5.0	5.4	5.4	5.0	3.2	7.8	12.7	8.3	6.4	6.4
19	3.8	6.6	5.0	5.4	5.4	5.0	4.8	8.3	12.7	8.3	6.4	6.4
20	3.8	6.6	5.0	5.4	5.4	4.7	6.1	9.2	12.7	8.9	6.4	6.4
21	3.8	6.6	5.0	5.4	5.4	4.7	2.4	9.2	13.1	11.0	6.4	6.4
22	3.8	5.8	5.0	5.4	5.4	5.0	2.4	9.2	15.9	10.4	6.4	* 6.4
23	3.8	5.8	5.0	5.4	5.4	5.8	2.5	9.4	19.1	10.4	6.4	6.4
24	3.8	5.8	5.0	5.4	5.4	5.8	2.5	9.6	17.6	11.4	6.4	6.4
25	4.0	5.4	5.0	5.4	5.4	6.2	2.5	10.2	14.5	13.8	6.4	6.4
26	3.7	5.4	5.0	5.8	5.4	6.2	2.5	12.3	12.9	13.8	6.4	6.4
27	3.8	5.4	5.0	6.2	5.4	6.2	2.5	12.0	10.2	13.8	6.4	6.4
28	4.0	5.0	5.0	6.2	5.4	6.2	2.5	12.0	10.2	13.1	6.4	6.4
29	4.0	5.0	5.0	6.2	6.2	6.2	2.4	12.0	10.2	10.8	6.4	6.4
30	3.8	5.0	5.0	6.2	5.4	5.4	3.3	11.6	7.7	10.4	6.4	6.4
31	3.8	5.4	5.4	6.2	5.0	5.0	9.5	9.5	11.2	11.2	6.4	6.4
Total	1,164	3,374	1,554	1,708	1,572	1,713	823.8	2,256	3,496	2,569	2,363	1,920
Mean	37.5	11.2	5.01	5.51	5.61	5.53	27.5	72.8	117	82.9	76.2	64.0
Max.	42	38	5.4	6.2	6.2	6.2	61	123	191	138	134	64
Min.	32	5.0	5.0	4.7	5.4	4.7	5.4	38	60	45	64	64
Ac-ft.	2,310	669	308	339	312	340	1,630	4,470	6,930	5,100	4,690	3,810
Calendar year	1960:		Max 265		Min 2.4		Mean 65.7				Acre-ft 47,680	
Water year	1960-61:		Max 191		Min 4.7		Mean 42.7				Acre-ft 30,910	

*Discharge measurement made on this day.

WALKER LAKE BASIN

467

10-2935. East Walker River above Strosnider ditch, near Mason, Nev.

Location--Lat 38°48'50", long 119°02'50", in NW 1/4 Sec. 14, T. 11 N., R. 26 E., on right bank 0.8 mile upstream from head of Strosnider ditch, 12 miles southeast of Mason, and 13 1/2 miles southeast of Yerington.

Drainage area--1.100 sq mi, approximately.

Records available--January 1947 to September 1961.

Gage--Water-stage recorder. Datum of gage is 4,574.10 ft above mean sea level, datum of 1929. Prior to Oct. 24, 1957, at site 400 ft upstream at datum 0.56 ft higher.

Average discharge--14 years (1947-61), 126 cfs (91,220 acre-ft per year).

Extremes--Maximum discharge during year, about 750 cfs Aug. 25 (gage height, 4.3 ft); minimum daily, 3.4 cfs Apr. 5.
1947-61: Maximum discharge, 1,640 cfs Dec. 24, 1955 (gage height, 6.87 ft, site and datum then in use), from rating curve extended above 1,100 cfs by logarithmic plotting; minimum, 3.1 cfs Mar. 21, 1948; minimum daily, 3.4 cfs Mar. 21-24, 1948, Apr. 5, 1961.

Remarks--Records good except those for periods of ice effect and shifting control, which are fair. Diversions for irrigation above station. Flow regulated by Bridgeport Reservoir.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 19 to July 3, July 26 to Aug. 7)

0.48	3.4	0.7	14	1.5	115
.5	4.0	.8	21	2.0	202
.6	8.4	1.0	40	3.0	419

Discharge, in cubic feet per second, water year October 1960 to September 1961

Discharge in cubic feet per second, water year October 1960 to September 1961													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	2.2	4.3	2.1	b 1.9	2.0	1.5	4.8	8.9	9.7	4.9	6.8	4.2	
2	2.4	4.2	2.3	b 1.9	2.1	1.5	4.4	1.1	5.4	3.1	9.1	4.2	
3	2.7	4.5	2.5	b* 1.9	2.0	1.7	4.0	1.2	4.3	3.0	9.6	4.0	
4	* 2.0	* 4.7	2.4	b 1.9	2.0	1.7	3.7	1.3	7.7	2.8	8.9	4.0	
5	2.9	4.3	b 2.2	b 1.9	1.9	1.7	3.4	1.7	9.1	2.8	9.7	3.8	
						1.7	3.7						
6	2.7	3.9	b 1.9	b 1.9	1.9	1.7	7.9	1.7	8.6	2.9	7.8	4.0	
7	2.7	3.4	b 1.9	b 2.0	2.0	1.6	1.5	2.0	5.3	3.0	2.36	3.9	
8	2.9	3.2	b 2.3	b 2.0	2.0	1.5	2.2	1.9	4.6	4.2	2.28	3.9	
9	3.1	3.0	b 2.3	b 2.1	2.0	1.4	2.6	1.8	4.3	5.3	12.0	5.1	
10	3.4	2.8	b 2.8	b 2.1	1.9	1.4		2.0	4.9	4.0	8.3	4.7	
11	3.6	2.5	b 2.3	b 2.0	1.9	1.3	2.7	2.2	6.1	3.5	7.8	4.5	
12	4.5	2.4	b 2.8	b 1.9	1.9	1.3	3.0	2.8	7.4	3.0	7.2	4.3	
13	3.9	2.5	b 2.3	b 1.9	1.9	1.2	2.6	3.4	9.3	* 2.9	6.7	4.3	
14	4.0	2.5	b 2.3	b 2.0	1.9	1.1	2.1	3.6	9.9	3.0	6.0	* 4.6	
15	4.6	2.5	b 2.0	b 2.0	1.8	1.1	2.1	3.6	* 9.7	3.0	5.4	* 4.6	
16	4.3	2.4	b 2.1	b 2.0	1.7	1.1	1.9	3.4	9.6	2.9	4.6	4.3	
17	4.5	2.4	2.2	b 2.0	1.8	1.1	1.5	2.6	9.7	2.7	3.9	4.5	
18	4.5	2.3	2.3	b 1.9	1.7	1.1	1.4	2.6	8.6	2.9	3.4	4.6	
19	4.3	2.3	2.2	b 1.9	1.7	1.1	1.1	3.2	8.5	3.6	2.9	4.3	
20	4.3	2.3	b 2.1	b 1.9	1.7	1.1	1.2	3.4	9.1	3.7	10.1	4.3	
21	3.7	2.2	2.0	b 2.0	* 1.7	1.0	3.1	4.2	9.3	3.6	18.1	4.5	
22	3.8	2.2	b 2.1	b 2.1	1.6	1.0	2.6	5.0	9.4	4.7	15.5	4.5	
23	3.7	2.2	b 1.9	b 2.3	1.5		8.9	1.7	4.3	12.1	4.6	18.0	4.7
24	4.2	2.0	b 2.1	2.5	1.6		7.9	* 1.7	3.8	14.5	4.7	12.2	4.9
25	4.5	2.0	b 2.0	2.3	1.6		7.9	1.7	5.0	12.9	5.1	35.4	4.6
26													
27	4.0	1.9	b 2.1	2.4	1.6	7.4	1.7	5.0	10.7	8.0	11.0	4.5	
28	3.9	2.0	b 2.0	2.6	1.6	* 6.5	1.5	6.4	* 9.7	8.6	9.3	4.6	
29	3.0	* 2.2	b 1.9	b 2.3	* 1.6	7.0	1.4	7.4	6.4	* 8.5	8.2	4.2	
30	4.3	2.0	b 1.9	2.1	-	6.4	1.1	* 8.9	5.3	8.5	* 5.8	4.5	
31	4.5	2.3	b 1.9	2.1	-----	5.2	8.9	9.1	5.3	6.2	5.0	4.5	
31	4.5	-----	b 1.9	2.1	-----	5.2	-----	10.1	-----	5.7	4.6	-----	
Total	1,154	834	671	639	506	354.0	464.8	1,155.9	2,476	1,354	3,197	1,316	
Mean	37.2	27.8	21.6	20.6	18.1	11.4	15.5	37.3	82.5	43.7	103	43.9	
Max	46	47	28	26	21	17	31	101	145	86	354	51	
Min	2.2	1.9	1.9	1.9	1.5	5.2	3.4	8.9	4.3	2.7	2.9	3.8	
Ac-ft	2,290	1,650	1,330	1,270	1,000	702	922	2,290	4,910	2,690	6,340	2,610	
Calendar year	1960:												
Water year	1960-61:												
			Max	174		Min	11	Mean	53.5	Acre-ft	38,820		
			Max	354		Min	3.4	Mean	38.7	Acre-ft	28,000		

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

10-2952. West Walker River at Leavitt Meadows, near Coleville, Calif.

Location.--Lat 38°19'50", long 119°33'05", in NW $\frac{1}{4}$ sec. 34, T.6 N., R.22 E., on left bank at Leavitt Meadows Lodge, 500 ft upstream from Brownie Creek, 0.9 mile downstream from Leavitt Creek, and 16 $\frac{1}{2}$ miles south of Coleville.

Drainage area.--73 sq mi, approximately.

Records available.--July 1945 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 7,111.32 ft above mean sea level (levels by Bureau of Reclamation). Prior to Oct. 1, 1957, water-stage recorder 0.2 mile upstream at different datum.

Average discharge.--16 years (1945-61), 152 cfs (110,000 acre-ft per year).

Extremes.--Maximum discharge during year, 722 cfs May 25 (gage height, 4.27 ft); minimum, 3.8 cfs Jan. 8.

1945-61: Maximum discharge, 2,810 cfs Nov. 21, 1950 (estimated on basis of records for West Walker River below Little Walker River, near Coleville, Calif.); minimum, 3.8 cfs Jan. 11, 1960, May 25, 1961.

Remarks.--Records good. No storage or regulation above station.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.0	5.0	2.3	78
1.1	7.0	2.7	134
1.5	20	3.1	222
1.9	42	4.1	645

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.6	7.9	1.9	a 1.1	b 1.3	2.1	5.6	2.14	2.25	9.6	2.2	1.7
2	6.6	7.9	b 1.7	a 1.0	1.4	2.2	8.8	2.06	2.32	9.1	2.2	1.6
3	6.6	* 8.5	b 1.6	a 1.0	b 1.2	2.2	15.0	2.17	2.86	12.6	2.2	1.5
4	6.8	8.2	b 1.6	a 1.2	b 1.2	2.1	22.8	2.22	3.70	14.1	2.2	1.4
5	6.8	1.0	b 1.5	a* 1.0	b 1.2	b 2.0	23.8	1.86	4.92	10.6	3.1	1.4
6	* 1.1	1.2	b 1.2	a 1.1	1.4	b 2.2	22.5	1.58	5.73	8.8	3.2	1.3
7	1.6	1.2	b 1.1	b 1.2	1.4	b 1.8	20.3	1.47	5.64	7.8	2.7	1.3
8	1.3	1.1	b 1.2	b 1.3	1.4	b 2.0	16.2	1.70	5.60	7.1	2.4	1.3
9	1.2	1.1	b 1.4	b 1.2	1.7	b 2.2	16.0	2.44	5.01	6.7	2.2	1.3
10	1.2	1.2	b 1.4	b 1.2	2.6	b 2.1	14.8	2.83	5.06	6.5	2.1	1.2
11	1.2	1.3	b 1.5	b 1.2	2.7	b 1.8	15.2	2.06	4.78	6.2	2.4	1.2
12	1.2	1.2	b 1.4	b 1.2	b 2.2	2.2	18.6	1.66	4.20	5.9	3.1	1.2
13	1.2	9.4	b 1.3	b 1.2	b 2.5	2.4	14.8	1.56	4.47	5.6	2.8	1.1
14	1.1	1.1	b 1.3	b 1.2	b 2.4	2.6	14.8	2.10	4.65	5.4	2.4	1.1
15	1.0	b 1.3	b 1.3	b 1.2	2.5	b 2.4	17.5	3.02	4.47	5.0	2.2	1.1
16	1.0	b 1.5	b 1.3	b 1.1	b 2.4	b 2.4	26.8	3.62	4.34	4.6	2.0	1.2
17	1.0	b 1.5	1.4	b 1.2	b 2.2	b 2.6	34.8	4.24	4.20	4.4	1.8	1.9
18	1.0	1.6	1.4	b 1.2	b 2.3	b 2.6	31.9	4.56	3.93	4.1	* 1.8	1.9
19	9.7	b 1.5	b 1.3	b 1.1	b 2.2	b 2.6	20.8	4.02	3.52	3.8	1.8	1.7
20	9.7	1.5	b 1.3	b 1.1	b 2.0	2.8	16.4	3.89	3.30	3.6	1.6	* 1.5
21	9.7	1.5	1.4	b 1.1	b 2.2	3.0	14.5	5.10	3.02	3.4	1.8	1.4
22	9.7	1.5	b 1.3	b 1.2	b 2.2	3.6	12.6	5.37	2.58	3.2	2.0	1.4
23	9.4	1.5	b 1.3	b 1.2	b 2.0	4.8	11.8	5.14	2.28	3.0	2.3	1.3
24	9.1	1.6	b 1.4	b 1.2	b 2.1	4.2	11.5	5.60	2.11	* 3.4	2.0	1.3
25	8.8	1.6	b 1.3	b 1.2	2.2	b 3.7	10.8	6.14	1.88	4.8	1.8	1.3
26	8.5	b 1.5	b 1.4	1.3	b 2.0	b 3.8	* 10.9	5.60	* 1.81	3.6	1.6	1.2
27	7.9	b* 1.4	b 1.3	1.3	b* 2.0	* 3.8	1.14	4.42	1.66	3.2	1.6	1.2
28	8.2	b 1.5	b 1.2	b 1.1	b 2.0	3.4	12.6	4.52	1.41	2.8	1.6	1.4
29	7.9	b 1.6	a 1.0	b 1.2	-	3.6	16.2	3.75	1.18	2.6	1.8	1.8
30	7.6	1.6	a 1.1	b* 1.2	-----	3.8	17.9	* 2.58	1.03	2.5	2.0	1.7
31	7.9	-----	a 1.1	b 1.3	-----	4.5	-----	2.35	-----	2.4	1.9	-----
Total	298.5	387.9	41.9	36.3	54.9	87.5	507.6	10,177	10,391	1,764	66.8	41.9
Mean	9.63	12.9	13.5	11.7	19.6	28.2	169	328	346	56.9	21.5	14.0
Max.	16	16	19	13	27	48	348	614	573	141	32	19
Min.	6.6	7.9	10	10	12	18	56	147	103	24	16	11
Ac-ft	592	769	831	720	1,090	1,740	10,070	20,190	20,610	3,500	1,320	831
Calendar year	1960:			Max 840		Min 5.6		Mean 96.7		Acre-ft 70,220		
Water year	1960-61:			Max 614		Min 6.6		Mean 86.0		Acre-ft 62,260		

Peak discharge (base, 600 cfs).-- May 25 (12:00 p.m.) 722 cfs (4.27 ft); June 6 (10:00 p.m.) 654 cfs (4.12 ft).

* Discharge measurement made on this day.

a No gage height record.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

469

10-2955. Little Walker River near Bridgeport, Calif.

Location.--Lat 38°21'30", long 119°26'30", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 22, T.6 N., R.23 E., on right bank three-quarters of a mile north of Sonora Junction, $1\frac{1}{2}$ miles upstream from mouth, and 14 miles northwest of Bridgeport.

Drainage area.--63 sq mi, approximately.

Records available.--April to August 1910, October 1944 to September 1961. Prior to October 1958, published as East Fork West Walker River near Bridgeport.

Gage.--Water-stage recorder. Altitude of gage is 6,790 ft (from topographic map). April to August 1910, staff gage at site 1 mile upstream at different datum.

Average discharge.--17 years (1944-61) 48.2 cfs (34,900 acre-ft per year).

Extremes.--Maximum discharge during year, 272 cfs Aug. 22 (gage height, 1.92 ft); minimum, 8.0 cfs Aug. 18.

1910, 1944-61: Maximum discharge, 994 cfs Dec. 23, 1955 (gage height, 2.80 ft), from rating curve extended above 370 cfs on basis of slope-area measurements at gage heights 2.60 and 2.80 ft; maximum gage height recorded, 3.63 ft Jan. 3, 1945 (backwater from ice); minimum discharge recorded, 4.9 cfs Nov. 17, 1948, but may have been less during periods of ice effect.

Remarks.--Records good except those for periods of ice effect, which are fair. Small diversions above station.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

0.4	8	.9	33
.5	11	1.1	58
.7	19	1.4	118

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	11	11	b 9	b 12	b 13	16	27	70	37	9.8	15
2	10	11	b 13	b 9	12	14	21	27	73	35	14	15
3	10	* 12	b 13	b 9	12	13	24	27	72	42	16	15
4	10	11	b 12	b 9	b 11	13	28	27	73	40	17	15
5	10	13	b 12	b * 9	b 11	b 12	28	25	87	34	21	15
6	* 13	13	b 11	b 9	b 11	b 12	27	24	93	31	18	14
7	12	12	b 10	b 10	13	b 11	24	23	97	31	19	13
8	11	b 12	b 9	b 11	13	b 12	21	27	102	31	17	14
9	12	b 11	b 10	b 11	15	b 12	22	31	100	30	15	14
10	12	b 12	b 10	b 10	19	b 11	20	32	100	29	15	14
11	13	13	b 11	b 10	b 16	b 11	21	31	100	27	16	13
12	12	13	b 10	b 10	b 13	b 11	23	29	95	27	15	13
13	12	b 12	b 9	b 10	b 13	12	21	26	95	27	13	13
14	12	b 12	b 10	b 10	b 13	13	21	31	97	21	11	13
15	11	b 12	b 10	b 10	b 13	13	23	35	97	17	11	13
16	b 12	b 12	b 10	b 10	b 12	b 12	27	42	97	18	9.5	13
17	12	b 12	b 11	b 10	b 11	b 13	31	51	97	17	10	16
18	12	14	11	b 9.5	b 12	b 13	31	61	93	18	* 8.9	15
19	12	b 13	b 11	b 9.5	b 11	b 13	24	60	87	20	9.8	15
20	12	b 13	b 11	b 9.5	b 11	13	23	60	83	19	9.2	* 13
21	12	b 13	11	b 9.5	b 12	13	22	68	77	18	9.2	13
22	11	b 13	b 11	b 9.5	b 13	15	22	75	72	18	4.0	13
23	11	b 13	b 11	b 9.5	b 11	18	23	75	66	17	2.7	13
24	11	13	b 11	b 9.5	b 12	15	24	87	65	* 18	17	13
25	11	13	b 11	b 9.5	13	b 15	23	95	63	20	16	13
26	11	12	b 11	9.8	b 13	14	* 23	87	* 58	18	15	13
27	11	b * 11	b 11	9.8	b * 12	* 13	23	81	52	16	15	13
28	11	b 11	b 11	b 9.5	b 13	b 13	23	83	46	12	15	14
29	11	b 12	b 9	b 9.5	-	b 13	25	75	44	10	15	15
30	11	13	b 9	* 9.8	-----	14	27	* 60	40	10	21	13
31	11	-----	9	12	-----	15	-----	68	-----	10	16	-----
Total	352	368	334	302.4	353	405	711	1,554	2,395	718	481.4	414
Mean	11.4	12.3	10.8	9.75	12.6	13.1	23.7	50.1	79.8	23.2	15.5	13.8
Max.	13	14	15	12	19	18	31	95	102	42	40	16
Min.	10	11	9	9	11	11	16	23	40	10	8.9	13
Ac-ft	698	730	662	600	700	803	1,410	3,080	4,750	1,420	955	821
Calendar year	1960:		Max 132		Min 9		Mean 234		Acre-ft 16,970			
Water year	1960-61:		Max 102		Min 8.9		Mean 23.0		Acre-ft 16,630			

Peak discharge (base, 200 cfs)--Aug. 22 (8:15 p.m.) 272 cfs (1.92 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

10-2960. West Walker River below Little Walker River, near Coleville, Calif.

Location.--Lat 38°22'45", long 119°27'00", in NW¼SE¼ sec.9, T.6 N., R.23 E., on left bank 100 ft downstream from Little Walker River, 200 ft upstream from bridge on U.S. Highway 395 and 13 miles southeast of Coleville.

Drainage area.--182 sq mi.

Records available.--April 1938 to September 1961. Prior to October 1958, published as "below East Fork."

Gage.--Water-stage recorder. Altitude of gage is 6,640 ft (from topographic map). Prior to Oct. 1, 1939, at site 125 ft downstream at datum 1.00 ft higher.

Average discharge.--23 years, 249 cfs (180,300 acre-ft per year).

Extremes.--Maximum discharge during year, 866 cfs May 25 (gage height 3.45 ft); minimum daily, 21 cfs Dec. 4.

1938-61: Maximum discharge, 6,220 cfs Nov. 20, 1950 (gage height, 8.10 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement of peak flow; minimum, 4.0 cfs Nov. 18, 1948, result of freezeup.

Maximum discharge recorded prior to 1938, 5,800 cfs Dec. 11, 1937, by slope-area measurement.

Remarks.--Records good except those periods of ice effect and no gage-height records, which are fair. Station is above diversions except a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 7 miles upstream.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 22 to Sept. 30)

0.7	20	2.0	257
.9	38	2.5	430
1.1	64	3.0	648
1.5	136	3.3	801

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.	
1	22	* 23	*a 4.0	b 32	* 38	43	85	284	* 366	* 153	* 34	
2	* 22	23	a 38	b 31	37	* 44	119	269	366	144	39	
3	22	26	a 24	b 31	35	45	205	278	411	181	49	
4	23	26	a 21	b 30	34	43	300	290	478	219	50	
5	23	29	a 26	b 30	33	43	324	257	591	170	57	
6	27	31	a 24	b 31	37	39	300	226	693	142	64	
7	32	30	a 25	a 32	36	48	281	206	698	126	54	
8	30	27	a 26	a 33	36	46	224	229	693	116	46	
9	29	27	a 30	a 32	39	46	224	310	648	105	38	
10	30	30	a 31	a 31	58	43	203	355	643	105	39	
11	29	32	a 34	a 31	64	42	198	278	605	97	46	
12	28	31	a 29	a 30	45	42	249	235	551	95	57	
13	28	26	a 29	a 30	46	43	198	213	573	93	50	
14	26	26	a 31	a 30	45	46	198	263	600	85	42	
15	24	b 21	a 30	a 30	45	48	221	370	578	72	38	
16	23	b 23	a 33	a 31	44	48	317	430	564	68	35	
17	23	b 28	a 35	a 31	40	50	407	508	551	64	34	
18	23	35	a 34	a 30	40	48	403	555	512	63	33	
19	23	35	a 31	a 30	40	49	284	516	470	57	34	
20	23	33	a 31	a 30	41	51	229	495	454	56	36	
21	23	34	a 34	a 30	42	54	206	610	419	49	36	
22	23	33	a 30	a 30	44	63	186	648	381	50	72	
23	23	34	a 30	a 31	38	85	175	634	341	46	61	
24	24	36	a 31	a 32	44	76	172	678	327	50	44	
25	24	b 34	a 27	a 31	43	67	164	759	294	72	35	
26	24	b 27	a 35	a 31	40	67	161	688	281	63	36	
27	23	b 26	a 29	a 31	38	64	166	573	257	53	37	
28	24	b 32	a 34	a 31	42	61	* 177	573	221	44	38	
29	24	42	*a 28	a 33	-	60	206	499	186	39	37	
30	23	38	b 30	a 36	-----	61	240	385	166	37	54	
31	24	-----	b 33	a 41	-----	72	-----	374	-----	35	45	
Total	769	898	943	973	1,164	1,637	6,822	12,988	13,918	27,49	1,370	1,093
Mean	24.8	29.9	30.4	31.4	41.6	52.8	227	419	464	88.7	44.2	36.4
Max.	32	42	40	41	64	85	407	759	698	219	72	49
Min.	22	23	21	30	33	39	85	206	166	35	33	26
Ac-ft	1,530	1,780	1,870	1,930	2,310	3,250	13,530	25,760	27,610	5,450	2,720	2,170
Calendar year	1960:			Max	1,050	Min	19	Mean	138	Acre-ft	99,850	
Water year	1960-61:			Max	759	Min	21	Mean	124	Acre-ft	89,990	

Peak discharge (base 1,120 cfs).--No flow above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

10-2965. West Walker River near Coleville, Calif.

Location.--Lat 38°30'55", long 119°27'15", in NW-NE sec.28, T.8 N., R.23 E., on left bank a quarter of a mile downstream from Rock Creek and 5 miles southeast of Coleville.

Drainage area.--245 sq mi.

Records available.--October 1902 to July 1908 (published as "West Fork of Walker River" near Coleville 1903, 1905-8; and as Walker River (West Fork) near Coleville 1904), March 1909 to September 1910, June 1915 to March 1938, May 1957 to September 1961. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,520 ft (from topographic map). Prior to July 31, 1908, staff gage at site half a mile upstream at different datum. Mar. 1, 1909, to Aug. 31, 1910, staff gage and June 18, 1915, to Aug. 15, 1919, water-stage recorder near present site at different datums. Aug. 16, 1919, to Mar. 31, 1938, water-stage recorder at site 1,000 ft upstream at different datum.

Average discharge.--32 years (1902-7, 1909-10, 1915-37, 1957-61), 269 cfs 194,700 acre-ft per year).

Extremes.--Maximum discharge during year, 869 cfs May 26 (gage height, 2.75 ft); minimum daily, 24 cfs Nov. 15. 1915-38, 1957-61: Maximum discharge, 6,500 cfs Dec. 11, 1937, from slope-area measurement of peak flow; minimum, 5 cfs Dec. 3, 1924, Aug. 27, 1931.

Remarks.--Records good except those for periods of ice effect and no gage-height record, which are fair. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 17 miles upstream.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, discharge, in cubic feet per second)

0.6	16	1.5	185
.8	39	2.0	370
1.1	87	2.6	770

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	30	56	33	45	48	85	269	346	167	35	44
2	* 27	29	52	a 33	a 43	* 48	106	265	338	155	36	35
3	27	32	b 36	a 33	39	46	176	269	370	185	48	36
4	29	34	b 33	a 32	35	42	273	264	426	240	50	34
5	* 29	34	b 31	a 33	36	40	307	262	540	195	59	35
6	29	35	b 29	a 33	39	39	284	232	674	164	75	35
7	35	34	b 30	a 35	39	39	273	205	674	142	62	34
8	35	31	b 31	a 36	38	44	222	211	690	138	56	32
9	35	34	b 35	a 36	40	44	222	277	642	123	45	42
10	35	34	b 36	a 34	56	36	202	330	618	123	44	44
11	36	36	40	a 32	a 66	36	188	273	626	115	51	44
12	35	42	b 34	a 32	a 58	36	236	229	522	112	60	42
13	35	31	b 34	a 32	a 48	36	198	202	534	112	59	42
14	35	b 31	38	a 32	a 49	39	198	229	561	104	46	40
15	34	b 24	b 36	a 32	a 49	44	208	319	554	89	40	40
16	32	b 27	39	a 32	a 49	40	284	375	516	84	36	42
17	32	b 34	42	a 32	a 48	50	346	438	510	77	35	56
18	32	b 40	40	a 32	a 42	45	346	492	480	72	32	60
19	32	b 40	38	a 32	a 42	48	273	474	438	65	32	57
20	32	b 38	b 38	a 32	a 42	56	225	426	405	62	40	52
21	31	42	40	a 32	a 44	54	208	554	385	56	39	50
22	31	39	36	a 32	a 46	62	188	610	354	54	46	48
23	31	40	36	a 32	a 42	84	179	589	322	52	87	46
24	30	40	38	a 32	48	80	170	642	315	52	52	45
25	30	40	b 34	a 34	48	73	170	730	288	75	39	45
26	30	b 34	42	a 35	a 43	73	167	706	281	73	36	44
27	29	b 29	35	a 34	40	70	170	528	258	60	36	40
28	30	b 38	40	a 32	46	68	* 182	554	232	51	39	38
29	30	44	*b 33	a 32	-	64	208	492	208	44	39	45
30	29	42	b 33	a 32	-----	67	232	366	182	40	52	44
31	30	-----	b 33	a 36	-----	* 77	-----	346	39	48	-----	-----
Total	974	1,058	1,148	1,021	1,260	1,628	6,526	12,158	13,289	3,120	1,456	1,291
Mean	31.4	35.3	37.0	32.9	45.0	52.5	218	392	443	101	47.0	43.0
Max.	36	44	56	36	66	84	346	730	690	240	87	60
Min.	27	24	29	32	35	36	85	202	182	39	32	32
Ac-ft	1,930	2,100	2,280	2,030	2,500	3,230	12,940	24,120	26,360	6,190	2,890	2,560
Calendar year	1960:		Max	1,070	Min	24	Mean	144	Acre-ft		104,400	
Water year	1960-61:		Max	730	Min	24	Mean	123	Acre-ft		89,130	

Peak discharge (base, 1,120 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

WALKER LAKE BASIN

10-2970. Topaz Reservoir near Topaz, Calif.

Location.--Lat 38°41'35", long 119°31'10", in NW 1/4 sec. 33, T. 10 N., R. 22 E., at outlet works of Topaz Reservoir, 5½ miles north of Topaz.

Records available.--December 1921 to September 1961. Contents for end of the month only for December 1921 to September 1931 published in WSP 1734.

Gage.--Float and staff gages read once daily. Datum of gage is at mean sea level (levels by Walker River Irrigation District).

Extremes.--Maximum contents during year, 15,480 acre-ft June 12 (elevation, 4,982.05 ft); no contents Oct. 1-15.
1921-61: Maximum contents observed, 60,240 acre-ft June 30, 1941 (elevation, 5,005.35 ft); no contents observed Oct. 31, 1924, Sept. 22, 24-30, Oct. 1-15, 1960.

Remarks.--Topaz Reservoir, formerly known as Alkali Lake, was formed by the diversion of water from West Walker River through a feeder canal and the construction of an outlet tunnel through a low saddle in rim of lake. Storage began about December 1921. Usable capacity, 59,440 acre-ft between elevations 4,972.30 ft (lowest practical elevation for diversion through tunnel, bottom of outlet tunnel at elevation 4,970 ft) and 5,005 ft (3 ft below top of levee). Capacity of reservoir increased from about 45,000 acre-ft to 59,440 acre-ft in October 1937 by an earth-fill, rock-faced levee at south end. Figures given herein represent usable contents. Water is used for irrigation in Walker River Irrigation District.

Cooperation.--Elevations furnished by Walker River Irrigation District.

Capacity table, water year 1960-61 (elevation, in feet, and contents, in acre-feet)

4,972.3	0	4,980	12,130
4,974	2,620	4,983	17,050
4,977	7,320		

Contents, in acre-feet, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	428	3150	6780	9780	13040	14590	13990	14350	13890	7070	4770
2	0	459	3360	6880	9890	13140	14590	13970	14380	13820	6820	4680
3	0	505	3600	6970	10000	13250	14580	13890	14350	13790	6550	4550
4	0	767	3710	7070	10110	13350	14630	13890	14310	13740	6330	4440
5	0	798	3830	7160	10230	13430	14740	13870	14360	13760	6170	4330
6	0	952	3930	7260	10320	13510	14820	13810	14640	13730	5960	4240
7	0	1080	4050	7350	10440	13610	14820	13710	14890	13640	5740	4140
8	0	1230	4080	7450	10600	13680	14770	13640	15050	13510	5620	4020
9	0	1290	4140	7560	10710	13760	14690	13550	15180	13380	5550	3900
10	0	1380	4210	7650	10810	13820	14610	13550	15270	13190	5520	3800
11	0	1480	4330	7750	10900	13890	14590	13630	15400	12980	5480	3710
12	0	1540	4460	7860	11100	13900	14640	13560	15480	12750	5430	3610
13	0	1630	4520	7960	11220	13950	14710	13500	15430	12580	5370	3490
14	0	1720	4640	8050	11350	14020	14640	13430	15410	12330	5330	3360
15	0	1810	4740	8150	11470	14080	14560	13400	15450	12030	5290	3240
16	15	1880	4800	8240	11600	14130	14500	13500	15400	11730	5220	3150
17	31	1970	4960	8340	11710	14200	14530	13640	15350	11430	5150	3050
18	92	2030	5080	8430	11810	14280	14660	13820	15320	11110	5050	2960
19	153	2110	5150	8530	11920	14330	14680	14000	15280	10810	4960	2900
20	168	2190	5270	8610	12030	14380	14540	14070	15170	10480	4900	2810
21	184	2260	5370	8690	12160	14410	14430	13990	15040	10190	4930	2740
22	214	2340	5460	8780	12280	14450	14430	14130	14900	9920	4940	2650
23	245	2430	5590	8860	12390	14500	14450	14230	14810	9620	4940	2560
24	275	2530	5710	8960	12490	14510	14450	14270	14770	9340	5050	2460
25	291	2620	5840	9070	12620	14530	14410	14450	14710	9040	5040	2400
26	306	2730	5960	9180	12710	14530	14360	14690	14610	8750	5040	2340
27	321	2760	6060	9300	12810	14530	14250	14770	14480	8500	5010	2280
28	337	2810	6180	9390	12930	14560	14180	14680	14300	8230	4960	2220
29	352	2840	6400	9490	-	14580	14120	14690	14120	7930	4930	2160
30	382	3070	6550	9580	-----	14580	14020	14640	13970	7610	4900	2090
31	398	-----	6660	9680	-----	14590	-----	14410	-----	7320	4830	-----
(†)	4,972.56	4,974.29	4,976.58	4,978.48	4,980.49	4,981.51	4,981.16	4,981.40	4,981.13	4,977.00	4,975.42	4,973.66
(*)	+398	+2,670	+3,750	+3,020	+1,660	+1,660	-570	+390	-440	-6,650	-2,490	-2,740

Calendar year 1960.....: -1,460

Water year 1960-61.....: +2,090

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

10-2975. West Walker at Hoye Bridge, near Wellington, Nev.

Location.--Lat 38°43'40", long 119°25'40", in NE-SE¹ sec.17, T.10 N., R.23 E., on left bank 20 ft upstream from Hoye Bridge, 2 miles upstream from head of Saroni Canal, and 4 miles southwest of Wellington.

Drainage area.--504 sq mi.

Records available.--April to August 1910 (published as West Walker River near Wellington), July 1920 to September 1923, March 1924 to September 1932, October 1957 to September 1961. Monthly discharge only for some periods published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,980 ft (from topographic map). April to August 1910 staff gage at same site at different datum. July 1, 1920, to Sept. 30, 1923, water-stage recorder at site 3 miles downstream (1 mile downstream from Saroni Canal) at different datum and supplemental staff gage on Saroni Canal 1 mile downstream from head. Mar. 1, 1924, to Sept. 30, 1932, water-stage recorder at same site at different datum.

Average discharge.--14 years (1920-23, 1925-32, 1957-61), 199 cfs (144,100 acre-ft per year).

Extremes.--Maximum discharge during year, 772 cfs Aug. 13 (gage height, 7.30 ft); minimum 4.8 cfs Jan. 5. 1910, 1920-23, 1924-32, 1957-61: Maximum discharge, 2,180 cfs June 6, 1922; minimum observed, that of Jan. 5, 1961.

Remarks.--Records good except those for periods of ice effect and backwater from cloudburst silt deposit, which are fair. Flow regulated by off-channel storage in Topaz Reservoir since Jan. 30, 1922. Diversions for irrigation of about 10,500 acres above station. Records include releases from Topaz Reservoir and all return flow from Antelope Valley.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 22 to Mar. 1, Apr. 23 to Sept. 30)

0.8	6	2.0	125
.9	11	3.0	308
1.1	24	4.0	527
1.4	50		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	21	20	b 16	16	6.5	37	128	382	90	130	73
2	17	18	23	b 15	15	11	38	167	371	76	130	77
3	16	* 16	21	b 12	15	* 12	50	174	365	76	124	78
4	16	16	20	b* 12	14	12	84	176	360	74	114	77
5	* 17	15	20	b 12	14	11	114	172	358	77	116	74
6	16	13	b 19	b 16	14	10	174	172	382	83	112	74
7	16	12	b 17	b 18	15	11	177	164	461	90	159	70
8	16	12	b 18	b 19	18	10	174	155	466	90	108	64
9	18	13	b 18	b 17	15	9.5	162	152	461	106	49	71
10	18	13	b 18	16	12	11	151	172	461	109	35	71
11	18	13	b 17	b 18	12	10	73	209	463	122	42	71
12	18	17	b 17	b 19	11	10	79	162	470	136	92	* 71
13	18	17	b 17	b 19	12	10	138	154	470	* 144	217	70
14	19	17	17	20	11	9.5	151	154	466	151	63	69
15	18	17	b 18	19	10	9.5	152	186	* 472	152	61	68
16	19	18	18	19	10	9.5	160	130	463	149	66	62
17	19	20	19	19	b 9.5	10	195	270	422	154	69	62
18	19	21	18	b 19	10	10	236	329	406	164	70	62
19	20	21	18	b 18	9	12	266	373	406	154	69	61
20	20	22	17	b 17	8.5	11	252	389	400	147	66	60
21	20	22	17	b 16	9	11	172	395	352	141	79	60
22	20	22	16	b 16	8	15	136	411	306	149	85	59
23	19	20	b 16	b 17	* 8	15	133	457	254	167	86	58
24	19	20	b 16	16	7.5	23	* 131	468	231	169	110	57
25	20	20	b 16	17	7	26	131	479	227	172	106	56
26	20	20	17	17	7	25	136	488	* 223	157	58	56
27	21	21	17	17	7	26	131	490	220	* 159	56	51
28	21	* 20	17	17	6.5	* 27	102	486	196	155	57	52
29	21	19	b 16	18	-	26	106	* 492	162	144	* 68	57
30	21	18	b 16	17	-----	26	122	488	120	136	68	56
31	22	-----	b 16	* 16	-----	26	-----	457	-----	135	64	-----
Total	579	534	550	524	311.0	451.5	4163	9099	16796	4028	2729	1947
Mean	18.7	17.8	17.7	16.9	11.1	14.6	139	294	360	130	88.0	64.9
Max.	22	22	23	20	18	27	266	492	472	172	217	78
Min.	16	12	16	12	6.5	6.5	37	128	120	74	35	51
Ac-ft	1,150	1,060	1,090	1,040	617	896	8,260	18,050	21,410	7,990	5,410	3,860
Calendar year	1960:			Max	520	Min	12	Mean	110	Acre-ft 80,200		
Water year	1960-61:			Max	492	Min	6.5	Mean	97.8	Acre-ft 70,830		

Peak discharge (base, 700 cfs).--Aug. 13 (1:10 a.m.) 772 cfs (7.30 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

CARSON RIVER BASIN

10-3045. Silver Creek below Pennsylvania Creek, near Markleeville, Calif.

Location.--Lat 38°36'00", long 119°46'30", in SE¼NE¼ sec.28, T.9 N., R.20 E., on left bank a quarter of a mile downstream from Pennsylvania Creek, 4 miles upstream from mouth, and 6½ miles south of Markleeville.

Drainage area.--20 sq mi, approximately.

Records available.--October 1946 to September 1961. October and November 1946 monthly discharge only, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,500 ft (from topographic map). Prior to Aug. 3, 1954, at site 180 ft upstream at datum 3.20 ft higher. Aug. 3, 1954, to Sept. 16, 1957, at site 30 ft upstream at datum 1.00 ft higher.

Average discharge.--15 years (1946-61), 41.2 cfs (29,830 acre-ft per year).

Extremes.--Maximum discharge during year, 249 cfs Aug. 12 (gage height, 3.05 ft); minimum, 1.1 cfs Nov. 4.

1946-61: Maximum discharge, 1,520 cfs Dec. 23, 1955 (gage height, 6.09 ft, site and datum then in use), from rating curve extended above 450 cfs on basis of slope-area measurement of peak flow; minimum, 0.6 cfs Dec. 5, 1959.

Remarks.--Records good except those for periods of no gage-height record which are fair. Flow partly regulated by three small reservoirs (total capacity, about 1,700 acre-ft).

Rating table, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)

0.8	1.2	1.8	28
.9	2.0	2.1	50
1.1	4.4	2.5	95
1.3	8.4	2.8	155
1.5	14		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	2.2	5.5	b 3.8	3.1	7.3	2.5	6.3	5.4	a 1.5	3.4	1.6
2	1.8	2.2	5.1	b 3.7	3.8	7.7	4.3	6.2	6.0	a 1.4	3.4	1.6
3	1.8	2.3	4.8	b 3.7	3.7	7.3	7.5	6.8	7.1	a 1.3	3.3	1.5
4	1.8	1.5	4.8	3.6	3.4	6.8	7.9	6.1	8.2	1.2	3.2	1.4
5	1.8	2.2	4.8	3.4	3.7	6.2	6.0	5.2	9.1	1.1	2.7	1.4
6	3.2	2.7	4.6	3.4	4.0	6.2	5.6	4.7	9.2	1.0	2.1	1.6
7	2.6	3.3	4.4	3.7	4.0	6.6	4.8	4.6	8.7	a 1.0	2.6	1.6
8	2.3	2.8	4.4	3.6	4.1	6.6	4.5	5.8	8.2	a 9	3.0	1.5
9	2.5	3.3	4.4	3.6	8.1	6.6	4.4	7.5	6.9	a 9	2.4	1.2
10	3.1	3.8	4.4	3.6	2.0	6.2	4.1	7.3	7.1	a 8	1.2	6.2
11	3.3	4.3	4.3	3.7	1.4	6.4	4.9	5.8	6.3	a 8	8.1	4.0
12	3.3	3.4	4.3	3.7	1.0	6.4	4.7	5.1	5.9	a 7	1.5	3.3
13	* 3.0	2.3	4.3	3.7	b 8.9	7.3	4.1	5.1	6.0	a 6	5.8	2.8
14	2.5	2.5	4.4	3.7	8.4	8.4	4.1	6.8	5.9	a 6	4.1	2.5
15	2.3	* 2.6	4.3	3.7	8.4	8.4	5.4	8.0	5.4	a 5	3.7	* 2.5
16	2.3	2.9	4.3	3.7	7.3	7.3	7.1	9.2	5.0	a 5	3.6	3.0
17	2.4	3.7	4.3	3.7	6.9	7.1	* 9.2	10.6	4.8	* 5.1	3.6	7.3
18	2.5	5.3	4.1	3.7	b 6.6	7.3	6.9	11.5	4.3	4.9	3.3	4.6
19	2.5	4.4	* 4.1	3.8	7.0	7.5	5.2	9.7	* 4.2	4.6	3.7	4.0
20	2.4	4.9	4.1	4.0	* 7.5	* 5.2	4.4	11.8	3.9	4.3	3.8	3.7
21	2.4	5.3	4.3	3.8	8.9	1.2	3.9	13.1	a 3.6	4.3	3.8	3.0
22	2.4	4.4	4.4	3.8	9.2	1.8	3.4	* 13.3	a 3.3	9.0	3.4	2.5
23	2.4	4.4	4.6	* 3.7	7.6	2.0	3.2	12.5	a 3.0	1.7	6.7	2.5
24	2.3	4.8	4.8	3.7	8.2	1.4	3.1	12.9	a 2.7	1.9	* 1.3	2.5
25	2.3	4.6	4.6	3.6	8.2	1.3	3.0	13.6	a 2.4	2.2	1.3	2.5
26	2.3	3.3	4.8	3.4	7.1	1.2	3.2	10.9	2.1	3.2	1.3	a 2.5
27	2.2	3.7	4.6	3.0	7.0	1.1	3.8	9.9	a 1.9	4.4	1.3	a 2.5
28	2.3	4.0	4.4	2.9	6.8	1.0	4.6	8.5	a 1.8	4.2	1.3	a 5.0
29	2.3	4.4	b 4.1	3.0	-	1.1	5.6	7.0	a 1.7	4.1	1.3	a 3.7
30	2.2	4.4	4.3	3.0	-	1.4	6.4	6.2	a 1.6	3.9	1.3	a 2.5
31	2.3	-	4.1	3.3	-	1.8	-	5.8	-	3.5	1.6	-
Total	74.6	105.9	138.7	110.7	205.9	295.8	1,478	2,578	1,517	471.2	448.6	207.1
Mean	2.41	3.53	4.47	3.57	7.35	9.54	49.3	83.2	50.6	15.2	14.5	6.90
Max.	3.3	5.3	5.5	4.0	20	20	92	136	92	44	34	16
Min.	1.8	1.5	4.1	2.9	3.1	6.2	25	46	16	4.3	3.3	2.5
Ac-ft.	148	210	275	220	408	587	2,930	5,110	3,010	935	890	411
Calendar year	1960:		Max 187		Min 1.5		Mean 22.2			Acre-ft 16,081		
Water year	1960-61:		Max 136		Min 1.5		Mean 20.9			Acre-ft 15,130		

Peak discharge (base 190 cfs).--May 25 (5:00 p.m.) 190 cfs (289 ft); Aug. 12 (4:00 p.m.) 249 cfs (3.05 ft).

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

10-3082. East Fork Carson River below Markleeville Creek near Markleeville, Calif.

Location--Lat 38°42'50", long 119°45'50", in SW-NE sec.15, T.10 N., R.20 E., on right bank 0.5 mile downstream from Markleeville Creek and 1½ miles north-northeast of Markleeville.

Drainage area--299 sq mi.

Records available--August 1960 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 5,400 ft (from topographic map).

Extremes--1960: Maximum discharge during period Aug. 17 to Sept. 30, 61 cfs Aug. 23 (gage height, 0.83 ft); minimum, 22 cfs Sept. 21.

1960-61: Maximum discharge during year, 975 cfs May 26 (gage height, 2.45 ft); minimum, 26 cfs Oct. 2.

Remarks--Records excellent except those for periods of ice effect and no gage-height record which are fair. A few small diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, about 5,000 acre-ft).

Rating table, Aug. 17, 1960, to Sept. 30, 1961, except periods of ice effect
(gage height in feet, and discharge, in cubic feet per second)

0.5	22	1.2	151
.6	30	1.5	272
.8	56	2.0	572
1.0	94	2.3	820

Discharge, in cubic feet per second, 1960

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	--	36	5	--	33	9	--	30	13	--	29	17	50	27	21	48	22	25	55	22
2	--	37	6	--	30	10	--	45	14	--	28	18	49	25	22	46	22	26	53	23
3	--	35	7	--	30	11	--	50	15	--	29	19	49	24	23	59	23	27	52	27
4	--	33	8	--	30	12	--	39	16	--	27	20	48	22	24	58	22	28	52	28
Total																			--	885
Mean																			--	29.4
Runoff in acre-feet																			--	1,760

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	37	77	b 56	59	81	180	456	450	126	68	53
2	27	37	* 88	b 50	64	84	236	431	456	120	68	49
3	27	43	79	b 52	66	86	395	456	463	132	70	49
4	28	46	70	b 66	59	81	516	456	502	145	68	52
5	28	42	b 70	b 59	56	79	463	389	558	132	68	52
6	33	50	b 53	b 66	59	75	401	360	587	123	71	58
7	37	53	b 50	b 73	61	77	401	338	580	120	68	52
8	34	46	b 58	b 70	59	84	344	377	602	107	79	49
9	36	45	b 62	b 59	66	86	355	489	551	104	70	46
10	41	49	b 68	b 55	a 100	79	322	587	523	126	56	37
11	42	55	b 86	b 55	a 180	81	338	463	523	120	59	34
12	42	71	b 73	b 55	a 120	79	401	395	476	115	61	30
13	* 45	50	b 77	b 53	a 105	81	312	360	463	115	55	30
14	43	50	b 84	b 53	a 98	88	317	437	456	104	41	28
15	43	* 46	b 77	b 53	a 105	94	344	544	450	94	37	* 27
16	42	52	b 70	b 53	a 90	84	463	580	431	102	36	29
17	42	56	68	b 55	a 82	94	* 587	640	425	* 90	40	50
18	41	68	66	b 55	a 84	84	565	713	389	88	36	43
19	41	66	b 61	b 49	a 76	92	407	672	* 366	92	37	39
20	41	59	b 59	b 53	* 82	* 107	338	664	333	88	45	35
21	40	63	b 56	b 53	88	107	* 307	775	297	88	41	34
22	40	56	b 56	b 59	94	126	287	* 793	272	90	33	34
23	39	58	b 59	*b 53	79	187	282	757	263	99	39	34
24	39	61	b 59	b 55	88	158	254	766	227	94	* 48	33
25	39	63	b 58	53	88	139	263	820	211	94	45	34
26	39	58	b 58	56	84	136	272	757	207	88	42	33
27	39	43	b 56	55	75	129	282	632	191	94	42	33
28	39	68	*b 55	b 46	81	120	312	624	162	86	49	37
29	39	73	b 49	55	-	123	372	558	145	77	58	40
30	39	68	b 52	53	-----	129	419	470	132	77	66	37
31	37	-----	b 59	64	-----	151	-----	489	-----	70	64	-----
Total	1,170	1,632	2,021	1,744	2,348	3,201	1,473	17,248	11,691	3,200	1,660	1,191
Mean	37.7	56.4	65.2	56.3	83.9	103	358	556	390	103	53.5	39.7
Max.	45	73	88	73	180	187	587	820	602	145	79	58
Min.	27	37	49	46	56	75	180	338	132	70	33	27
Ac-ft	2,320	3,240	4,010	3,460	4,660	6,350	21,290	34,210	23,190	6,350	3,290	2,360

Water year 1960-61: Max 820 Min 27 Mean 158 Acre-ft 114,700

Peak discharge (base 1,300 cfs)--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

CARSON RIVER BASIN

10-3090. East Fork Carson River near Gardnerville, Nev.

Location--Lat 38°50'50", long 119°42'10", in SW 1/4 sec. 2, T.11 N., R.20 E., on left bank 2 miles east of Mud Lake Reservoir, 4 1/2 miles downstream from Bryant Creek, and 7 miles southeast of Gardnerville.

Drainage area--344 sq mi.

Records available--January 1890 to December 1893, October 1900 to December 1906 (gage heights only August to December 1904 and July to December 1905), January 1908 to December 1910, June to October 1917, December 1924 to September 1928, June to September 1929, October 1935 to December 1937, May 1939 to September 1961. Monthly discharge only for some periods published in WSP 1314.

Gage--Water-stage recorder. Datum of gage is 4,985.11 ft above mean sea level (levels by Bureau of Reclamation). Prior to May 19, 1939, staff gages at several sites within 2 miles of present site at various datums.

Average discharge--35 years (1890-93, 1900-1903, 1908-10, 1925-28, 1935-37, 1939-61), 389 cfs (281,600 acre-ft per year).

Extremes--Maximum discharge during year, 937 cfs May 26 (gage height, 2.81 ft); minimum, 27 cfs Oct. 2, 3. 1890-93, 1900-1906, 1908-10, 1917, 1924-28, 1929, 1935-37, 1939-61: Maximum discharge 17,600 cfs Dec. 23, 1955 (gage height, 11.88 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurements at gage heights 9.66 and 11.88 ft; minimum observed, 8 cfs Dec. 4-10, 19-23, 1904.

Remarks--Records excellent except those for periods of ice effect, which are fair. Station is above all diversions in Carson Valley. Diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, about 5,000 acre-ft).

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

0.6	23	1.5	222
.7	35	2.0	430
.9	63	2.7	860
1.1	102		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3 0	4 2	8 7	b 5 2	6 8	8 7	1 8 1	4 6 5	4 5 5	1 3 8	7 6	5 7
2	2 9	4 2	1 2 7	b 4 8	6 3	8 9	2 2 9	4 3 5	4 7 0	1 3 0	7 6	5 2
3	2 8	5 0	8 3	b 5 6	7 4	9 2	3 7 5	4 6 0	4 6 0	1 3 3	7 7	5 2
4	2 9	5 8	7 0	b 6 3	6 2	8 7	5 4 6	4 8 0	4 9 8	1 6 1	7 7	5 4
5	2 9	4 8	b 6 7	b 6 3	6 0	8 3	5 0 4	4 0 7	5 5 2	1 4 4	7 7	5 6
6	3 0	5 7	5 7	b 6 7	6 3	8 1	4 1 6	3 7 5	6 1 2	1 3 5	7 7	6 0
7	3 8	5 8	b 5 6	b 7 2	6 5	7 6	4 2 1	3 4 9	6 0 0	1 3 3	7 2	5 8
8	3 8	5 4	b 6 2	b 6 2	6 3	8 7	3 6 2	3 6 6	6 2 4	1 1 7	8 3	5 6
9	3 9	4 8	b 6 3	b 6 2	6 7	9 4	3 8 0	4 6 5	5 8 8	1 1 2	7 4	5 4
10	4 4	5 2	b 6 7	b 5 7	1 0 7	8 5	3 4 0	6 1 8	5 4 6	1 3 0	6 0	4 5
11	4 7	5 7	b 7 2	5 2	1 9 8	8 7	3 3 6	4 9 2	5 5 8	1 3 3	6 2	4 0
12	4 5	7 7	b 7 2	5 7	1 4 1	8 5	4 2 1	4 1 2	4 9 2	1 3 3	6 0	3 8
13	4 8	6 7	b 7 2	5 2	1 1 4	9 7	3 3 6	3 7 1	4 7 5	1 2 7	6 8	* 3 5
14	4 8	5 4	b 7 9	5 7	1 0 4	9 4	3 4 0	4 2 1	4 7 0	1 1 7	5 0	3 3
15	4 7	5 0	b 7 6	5 6	1 1 7	1 0 2	3 4 0	5 4 6	4 7 0	1 0 2	4 2	3 1
16	4 5	* 5 4	b 6 7	5 4	1 0 0	9 2	4 5 0	5 9 4	4 5 0	1 0 4	4 0	3 4
17	4 5	6 0	7 0	5 7	8 7	1 0 4	5 8 8	6 4 8	4 4 0	1 0 0	4 0	4 8
18	4 5	7 0	7 0	5 4	9 4	8 9	6 0 6	7 2 5	4 1 2	9 4	4 0	5 6
19	4 5	7 6	6 5	5 0	7 7	9 8	* 4 3 5	7 1 2	3 8 4	9 8	4 0	4 7
20	4 5	6 2	* 6 0	5 1	8 9	1 1 2	3 5 8	6 6 0	3 5 8	9 2	4 5	4 3
21	4 5	6 7	6 3	b 5 4	* 9 4	* 1 1 7	3 2 3	7 7 0	3 2 7	8 9	4 7	4 0
22	4 4	6 2	6 0	5 6	1 0 4	1 3 0	3 0 2	8 0 4	2 9 0	9 2	4 0	4 2
23	4 4	6 2	5 8	5 8	8 5	1 8 7	2 9 4	* 7 6 4	2 8 6	1 0 2	4 4	4 2
24	4 3	6 3	6 2	* 6 0	9 4	1 7 4	2 6 6	7 5 8	2 5 4	9 8	* 4 3	4 2
25	* 4 3	6 7	5 8	5 6	9 6	1 5 2	2 8 2	8 0 4	2 2 9	1 0 0	4 7	4 2
26	4 2	6 7	6 5	6 3	9 2	1 4 9	2 8 2	7 7 7	2 2 6	9 2	4 7	4 2
27	4 2	5 0	6 0	6 0	7 7	1 4 7	2 9 0	6 4 8	2 0 8	1 0 2	4 5	3 9
28	4 2	5 6	b 5 7	5 4	8 5	1 3 5	3 1 1	6 4 2	1 7 7	9 4	4 4	4 3
29	4 3	6 7	b 4 2	5 6	-	1 3 0	3 6 6	5 8 8	* 1 5 8	8 7	5 0	4 8
30	4 3	6 8	b 4 5	5 8	-----	1 4 1	4 1 2	4 8 6	1 4 4	8 3	5 7	4 3
31	4 2	-----	b 5 6	6 3	-----	1 6 1	-----	5 0 4	-----	7 9	7 0	-----
Total	1,267	1,765	2,068	1,780	2,540	3,434	1,109.2	1,754.6	1,221.3	3,451	1,770	1,372
Mean	40.9	58.8	66.7	57.4	90.7	111	370	566	407	111	57.1	45.7
Max.	48	77	127	72	198	187	606	804	624	161	83	60
Min.	28	42	42	48	60	76	181	349	144	79	40	31
Ac-ft	2,510	3,500	4,100	3,530	5,040	6,810	22,000	34,800	24,220	6,840	3,510	2,720
Calendar year	1960:			Max 1,000		Min 22		Mean 178		Acre-ft 128,900		
Water year	1960-61:			Max 804		Min 28		Mean 165		Acre-ft 119,600		

Peak discharge (base, 1300 cfs)--No peak above base.

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

10-3100. West Fork Carson River at Woodfords, Calif.

Location.--Lat 38°46'10", long 119°49'55', in NW¹SE¹ sec. 34, T.11 N., R.19 E., on left bank 0.3 mile downstream from bridge on State Highways 88 and 89, 0.6 mile southwest of Woodfords, and 3 3/4 miles downstream from Willow Creek.

Drainage area.--66 sq mi, approximately.

Records available.--October 1900 to May 1907, 1910-11 (fragmentary), October 1938 to September 1961. January 1890 to March 1892, June 1907 to September 1920 (except portions of 1910-11) at site 0.7 mile downstream; records not equivalent owing to diversions for irrigation. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,760 ft (from river-profile map). Prior to Oct. 1, 1938, staff gage at about the same site at different datum. Oct. 1, 1938 to Nov. 11, 1958, water-stage recorder at site 150 ft upstream at datum 2.04 ft higher.

Average discharge.--30 years (1900-1907, 1938-61), 115 cfs (83,260 acre-ft per year).

Extremes.--Maximum discharge during year, 237 cfs April 17 (gage-height 3.39 ft); minimum, 6.8 cfs Oct. 1. 1900-1907, 1910-11, 1938-61: Maximum discharge, 4,810 cfs Dec. 23, 1955 (gage height, 8.86 ft), from rating curve extended above 1,000 cfs on basis of slope-area measurements at gage heights 8.35 and 8.86 ft; minimum (1900-1907, 1938-61), 6.3 cfs Sept. 19-21, 26, 27, 1960. Flood of Dec. 11, 1937, reached a stage of 11.0 ft (present datum), from floodmarks (discharge 3,500 by slope-area measurement.)

Remarks.--Records good. One small diversions above station for irrigation. Flow slightly regulated by several small reservoirs (total capacity, about 1,500 acre-ft).

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Feb. 3, Sept 26-30)

1.4	5.0	2.2	40
1.6	9.8	2.5	67
1.8	17	3.0	138
2.0	27	3.5	270

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.0	12	18	b 13	16	23	65	145	94	25	38	25
2	7.2	12	b 15	b 12	19	26	91	134	96	23	40	25
3	7.5	13	16	b 12	19	25	144	138	90	37	42	15
4	7.2	14	b 16	13	17	23	179	134	98	65	40	11
5	7.5	16	b 14	b 12	17	21	158	115	104	58	39	9.8
6		16	b 13	14	17	16	147	110	112	53	26	9.0
7	9.8	16	b 13	14	17	b 23	134	114	107	47	14	8.8
8	12	15	b 14	13	17	23	120	115	103	41	17	9.0
9	11	14	14	14	25	23	131	129	97	34	12	9.0
10	10	14	15	14	46	21	114	174	94	21	12	9.0
11	12											
12	13	15	15	13	44	21	120	134	96	18	12	9.0
13	13	16	14	14	31	22	136	114	86	18	15	9.0
14	* 13	12	14	14	36	24	106	103	85	32	17	* 9.0
15	12	13	14	14	29	29	112	118	84	26	14	11
16	13	15	14	14	28	29	118	136	84	24	13	20
17	13	* 16	14	14	b 23	26	153	147	80	23	18	23
18	13	16	15	14	b 23	b 24	182	158	79	43	28	24
19	13	19	15	13	b 22	b 24	170	172	76	47	29	17
20	12	17	* 14	b 13	b 20	24	* 127	167	69	46	30	16
21	12	17	13	b 13	20	28	109	170	65	46	24	15
22	12	17	14	b 13	* 22	* 32	97	179	* 60	44	13	13
23	11	16	13	13	23	43	80	177	55	42	11	13
24	11	15	13	14	20	55	88	* 160	71	38	10	12
25	11	19	13	* 14	23	48	90	160	69	* 17	* 10	12
26	11	18	13	14	23	39	88	165	64	17	9.8	12
27	11	13	14	15	21	37	101	153	42	18	9.3	12
28	11	b 14	13	15	22	36	117	124	35	13	9.3	11
29	11	b 15	13	14	21	33	127	122	31	12	11	16
30	12	17	b 13	15	*	34	136	110	28	11	12	30
31	12	15	13	15	-----	39	136	97	26	10	18	28
	12	-----	13	16	-----	52	-----	101	-----	12	26	-----
Total	3432	457	435	425	661	927	3676	4275	2280	961	6194	4456
Mean	11.1	15.2	14.0	13.7	23.6	29.9	123	138	76.0	31.0	20.0	14.9
Max.	13	19	18	16	46	59	182	179	112	65	42	50
Min.	7.0	12	13	12	16	16	65	97	26	10	9.3	8.8
Ac-ft	681	906	863	843	1,310	1,840	7,290	8,480	4,520	1,910	1,230	884
Calendar year	1960:			Max 290		Min 6.3		Mean 51.7		Acre-ft 37,560		
Water year	1960-61:			Max 182		Min 7.0		Mean 42.5		Acre-ft 30,760		

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3366. Upper Truckee River near Meyers, Calif.

Location.--Lat 38°50'35", long 120°01'25", in SE $\frac{1}{4}$ sec.31, T.12 N., R.18 E., 0.1 mile east of State Highway 89 and 1.1 mile southwest of Meyers.

Drainage area.--

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 6,325 ft (from topographic map).

Extremes.--Maximum discharge during year, 394 cfs (gage height, 6.79 ft); minimum, 2.0 cfs Jan. 13.

Remarks.--No regulation. Some small diversions for domestic use above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	3.7	7.0		5.2	9.7	28	88	71	17	5.0	3.8
2	3.4	3.9	7.4	4.5	6.4	11	44	77	89	16	4.8	3.2
3	3.2	4.0	5.9		6.1	11	77	88	105	18	4.8	3.0
4	3.0	4.4	5.4	4.5	5.6	11	94	82	117	27	4.4	3.0
5	2.9	4.5	5.3	4.0	5.5	10	79	65	118	18	4.2	3.0
6	3.7	4.7	5.0	4.2	5.4	10	70	60	121	16	4.2	2.8
7	3.8	4.6	5.1	4.6	5.3	10	70	61	114	*16	4.5	2.7
8	3.1	4.4	5.2	4.5	5.2	10	61	75	105	15	4.8	*2.7
9	3.2	4.2	5.2	4.4	7.9	*10	67	103	92	15	4.3	2.7
10	3.7	4.3	5.3	4.5	2.2	10	*62	129	91	14	*4.0	2.7
11	3.7	4.7	5.1	4.5	2.1	9.7	71	91	84	13	4.3	2.7
12	3.7	5.6	5.4	*4.7	1.6	9.5	82	70	75	13	4.8	2.5
13	3.5	4.5	5.4	4.9	1.4	9.9	60	65	74	14	6.0	2.5
14	3.3	4.2	5.3	5.1	1.2	11	58	87	72	12	4.9	2.5
15	3.4	4.3	5.3	4.9	1.1	12	70	109	66	11	4.2	2.5
16	3.3	4.4	*5.4	4.8	*10	12	105	122	61	11	4.0	4.6
17	3.6	4.4	6.1		9.4	11	129	138	57	10	3.7	8.1
18	3.6	*5.8	5.9		9.1	10	112	158	53	9.6	3.8	5.2
19	3.2	4.7	5.7		9.1	11	76	160	49	9.2	4.1	4.2
20	*3.3	4.4	5.6	4.8	9.1	13	62	207	46	8.4	4.4	3.7
21	3.4	4.7	5.6		9.1	14	55	213	41	*7.9	4.1	3.5
22	3.1	4.4	5.7		10	18	48	206	37	7.6	3.7	3.5
23	3.2	4.6	5.6	4.8	10	27		199	35	7.4	3.4	3.5
24	3.3	4.8	5.3	4.7	9.9	23	43	*227	32	7.3	3.4	3.2
25	3.3	5.5	6.0	4.7	11	18		235	28	6.7	*3.4	3.3
26	3.5	5.1	5.6	5.0	10	17	*43	160	26	6.4	3.3	3.3
27	3.6	4.8	5.1	5.0	9.6	17	50	121	24	6.1	*3.2	
28	3.6	4.7	5.0	4.6	9.7	16	63	117	21	5.7	4.1	4.6
29	3.4	4.7	5.0	4.9	-	15	78	94	19	5.5	4.1	4.5
30	3.5	4.7	5.1	5.0	-	17	80	84	18	5.4	4.4	3.7
31	3.8	-	4.8	5.3	-	21	-	77	-	5.0	4.5	-
Total	105.5	137.7	170.8	145.9	274.6	414.8	2023	3768	1941	354.2	131.7	104.4
Mean	3.40	4.59	5.51	4.71	9.81	13.4	67.4	122	64.7	11.4	4.25	3.48
Max.	3.8	5.8	7.4	5.3	22	27	129	235	121	27	6.0	8.1
Min.	2.9	3.7	4.8	4.0	5.2	9.5	28	60	18	5.0	3.3	2.5
Ac-ft	209	273	339	289	345	323	4,010	7,470	3,850	703	261	207
Calendar year 1960:				Max	-	Min	-	Mean	-	Acrc-feet	-	
Water year 1960-61:				Max	235	Min	2.5	Mean	26.2	Acrc-feet	18,980	

* Discharge measurement made on this day.

479

Location--Lat 39°06'27", long 120°09'37", in NE¹ sec.36, T.15 N., R.16 E., on left bank just downstream from bridge on State Highway 89, 700 ft upstream from Lake Tahoe, and 4.6 miles south of Tahoe City.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Note.--Stage-discharge relation affected by ice Dec. 3-10, 12, 13, 20, 22-25, 27, Dec. 29 to Feb. 21, Mar. 6, 7, Apr. 22-24.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3367.8. Trout Creek near Tahoe Valley, Calif.

Location.--Lat 38°55'12", long 119°58'17", in SE $\frac{1}{4}$ sec.3, T.12 N., R.18 E., on left bank 15 ft downstream from Martin Ave. bridge, 500 ft upstream from Heavenly Valley Creek, and 1.8 miles east of Tahoe Valley.

Drainage area.--

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 6,250 ft (from topographic map).

Extremes.--Maximum discharge during year, 64 cfs June 14 (gage height, 6.70 ft); minimum, 2.6 cfs Sept. 11.

Remarks.--Minor diversion for local water supply.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.9	9.1	13		13	15	17	26	34	12	6.4	5.3
2	5.8	9.2			14	15	20	23	33	12	6.1	5.4
3	6.1	9.5			14	15	25	23	29	13	6.1	5.8
4	5.8	9.3			13	15	28	23	27	14	6.4	5.0
5	6.0	11			13	14	25	22	29	12	6.2	5.3
6	6.8	12		10	13	13	25	22	28	9.2	6.3	5.5
7	7.1	12			13	13	25	22	28	* 9.6	6.5	5.3
8	6.8	11			13	13	22	23	29	9.4	7.1	* 5.2
9	7.1	11	11		15	* 17	23	25	30	9.6	6.3	5.4
10	7.9	11			21	14	* 22	28	31	9.0	* 5.9	5.3
11	7.3	12			21	14	22	23	31	6.6	6.7	5.0
12	7.6	11		* 12	18	14	25	22	31	5.9	6.8	5.1
13	7.3	12			17	14	22	21	31	8.8	8.3	4.7
14	7.7	12			16	15	22	22	33	8.5	6.8	5.1
15	7.9	12			15	15	22	24	29	7.1	6.2	4.9
16	8.5	12	* 14		* 16	14	25	24	28	7.1	6.1	6.5
17	9.2	12	12		13	14	27	24	27	7.0	6.5	7.2
18	9.1	* 13	12		13	14	25	27	27	6.8	6.1	7.1
19	9.2	13		12	13	14	23	26	25	6.1	5.8	6.4
20	* 8.9	13			13	15	22	28	24	6.1	6.5	6.2
21	8.6	13			13	16	21	29	23	* 6.0	6.5	6.0
22	9.1	12			15	17	18	29	21	5.8	6.3	6.0
23	8.9	12			14	18	18	30	20	5.8	6.3	6.2
24	8.9	12			14	17	18	29	18	6.3	* 6.0	7.1
25	8.7	13	11		14	16	21	* 30	17	6.1	* 5.6	6.4
26	9.2	11		12	14	15	* 22	30	16	6.4	5.7	* 6.1
27	9.0	11		12	14	15	23	27	15	6.2	5.8	6.3
28	9.1	11		12	14	15	24	27	14	6.0	7.0	7.3
29	8.7	11		12		15	25	28	13	6.2	7.1	8.2
30	9.0	12		12		15	26	24	13	6.1	6.0	7.5
31	9.3			13		16		29		6.5	5.5	
Total	246.5	345.1	348	351	409	462	683	790	754	247.2	196.9	178.8
Mean	7.95	11.5	11.2	11.3	14.6	14.9	22.8	25.5	25.1	7.97	6.35	5.96
Max.	9.3	13	14	13	21	18	28	30	34	14	8.3	8.2
Min.	5.3	9.1	11	10	13	12	17	21	13	5.8	5.5	4.7
Ac-ft	489	684	690	696	811	916	1,350	1,570	1,500	470	391	359
Calendar year 1960:			Max	-	Min	-	Mean	-	Acre-feet	-		
Water year 1960-61:			Max	34	Min	4.7	Mean	13.7	Acre-feet	9,940		

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 13-17, 19-23, 26-29, Dec. 1-16, Dec. 19 to Jan. 25, Jan. 28, Feb. 12-14, 16-21, 23-25, 28, Mar. 5-8, 16-19, 28-29, Apr. 22-24.

PYRAMID AND WINNEMUCCA LAKES BASIN

481

10-3370. Lake Tahoe at Tahoe, Calif.

Location--Lat 39°10'04", long 120°08'23", in NE sec.7, T.15 N., R.17 E., at Tahoe, on pier 1,000 ft east of dam at lake outlet.

Drainage area--506 sq mi at lake outlet.

Records available--April 1900 to September 1961. End of month elevations only for October 1943 to September 1957 published in WSP 1734.

Gage--Water-stage recorder. Datum of gage is 6,220.00 ft above mean sea level, datum of Bureau of Reclamation (6,219.01 ft, datum of 1929). Prior to Oct. 1, 1957, staff gages at several sites near outlet of lake at same datum. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum.

Extremes--Maximum elevation during year, 6,224.75 ft Oct. 1; minimum, 6,223.28 ft Sept. 27, 29.
1900-61: Maximum elevation, 6,231.26 ft July 14, 15, 17, 18, 1907; minimum, 6,221.74 ft Dec. 26, 1934.

Remarks--Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began about 1874. Figures given herein represent usable contents. Usable capacity, 744,600 acre-ft between elevations 6,223 ft (natural rim of lake) and 6,229.1 ft (maximum permissible elevation by Federal Court decree). Water is used for domestic and recreational purposes in Lake Tahoe area and for irrigation and power in downstream areas. Lake elevations are referred to Bureau of Reclamation datum because that datum is used as the official reference point by all local, state, and federal agencies. One intermittent transmountain diversion from Echo Lake to South Fork American River for power and irrigation.

Capacity table, water year 1960-61 (elevation, in feet,
and contents, in acre-feet)

6223.2	24,300
6224	121,400
6225	243,000

Elevation, in feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.74	4.21	4.12	3.85	3.80	3.84	3.90	4.04	4.37	4.33	3.97	3.66
2	4.73	4.18	4.14	3.85	3.81	3.84	3.90	4.04	4.38	4.31	3.98	3.66
3	4.70	4.30	4.13	3.84	3.81	3.83	3.91	4.04	4.40	4.33	3.96	3.58
4	4.68	4.23	4.13	3.83	3.81	3.83	3.95	4.02	4.41	4.29	3.96	3.55
5	4.66	4.19	4.20	3.83	3.80	3.85	3.92	4.02	4.41	4.30	3.95	3.54
6	4.65	4.14	4.11	3.83	3.80	3.87	3.93	4.03	4.42	4.26	3.95	3.49
7	4.60	4.15	4.11	3.82	3.79	3.86	3.93	4.04	4.43	4.25	3.99	3.49
8	4.60	4.13	4.02	3.80	3.79	3.85	3.93	4.03	4.43	4.25	3.96	3.45
9	4.58	4.13	4.01	3.80	3.83	3.88	3.94	4.02	4.44	4.24	3.95	3.45
10	4.54	4.11	4.00	3.80	3.84	3.88	3.93	4.04	4.44	4.24	3.95	3.42
11	4.50	4.15	4.00	3.79	3.90	3.87	3.93	4.08	4.43	4.22	3.92	3.43
12	4.50	4.18	3.99	3.78	3.91	3.87	3.95	4.09	4.44	4.22	3.93	3.41
13	4.48	4.22	3.99	3.78	3.91	3.87	3.95	4.09	4.45	4.20	3.90	3.39
14	4.51	4.21	3.98	3.77	3.90	3.87	3.95	4.09	4.45	4.18	3.88	3.38
15	4.44	4.18	3.96	3.77	3.90	3.86	3.95	4.10	4.45	4.16	3.86	3.34
16	4.39	4.18	3.97	3.77	3.90	3.86	3.95	4.11	4.45	4.16	3.84	3.41
17	4.37	4.18	3.96	3.76	3.89	3.88	3.95	4.12	4.44	4.15	3.84	3.40
18	4.36	4.20	3.94	3.76	3.89	3.88	3.93	4.13	4.45	4.15	3.83	3.40
19	4.35	4.15	3.94	3.75	3.88	3.85	3.93	4.15	4.45	4.12	3.82	3.37
20	4.35	4.14	3.93	3.77	3.88	3.87	3.93	4.16	4.44	4.13	3.82	3.37
21	4.33	4.13	3.92	3.75	3.89	3.88	3.94	4.17	4.45	4.13	3.80	3.34
22	4.33	4.10	3.92	3.75	3.88	3.88	4.02	4.17	4.44	4.11	3.80	3.34
23	4.30	4.09	3.91	3.74	3.86	3.88	4.05	4.18	4.42	4.10	3.78	3.36
24	4.30	4.05	3.92	3.74	3.86	3.91	4.05	4.20	4.42	4.10	3.78	3.30
25	4.26	4.05	3.92	3.75	3.87	3.90	4.05	4.20	4.41	4.09	3.75	3.32
26	4.28	4.11	3.90	3.77	3.87	3.90	4.05	4.21	4.40	4.08	3.72	3.30
27	4.24	4.08	3.93	3.77	3.85	3.91	4.05	4.24	4.38	4.06	3.73	3.28
28	4.25	4.07	3.88	3.75	3.85	3.90	4.05	4.26	4.35	4.04	3.69	3.30
29	4.23	4.05	3.87	3.75	-----	3.89	4.03	4.25	4.35	4.03	3.71	3.28
30	4.23	4.03	3.87	3.75	-----	3.89	4.03	4.26	4.32	3.98	3.69	3.29
31	4.21	-----	3.86	3.79	-----	3.89	-----	4.26	-----	3.99	3.66	-----
(+)	146,900	125,100	104,400	95,890	103,200	108,100	125,100	162,700	160,300	120,200	80,120	35,190
(±)	-65,700	-21,800	-20,700	-8,510	+7,310	+4,900	+17,000	+37,600	-2,400	-40,100	-40,080	-44,930

Calendar year 1960..... ±-156,900

Water year 1960-61..... ±-177,410

† Contents, in acre-feet, at end of month.

± Change in contents, in acre-feet.

Note.-- Add 6,220 ft to obtain elevation above Bureau of Reclamation datum.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3375. Truckee River at Tahoe, Calif.

Location.--Lat 39°10'00", long 120°08'40", in NE 1/4 sec. 7, T.15 N., R.17 E., at Tahoe, on left bank 510 ft downstream from dam at outlet of Lake Tahoe.

Drainage area.--507 sq mi.

Records available.--July 1895 to February 1896, March 1900 to September 1961. Monthly discharge only for some periods, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and concrete control. Datum of gage is 6,216.75 ft above mean sea level, datum of 1929. Prior to Nov. 12, 1912, staff gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, staff gage and Oct. 1, 1937, to Aug. 21, 1957, water-stage recorder, at datum 2.26 ft higher and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

Average discharge.--61 years (1900-61), 246 cfs (178,100 acre-ft per year).

Extremes.--Maximum discharge during year, 393 cfs Oct. 1 (gage height, 4.37 ft); minimum 1.2 cfs May 31, June 1.

1895-96, 1900-61: Maximum discharge, 1,870 cfs Apr. 5, 6, 1958, (gage height, 7.30 ft, site and datum then in use); maximum gage height, 7.34 ft Apr. 5, 1958, site and datum then in use (backwater from snow in channel); no flow for parts of 1900, 1901, 1914, 1918-43, 1947-49, 1956.

Remarks.--Records excellent. Flow regulated by Lake Tahoe.

Rating table, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)

1.4	0.5	2.5	72
1.5	2.0	3.0	130
1.7	11	4.0	304
2.0	30	5.0	585

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	388	* 175	141	89	* 72	* 80	* 92	127	66	235	* 129	* 48
2	378	172	161	88	75	80	92	131	161	232	127	58
3	* 375	181	160	86	78	81	74	130	77	234	127	43
4	365	206	* 154	85	77	80	32	129	17	230	125	38
5	358	172	167	82	76	78	7.5	125	17	208	124	35
6	348	167	167	82	76	85	6.5	125	17	208	121	32
7	333	158	151	79	75	88	6.0	126	17	215	122	27
8	326	160	136	73	72	83	5.6	127	31	211	129	23
9	322	155	129	73	77	91	5.6	121	51	206	126	22
10	294	155	124	73	80	88	23	129	78	204	124	21
11	294	152	124	73	92	86	99	136	103	204	120	21
12	279	166	121	70	104	86	101	129	117	201	118	19
13	273	178	120	70	103	88	106	94	167	201	115	19
14	271	181	118	70	103	85	106	95	155	196	111	17
15	275	178	116	69	99	85	107	* 57	127	192	106	15
16	251	175	115	69	58	84	109	40	138	189	103	19
17	234	170	117	68	60	91	109	* 16	161	186	98	18
18	230	167	111	67	52	92	105	3.6	189	183	95	18
19	228	167	110	65	48	* 90	99	3.6	228	181	93	18
20	224	161	111	66	48	86	101	2.8	257	179	92	15
21	220	155	110	62	4.8	89	99	2.4	259	175	92	14
22	217	151	106	62	4.8	89	115	2.0	267	173	91	13
23	210	144	106	61	3.6	89	131	2.0	269	170	89	13
24	208	138	106	60	3.6	86	133	2.0	267	166	85	13
25	203	130	105	60	4.0	97	133	1.7	265	162	78	12
26	194	150	104	65	3.6	97	131	1.7	263	160	74	12
27	189	147	111	67	3.6	94	131	1.7	255	158	69	11
28	186	140	105	66	20	95	130	1.7	239	152	65	10
29	183	136	* 93	64	-	94	125	1.6	241	151	66	10
30	179	129	92	62	-	92	* 126	1.6	* 237	145	61	10
31	178	-	89	67	-	91	-	* 14	-	134	59	-
Total	8,213	4,816	3,780	2,193	1,385.8	2,724	2,640.2	1,866.8	4,674.8	5,841	3,134	644
Mean	265	161	122	70.7	49.5	87.9	88.0	60.2	156	188	101	21.5
Max.	388	206	167	89	104	99	133	136	269	235	129	58
Min.	178	129	89	60	3.6	78	5.6	1.4	1.7	134	59	10
Ac-ft.	16,290	9,550	7,500	4,350	2,750	5,400	5,240	3,700	9,270	11,590	6,220	1,280

Calendar year 1960: Max 528 Min 1.8 Mean 170 Acre-ft 123,300
 Water year 1960-61: Max 388 Min 1.4 Mean 115 Acre-ft 83,140

* Discharge measurement made on this day.

Note.--Discharge for August estimated from once-daily gage height readings at 8 a.m.

PYRAMID AND WINNEMUCCA LAKES BASIN

483

10-3380. Truckee River near Truckee, Calif.

Location.--Lat 39°17'30", long 120°12'30", in SW¼NE¼ sec.28, T.17 N., R.16 E., on left bank 1.4 miles upstream from Donner Creek and 2.5 miles southwest of Truckee.

Drainage area.--552 sq mi.

Records available.--December 1944 to September 1961. Station discontinued. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,860 ft (from topographic map).

Average discharge.--16 years (1945-61), 345 cfs (249,800 acre-ft per year).

Extremes.--Maximum discharge during year, 390 cfs Oct.1,3(gage height, 2.25 ft); minimum daily, 16 cfs Sept. 30.

1944-61: Maximum discharge, 7,760 cfs Dec. 23, 1955 (gage height, 7.92 ft), from rating curve extended above 2,400 cfs on basis of slope-area measurements at gage heights 7.62 and 7.92 ft; maximum gage height, 9.69 ft Apr. 3, 1958 (backwater from snow in channel); minimum discharge, 11 cfs Jan. 27, 1948.

Remarks.--Records excellent. Flow regulated by Lake Tahoe (operating capacity, 744,600 acre-ft).

Rating table, water year 1960-61 (gage height, in feet,
and discharge, in cubic feet per second)

1.0	11	1.7	153
1.1	21	2.0	272
1.2	36	2.3	420
1.4	73		

Discharge in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	385	* 184	167	b 101	* 101	* 104	* 174	277	161	259	* 144	* 59
2	380	184	192	b 101	106	119	204	263	350	259	138	61
3	* 375	184	181	b 99	112	119	259	277	286	263	138	59
4	365	220	* 170	b 96	104	117	224	268	178	259	131	48
5	355	188	178	b 96	99	114	153	250	181	241	128	44
6	345	181	b 181	94	99	117	134	246	184	246	125	43
7	335	170	b 170	94	96	119	128	237	170	237	125	39
8	320	170	b 153	87	94	117	114	250	178	237	138	38
9	315	164	144	87	147	122	119	277	200	228	134	34
10	296	160	141	87	216	119	112	335	208	228	131	34
11	291	164	134	87	184	119	196	291	241	228	128	32
12	277	181	134	87	167	117	220	268	241	224	122	32
13	272	188	131	84	150	119	208	216	296	220	122	30
14	263	192	131	84	144	125	204	237	301	216	117	27
15	277	184	128	87	141	128	208	228	254	208	112	24
16	250	184	125	87	122	122	246	216	259	208	106	30
17	232	184	141	87	50	131	277	224	272	208	101	36
18	224	188	131	84	44	131	254	228	291	204	96	30
19	228	184	128	78	39	134	216	254	315	200	96	30
20	228	174	128	75	39	138	196	254	340	196	94	26
21	228	167	128	75	43	144	181	232	340	196	94	24
22	220	167	122	75	46	153	188	228	340	196	89	22
23	216	153	122	75	43	167	200	220	335	192	89	22
24	212	150	119	75	43	153	200	212	325	184	84	22
25	208	144	119	75	46	156	200	228	320	181	82	19
26	196	164	119	80	41	153	208	188	315	174	80	19
27	181	164	125	82	39	147	224	156	301	167	73	17
28	188	153	125	82	39	147	246	147	282	160	75	20
29	192	153	112	80	-	144	259	134	277	150	71	17
30	188	144	* 109	80	-	150	* 268	125	* 268	150	71	16
31	188	-	104	112	-	156	-	* 131	-	144	67	-
Total	8,230	5,187	4,292	2,673	2,594	4,101	6,020	7,097	8,009	6,463	3,301	954
Mean	265	173	138	86.2	92.6	132	201	229	267	208	106	31.8
Max.	385	220	192	112	216	167	277	335	350	263	144	61
Min.	181	144	104	75	39	104	112	125	161	144	67	16
Ac-ft	16,320	10,290	8,510	5,300	5,150	8,130	11,940	14,080	15,890	12,820	6,550	1,890
Calendar year 1960:			Max 689		Min 12		Mean 232			Acre-ft 168,100		
Water year 1960-61:			Max 385		Min 16		Mean 161			Acre-ft 116,900		

*Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3385. Donner Creek at Donner Lake, near Truckee, Calif.

Location.--Lat 39°19'25", long 120°14'00", in SW¹/₄ sec.17, T.17 N., R.16 E., on left bank 10 ft downstream from bridge on Donner Memorial State Park road, 0.2 mile downstream from Donner Lake outlet, 0.7 mile upstream from Cold Creek, and 2½ miles west of Truckee.

Drainage area.--14.5 sq mi.

Records available.--November 1909 to August 1910, January 1929 to October 1935, January 1936 to March 1938, July to October 1938, January 1939 to February 1943, June 1943 to December 1953, May 1955 to December 1957, October 1958 to September 1961. Monthly discharge only prior to October 1958, published in WSP 1314 and 1734.

Gage.--Water-stage recorder. Altitude of gage is 5,930 ft (from topographic map). Nov. 1, 1909, to Aug. 31, 1910, staff gage at different datum. January 1929 to December 1957, water-stage recorder at same site at unknown datum.

Average discharge.--24 years (1929-35, 1936-37, 1939-42, 1943-52, 1955-57, 1958-61), 29.1 cfs (21,070 acre-ft per year).

Extremes.--Maximum discharge during year, 118 cfs Sept. 9 (gage height, 2.48 ft); no flow Oct. 14-20, Nov. 3-9, parts of Oct. 13, 21, Nov. 2.

1909-10, 1929-53, 1955-57, 1958-61: Maximum daily discharge, 700 cfs (estimated) Nov. 21, 1950; maximum gage height observed, 3.76 ft Apr. 14, 1959; no flow at times in 1960 and 1961.

Remarks.--Records good. Flow regulated by dam at outlet of Donner Lake (usable capacity, 9,500 acre-ft).

Rating table, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 15, Apr. 16 to May 9, July 25 to Aug. 4)

0.86	0	1.3	7.8
.9	0.1	1.5	16
1.0	1.2	1.8	37
1.1	2.6	2.1	70
1.2	4.8	2.4	113

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.1	* 4.3	4.3	* 1.4	* 0.2	0.7	* 1.5	* 4.0	* 2.5	* 1.5	* 6.4
2	0.6	* 1	4.2	3.9	1.4	2	* 0.8	1.6	7.3	* 2.4	1.1	8.9
3	* 5	0	4.2	3.7	1.5	2	.8	2.2	9.4	2.4	1.0	10.2
4	* 4	0	4.1	3.5	1.4	2	.9	2.6	9.3	2.2	1.6	10.5
5	5	0	4.3	3.5	1.4	2	.9	2.4	7.6	2.2	2.6	10.3
6	5	0	4.4	3.5	1.4	1	.8	2.2	5.5	2.1	2.4	10.5
7	4	0	4.4	3.2	1.4	1	.8	1.8	3.4	2.0	2.4	* 10.3
8	4	0	4.1	2.8	1.4	2	.8	1.6	2.6	2.0	2.4	10.0
9	4	0	6.2	2.6	1.5	4	.8	1.5	2.4	2.0	2.5	10.5
10	4	1	8.9	2.4	2.0	4	.9	3.5	2.3	2.1	2.5	10.2
11	5	2	8.6	2.3	2.4	5	1.0	6.2	2.3	2.2	2.4	10.0
12	5	4	8.3	2.2	2.7	5	.9	8.0	2.3	2.2	2.4	10.0
13	1	4	8.0	2.1	2.7	8	.9	7.9	2.3	2.2	2.4	9.1
14	0	4	7.6	2.0	1.5	1.6	.9	7.9	2.2	2.1	2.4	7.9
15	0	2.3	8.3	1.9	2.0	1.5	.9	7.8	2.2	2.2	2.4	6.9
16	0	5.1	8.7	1.8	1.8	1.5	.8	7.8	2.3	2.0	2.4	6.2
17	0	5.1	8.3	1.7	1.8	1.4	1.0	7.9	2.3	2.1	2.4	5.6
18	0	5.0	7.6	1.6	1.7	1.4	1.0	8.7	2.3	2.2	2.5	5.2
19	0	4.9	7.1	1.5	1.1	1.3	.9	9.4	2.3	2.1	2.5	4.7
20	0	4.9	6.6	1.5	.9	1.3	.8	9.9	2.2	2.1	1.5	4.2
21	4	4.8	6.6	1.4	.5	1.2	.8	10.0	2.2	2.2	2.8	3.8
22	4	4.7	7.6	1.4	.5	1.1	.8	9.7	2.0	2.4	2.4	3.4
23	4	4.8	7.6	1.4	.4	1.1	.9	8.9	2.2	2.3	2.0	3.1
24	4	5.0	6.8	1.3	.4	1.1	.9	7.0	2.4	2.3	2.0	2.8
25	4	4.8	6.0	1.3	.3	1.0	1.1	5.9	2.3	2.4	1.7	2.7
26	1	4.8	5.4	1.3	.3	1.0	1.1	5.8	2.1	2.2	1.7	2.5
27	1	4.6	6.0	1.3	.2	1.0	1.2	4.7	2.0	2.0	1.7	2.3
28	1	4.5	6.5	1.2	.2	.8	1.2	3.9	2.0	1.7	1.7	2.1
29	1	4.5	* 5.9	1.2	-	.8	1.3	3.2	2.3	1.4	1.6	1.9
30	1	4.3	5.4	1.2	-	.8	1.4	2.6	2.6	1.4	1.5	1.8
31	1	-	4.8	1.4	-	.7	-	2.4	-	1.4	1.4	-
Total	7.2	74.2.7	1.96.8	66.4	253.2	24.6	28.0	152.1.9	98.6	65.0	45.1.5	194.0
Mean	.23	24.8	63.5	21.4	9.04	0.79	0.93	49.1	32.9	21.0	14.6	64.7
Max.	.6	51	89	43	27	1.6	1.4	100	94	25	26	105
Min.	0	0	41	12	.2	.1	.7	1.5	20	14	1.4	18
Ac-ft	14	1,470	3,900	1,320	502	49	56	3,020	1,960	1,290	896	3,850

Calendar year 1960: Max 198 Min 0 Mean 23.0 Acre-ft 16,720
Water year 1960-61: Max 105 Min 0 Mean 25.3 Acre-ft 18,330

*Discharge measurement made on this day.

PYRAMID AND WINNEMUCCA LAKES BASIN

485

10-3394. Martis Creek near Truckee, Calif.

Location.--Lat 39°20'20", long 120°07'00", in SE¼NW¼ sec.8, T.17 N., R.17 E., on left bank three quarters of a mile upstream from mouth and 3½ miles northeast of Truckee.

Drainage area.--40.4 sq mi.

Records available.--October 1958 to September 1961

Gage.--Water-stage recorder. Altitude of gage is 5,700 ft (from topographic map).

Extremes.--Maximum discharge during year, 98 cfs Jan. 31 (gage height, 2.34 ft); minimum, 1.1 cfs July 19, 20.
1958-61: Maximum discharge, 436 cfs Feb. 8, 1960 (gage height, 3.73 ft); minimum, that of July 19, 20, 1961.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

0.8	0.7	1.3	11
.9	1.7	1.6	26
1.0	3.1	1.7	32
1.1	5.1		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	4.7	3.0	b 4.0	1.2	9.3	1.4	1.8	1.3	1.8	1.4	2.2
2	3.0	* 4.9	1.9	b 3.1	1.2	1.1	1.6	1.7	1.8	2.1	1.4	2.0
3	3.0	5.6	1.2	b 3.0	1.1	1.1	2.0	1.5	8.2	3.6	1.6	2.2
4	3.3	5.9	b 7.3	*b 3.1	8.6	9.3	2.0	1.4	5.9	3.1	1.5	2.2
5	3.0	5.6	b 7.0	b 3.0	8.6	9.3	1.7	1.3	5.1	2.5	1.4	2.1
6	3.8	7.3	*b 6.7	b 4.0	8.6	9.6	1.5	1.3	4.4	2.2	1.4	2.1
7	3.8	6.1	b 6.1	b 4.9	8.6	b 1.0	1.4	1.2	* 4.0	2.1	3.7	1.8
8	3.6	5.6	b 6.4	b 5.6	* 8.2	* 1.0	1.2	1.0	3.6	2.0	2.4	1.5
9	4.4	5.4	b 7.0	b 6.7	1.6	1.1	* 1.3	9.6	3.6	1.8	1.6	1.6
10	* 5.1	5.4	b 5.9	b 7.3	1.9	1.3	1.3	* 1.5	3.6	* 1.7	1.6	1.7
11	5.1	7.0	b 5.9	b 7.3	2.0	1.2	1.2	1.4	3.8	1.7	2.1	1.7
12	4.4	8.9	b 4.9	b 7.3	b 1.5	9.6	1.8	1.7	3.8	1.6	2.0	1.7
13	4.4	6.7	b 4.9	b 7.6	b 1.2	9.9	1.5	1.3	3.5	1.6	2.1	1.7
14	4.4	7.3	b 5.4	b 7.3	1.1	1.0	1.4	1.0	3.0	1.6	* 1.8	1.8
15	4.4	b 7.3	b 5.1	b 6.7	1.1	1.1	1.2	9.6	* 2.5	1.6	1.7	2.0
16	4.4	b 7.6	b 5.6	b 7.0	b 9.3	8.6	1.1	8.9	2.5	1.5	1.6	5.8
17	4.4	7.9	b 1.0	b 6.1	b 8.9	1.0	1.1	8.6	2.4	1.5	1.6	5.0
18	4.7	1.2	b 1.0	b 6.1	b 8.6	1.1	1.1	8.2	2.2	1.5	1.8	3.3
19	4.4	b 7.3	b 8.2	b 6.1	b 7.9	1.0	9.6	8.2	2.2	1.4	2.0	3.0
20	4.7	b 6.4	b 7.3	b 5.6	b 8.9	1.1	8.9	7.6	2.0	1.4	2.4	* 2.6
21	4.7	b 6.4	b 7.3	b 6.4	1.2	9.9	8.6	6.7	1.6	1.4	2.2	2.5
22	4.9	b 5.6	b 7.3	b 6.7	1.1	1.1	1.2	6.1	1.6	1.5	1.8	2.5
23	4.9	b 5.9	b 7.3	b 7.3	9.9	1.4	1.3	5.6	1.6	1.5	1.8	2.6
24	4.9	b 6.4	b 6.4	b 7.3	1.1	1.2	2.0	5.4	1.6	1.5	1.8	2.6
25	4.9	6.7	b 6.7	b 7.3	1.3	1.4	2.2	5.1	1.7	1.8	1.7	2.6
26	4.7	b 5.1	b 6.7	7.9	9.6	1.4	2.8	4.7	2.1	2.0	1.8	2.6
27	4.7	b 5.9	b 6.1	8.6	8.9	1.4	2.4	4.9	2.0	1.8	2.1	2.6
28	4.9	b 5.6	b 5.4	7.6	8.6	1.4	2.0	4.9	1.7	1.6	2.4	3.3
29	4.9	b 6.1	b 5.4	7.3	-	1.1	1.9	5.4	1.6	1.4	2.0	2.8
30	4.7	b 7.3	b 5.1	8.2	-	1.1	1.9	4.7	1.7	1.3	2.3	2.6
31	4.7	-	b 4.2	3.2	-	1.3	-	8.5	-	1.4	2.4	-
Total	13 4.2	19 5.9	24 2.6	21 8.4	30 9.2	34 4.5	46 2.1	30 3.7	11 4.5	5 5.5	6 0.2	7 4.0
Mean	4.33	6.53	7.83	7.05	11.0	11.1	15.4	9.80	3.82	1.79	1.94	2.49
Max.	5.1	12	30	32	20	14	28	18	18	3.6	3.7	5.8
Min.	3.0	4.7	4.2	3.0	8.2	8.6	8.6	4.7	1.6	1.3	1.4	1.5
Ac-ft.	226	389	481	433	613	683	917	602	227	110	119	148
Calendar year	1960:	Max	246	Min	1.6	Mean	13.1	Acre-ft	9,500			
Water year	1960-61:	Max	32	Min	1.3	Mean	6.89	Acre-ft	4,990			

Peak discharge (base 170 cfs).--No peak above base.

*Discharge measurement made on this day.
bStage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3397. Prosser Creek at Hobart Mills, Calif.

Location.--Lat 39°24'00", long 120°12'00", in NE 1/4 sec. 21, T.18 N., R.16 E., on left bank 0.8 mile west of Hobart Mills, 3 miles upstream from Alder Creek, and 5 miles north of Truckee.

Drainage area.--27.4 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,840 ft (from topographic map).

Extremes.--Maximum discharge during year, 244 cfs Feb. 10 (gage height, 2.67 ft); minimum, 2.8 cfs Aug. 15-18.
1958-1961: Maximum discharge, 521 cfs Feb. 8, 1960 (gage height, 3.77 ft); minimum, 2.7 cfs Dec. 11, 1959.

Remarks.--Records good except those for periods of backwater from ice, which are poor.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

0.8	2.8	1.3	21
.9	4.0	1.5	35
1.0	7.0	1.9	86
1.1	11	2.4	181

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	5.2	1.4	b 7	2.3	2.4	6.9	10.9	12.2	2.4	3.5	3.7
2	3.5	5.2	2.0	b 7	2.0	2.8	9.8	9.1	15.6	2.2	3.5	3.5
3	3.7	5.6	b 1.5	*b 7	2.3	b 2.6	15.1	9.9	13.3	2.4	3.4	3.4
4	3.7	6.3	b 1.1	b 7	b 1.8	2.5	15.6	10.0	13.0	2.2	3.4	3.4
5	3.7	7.0	b 1.0	b 7	b 1.5	2.4	12.8	8.9	13.0	1.9	3.1	3.2
6	7.0	8.5	b 1.0	b 7	b 1.3	2.3	11.3	8.6	13.0	1.8	3.2	3.2
7	7.0	* 7.4	*b 1.0	b 8	b 1.3	b 2.2	10.6	7.7	* 12.0	1.6	3.4	3.2
8	4.7	6.3	b 9	b 9	*b 1.3	*b 2.4	9.4	8.5	12.2	1.5	3.4	3.5
9	4.2	5.9	b 9	b 9.5	5.3	2.4	10.0	10.9	11.1	1.4	3.4	3.5
10	4.5	5.6	b 9	b 9.5	16.5	2.2	* 9.1	* 15.0	10.4	1.3	3.1	3.5
11	5.2	7.4	b 1.1	b 9	b 7.3	2.2	9.4	11.3	9.6	1.3	3.1	3.5
12	4.5	1.3	b 1.1	b 9	b 5.4	2.2	10.4	9.2	9.2	* 1.2	3.2	3.4
13	4.5	9.7	b 1.1	b 9	b 4.3	2.3	8.2	8.6	9.9	1.1	3.4	3.4
14	* 4.5	8.9	b 1.1	b 9	b 3.3	2.9	8.0	10.2	10.0	1.0	* 3.1	3.4
15	4.5	b 8.9	b 9.7	b 8.5	b 3.0	3.3	8.3	11.8	9.9	9.3	3.4	3.4
16	4.5	b 8.9	1.0	b 9.5	b 3.0	2.7	11.6	12.8	9.7	8.9	3.4	4.5
17	4.7	9.3	1.3	b 8.5	b 2.8	b 2.6	14.1	14.1	9.2	8.1	3.4	7.8
18	4.5	1.4	1.3	b 7.8	b 2.4	b 2.6	11.6	15.0	8.5	7.4	3.4	5.9
19	4.5	b 1.4	1.2	b 7.5	b 2.4	b 2.6	8.9	16.2	7.7	6.6	3.4	5.0
20	4.2	b 1.1	b 1.1	b 7	b 2.2	3.3	7.6	17.0	7.4	6.3	3.4	4.5
21	4.5	9.7	b 9.5	b 7	b 2.3	3.5	6.9	16.6	7.0	5.6	3.2	* 4.4
22	4.2	b 9.3	b 9.5	b 8	b 2.6	4.3	6.6	15.6	6.5	5.2	3.1	4.0
23	4.2	b 8.9	b 9.5	b 9	b 2.4	5.8	6.1	4.5	6.1	5.4	3.4	4.0
24	4.2	9.3	b 9.5	b 9	b 2.5	4.7	6.3	1.3	5.4	5.4	3.4	4.0
25	4.5	9.7	b 9	b 9	b 2.4	4.0	5.8	15.0	4.9	4.7	3.1	3.8
26	4.5	1.1	b 9	b 9.5	b 2.2	3.5	6.7	13.0	4.3	4.7	3.1	4.0
27	4.5	b 1.1	b 9	b 9.5	b 2.3	3.3	7.9	10.4	3.9	4.2	3.1	4.0
28	5.0	b 8.9	b 8	b 9	b 2.2	3.1	9.1	10.6	3.2	4.4	3.7	4.4
29	5.0	b 1.0	b 7	b 9.5	-	3.2	10.2	9.4	2.7	3.8	5.9	4.4
30	5.0	8.9	b 8	b 9.5	-----	4.0	10.4	8.5	2.5	3.5	4.5	4.2
31	5.6	-----	b 8	b 1.9	-----	5.3	-----	9.6	-----	3.5	3.7	-----
Total	142.2	264.8	325.7	270.8	93.6	95.6	284.0	362.6	263.4	328.8	10.4	118.9
Mean	4.59	8.83	10.5	8.74	32.4	30.8	94.7	117	87.8	10.6	3.35	3.96
Max.	7.0	14	20	19	165	58	156	170	156	24	5.9	7.8
Min.	3.4	5.2	7	7	13	22	58	77	25	3.5	3.0	3.2
Ac-ft	282	525	646	537	1,800	1,900	5,630	7,190	5,220	652	206	236
Calendar year	1960:			Max	318	Min	3.0	Mean	48.0	Acre-ft		
Water year	1960-61:			Max	170	Min	3.2	Mean	34.3	Acre-ft		
Peak discharge (base, 200 cfs).--Feb. 10 (3 p.m.) 244 cfs (2.67 ft); Apr. 3 (9 p.m.) 225 cfs (2.60 ft); May 20 (10 p.m.) 218 cfs (2.57 ft).												

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

487

10-3399. Alder Creek near Truckee, Calif.

Location.--Lat 39°22'10", long 120°10'50", in SE¹/₄NE¹/₄ sec.34, T.18 N., R.16 E., on right bank 2 miles upstream from mouth and 2¹/₂ miles north of Truckee.

Drainage area.--7.36 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,800 ft (from topographic map).

Extremes.--Maximum discharge during year, 34 cfs Apr. 3 (gage height, 2.82 ft); no flow many days during year.

1958-61: Maximum discharge, about 59 cfs Feb. 8, 1960 (gage height, 2.74 ft), backwater from ice; no flow for some periods in each year.

Remarks.--Records good, except those for periods of ice effect, which are fair. No upstream diversions or regulation.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-4 and Jan. 31 to Feb. 14)

1.65	0.0	1.9	1.1	2.2	5.7
1.7	.1	2.0	2.1	2.4	12
1.8	.5	2.1	3.6	2.6	22

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	2.2	b 0	1.9	1.2	1.2	1.0	1.1	0.8	0.1	0.1
2	.1	.1	2.6	b 0	1.9	2.2	1.6	9.6	1.1	.6	.1	.1
3	.2	.2	1.3	b* 0	1.9	b 2.2	2.0	8.9	7.4	.9	.1	.1
4	.2	.5	b .8	0	1.3	2.0	2.1	8.5	5.7	1.0	.1	.1
5	.2	.4	b .6	b 0	1.0	b 1.7	1.7	7.7	5.5	.9	.1	.1
6	.9	.7	b* .5	0	1.1	b 1.6	1.5	7.9	4.6	.7	.1	.1
7	.7	* .6	b .4	0	1.0	b 1.9	1.3	7.7	*4.4	.6	.2	.1
8	.3	.4	b .4	0	* 1.0	b* 2.4	1.3	7.1	3.8	.6	.3	.1
9	.2	.2	.3	.1	2.0	b 1.8	* 1.3	6.5	3.3	.5	.2	.1
10	* .3	.2	.4	.2	7.9	1.5	1.1	* 8.9	2.8	* .4	.2	.2
11	.4	.5	.4	.2	6.3	1.6	1.0	1.0	3.2	.4	.2	.2
12	.2	1.6	.3	.2	b 3.3	1.4	1.1	9.9	3.2	.4	.2	.1
13	.2	.6	.3	.2	b 2.1	1.9	9.6	9.2	2.8	.4	.4	.1
14	.1	.2	.4	.2	1.3	3.4	9.2	8.5	2.7	.2	* .2	.1
15	.1	.4	.3	.1	b 1.0	3.6	8.5	8.2	2.4	.2	.1	.1
16	.1	.4	.4	.1	b .9	b 2.4	8.9	7.7	2.4	.2	.1	.4
17	.1	.6	1.0	.1	b .7	b 2.7	8.9	7.7	2.2	.2	.1	1.0
18	.1	1.6	1.0	b .1	b .7	b 2.6	8.5	7.7	1.9	.2	.1	.6
19	.1	.7	.7	b .1	b .6	2.6	7.1	7.9	1.6	.1	.1	.3
20	.1	.4	.6	b 0	b .5	4.0	6.3	7.9	1.2	.1	.2	* .2
21	.1	.4	.5	0	.6	5.7	6.0	7.4	1.1	.1	.1	.2
22	.1	.4	.4	0	b .9	7.9	5.7	7.1	1.1	.2	.1	.2
23	.1	.2	b .4	.1	b .9	1.1	b 5.5	6.5	1.0	.2	.1	.2
24	.1	.4	.4	.1	.9	9.2	b 5.2	6.3	1.0	.2	.1	.2
25	.1	.6	b .3	.2	b 1.0	7.1	6.5	5.7	1.0	.2	.1	.2
26	.1	.6	.4	.2	b .9	5.5	7.4	5.3	1.0	.2	.1	.2
27	.1	.7	.4	.2	b .9	4.9	9.2	4.9	.9	.1	.1	.1
28	.2	.4	b .2	.2	b .9	4.2	1.1	4.6	.7	.1	.2	.1
29	.1	.4	b .1	.2	.4	4.4	1.2	4.2	.7	.1	.3	.1
30	.1	.4	b 0	.2	-----	6.5	1.1	4.4	.6	.1	.2	.1
31	.1	-----	b 0	1.0	-----	9.6	-----	7.4	-----	.1	.1	-----
Total	5.8	15.0	18.0	4.0	45.4	120.7	318.5	231.3	92.2	11.0	4.7	5.8
Mean	0.19	0.50	0.58	0.13	1.62	3.89	10.6	7.46	3.07	0.35	0.15	0.19
Max.	.9	1.6	2.6	1.0	7.9	11	21	10	11	1.0	0.4	1.0
Min.	0	0.1	0	0	0.5	1.2	5.2	4.2	0.6	0.1	0.1	0.1
Ac-ft	12	30	36	8.0	90	239	632	459	183	22	9.3	12

Calendar year 1960: Max 38 Min 0 Mean 3.56 Acre-ft 2,590
 Water year 1960-61: Max 21 Min 0 Mean 2.39 Acre-ft 1,730

Peak discharge (base, 25 cfs).--Apr. 3 (7 p.m.) 34 cfs (2.82 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCA LAKES BASIN

10-3405. Prosser Creek near Boca, Calif.

Location.--Lat 39°22'10", long 120°07'10", in SW 1/4 sec. 32, T.18 N., R.17 E., on left bank a quarter of a mile upstream from mouth and 2 miles southwest of Boca.

Drainage area.--53.5 sq mi.

Records available.--October 1902 to June 1903 (gage heights only), October 1942 to December 1950, June 1951 to September 1961. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Pt. 2, have been found to be unreliable and should not be used. Monthly discharge only for October 1942 to Dec. 1950 published in WSP 1734.

Gage.--Water-stage recorder. Datum of gage is 5,572.66 ft above mean sea level (levels by Bureau of Reclamation). April 1889 to November 1890 and October 1902 to June 1903, staff gages at same site at different datums. October 1942 to December 1950, water-stage recorder at approximately same site at different datum. June 1951 to September 1956, water-stage recorder at present site at datum 2.00 ft higher.

Average discharge.--18 years (1942-50, 1951-61), 76.9 cfs (55,670 acre-ft per year).

Extremes.--Maximum discharge during year, 312 cfs Feb. 10 (gage height, 3.26 ft); maximum gage height, 3.93 ft Jan. 22 (backwater from ice); minimum, 0.4 cfs July 18, result of work on dam upstream.

1942-61: Maximum discharge, 4,560 cfs Dec. 23, 1955 (gage height, 10.13 ft, present datum), from rating curve extended above 910 cfs on basis of slope-area measurement of peak flow; maximum gage height 11.0 ft (present datum) Nov. 20, 1950 (discharge, 4,320 cfs by slope-area measurement); minimum, that of July 18, 1961.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

1.1	2.0	1.7	33
1.2	3.8	2.0	64
1.3	7.0	2.5	137
1.5	18	2.8	191

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4	7.0	b 20	b 9	b 35	b 29	76	120	139	24	3.1	4.1
2	5.7	7.0	b 21	b 9	b 34	b 34	100	102	174	23	3.4	3.8
3	6.0	8.5	b 18	b 9	b 35	b 33	154	109	146	24	3.4	3.8
4	6.0	9.5	b 16	b 9	b 27	b 31	176	109	142	23	3.1	3.6
5	6.0	10	b 13	b 9	b 23	b 28	137	97	137	20	2.9	3.6
6	8.0	12	b 12	b 9	b 22	b 25	120	97	139	17	3.1	3.6
7	10	*12	b 12	b 9.5	b 22	b 24	112	84	131	16	4.8	3.6
8	7.0	10	b*12	b 10	b 23	b 28	96	87	*127	14	4.4	3.6
9	6.0	9.5	b 11	b*11	*43	b*32	106	114	116	13	3.6	4.1
10	*6.7	9.5	b 12	b 11	167	32	100	*165	108	12	3.4	4.1
11	8.0	11	b 13	b 11	103	33	97	129	106	12	3.4	3.8
12	6.7	20	b 13	b 11	67	32	116	109	96	*11	3.6	3.6
13	6.0	16	b 13	b 11	b 50	35	92	94	100	10	4.4	3.6
14	6.0	15	b 13	b 11	b 41	40	*87	108	102	9.5	3.8	3.6
15	5.7	b 14	b 12	b 11	b 39	44	87	123	98	9.5	3.4	3.6
16	5.7	b 14	b 13	b 11	b 33	37	116	131	96	8.5	*33	6.0
17	6.0	14	b 16	b 11	b 30	36	142	144	94	5.8	3.3	10
18	5.7	20	b 16	b 10	b 30	32	132	151	83	3.9	3.3	8.0
19	6.0	b 15	b 15	b 9.5	b 29	b 35	96	163	76	5.7	3.6	*6.4
20	6.4	b 14	b 13	b 9	b 26	43	80	172	70	5.4	4.1	6.0
21	6.7	b 14	b 12	b 9.5	b 30	45	74	163	67	5.1	4.1	5.4
22	6.4	b 13	b 11	b 10	b 36	51	65	156	64	4.8	3.3	5.4
23	6.7	b 12	b 11	b 11	b 29	69	67	147	58	4.8	3.4	5.4
24	6.4	b 13	b 11	b 11	b 32	58	65	139	53	4.1	2.7	5.4
25	7.0	14	b 11	b 14	b 32	52	65	149	48	3.8	3.3	4.8
26	7.0	b 14	b 11	18	b 28	49	85	144	43	3.8	3.1	5.1
27	6.7	b 13	b 11	19	b 27	46	94	108	39	3.4	3.6	5.1
28	7.5	b 11	b 10	17	b 27	42	102	114	33	3.4	3.8	5.1
29	7.5	b 12	b 10	17	-	41	112	102	28	3.3	6.9	5.1
30	7.0	b 12	b 10	19	-----	45	115	94	26	3.3	6.7	5.1
31	7.5	-----	b 10	b 34	-----	58	-----	106	-----	3.3	5.1	-----
Total	2054	376	402	380.5	1120	1219	3070	3830	2739	3104	1174	144.4
Mean	6.63	12.5	13.0	12.3	40.0	39.3	102	124	91.3	10.0	3.79	4.81
Max.	10	20	21	34	167	69	176	172	174	24	6.9	10
Min.	5.4	7.0	10	9	22	24	65	84	26	3.3	2.7	3.6
Ac-ft	407	746	797	755	2,220	2,420	6,090	7,600	5,430	616	233	286
Calendar year	1960:			Max 600		Min 3.6		Mean 58.4		Acre-ft 42,400		
Water year	1960-61:			Max 176		Min 2.7		Mean 38.1		Acre-ft 27,600		

Peak discharge (base, 300 cfs).--Feb. 10 (3 a.m.) 312 cfs (3.26 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

4 89

10-3420. Little Truckee River near Hobart Mills, Calif.

Location--Lat 39°30'05", long 120°16'35", in NE¹/₄ sec. 14, T. 19 N., R. 15 E., on right bank half a mile upstream from Independence Creek and 7½ miles northwest of Hobart Mills.

Drainage area--36.6 sq mi.

Records available--December 1946 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 6,290 ft (from topographic map).

Average discharge--14 years (1947-61), 84.9 cfs (61,470 acre-ft per year).

Extremes--Maximum discharge during year, 284 cfs May 10 (gage height, 2.84 ft); minimum, 1.6 cfs Aug. 4.

1946-61: Maximum discharge, 7,010 cfs Nov. 20, 1950 (gage height, 7.53 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; minimum, 1.1 cfs Aug. 19, 20, 23, 24, 1949.

Remarks--Records good except those for periods of ice effect, which are poor. One transmountain diversion to Sierra Valley above station.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting control method used July 9-22)

0.7	1.3	1.5	46
.8	2.8	2.0	107
.9	5.0	2.5	197
1.0	8.2	3.0	320
1.2	19		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	2.6	9.8	b 3.5	b 9.8	1.4	4.2	9.9	16.8	3.8	1.8	2.6
2	3.4	2.6	1.1	b 3.5	b 1.2	1.8	5.7	8.5	21.5	3.8	1.8	2.6
3	3.4	2.8	b 8.2	b 3.5	b 1.1	b 1.5	8.3	9.9	19.1	4.2	1.8	2.6
4	3.4	2.8	b 5.3	b* 3.5	b 8.6	1.5	7.8	10.7	18.2	4.0	1.8	2.6
5	3.4	2.8	b 5	b 3.5	b 8.2	1.4	5.2	9.6	17.2	3.6	1.8	2.6
6	4.7	3.8	b* 5	b 3.5	9.0	1.3	4.5	8.9	17.2	3.6	1.8	2.6
7	4.7	*	b 5	b 4	b 8.6	b 1.3	5.4	7.4	* 15.7	3.6	2.2	2.6
8	4.0	3.2	b 5	b 4.5	* 8.2	b* 1.3	6.0	8.8	15.3	3.6	2.2	2.6
9	3.8	2.6	b 5	7.4	1.9	1.5	6.7	12.9	13.6	3.2	2.0	2.8
10	4.0	2.6	b 5	5.9	5.2	1.5	* 6.7	* 21.2	12.4	3.2	2.2	2.8
11	3.6	3.8	b 5.5	b 5.5	3.1	1.4	7.3	16.1	11.0	3.2	2.6	2.8
12	3.2	5.9	b 5	b 5.5	b 2.5	1.5	8.8	11.8	10.0	* 3.4	3.6	2.6
13	2.8	6.2	b 5	b 5.5	b 2.0	1.5	7.3	9.2	9.6	3.6	3.4	2.6
14	* 3.0	5.0	b 5	b 5.5	b 1.8	2.0	6.4	10.4	9.4	3.4	2.4	2.6
15	2.4	5.3	b 5	b 5.5	b 1.5	2.1	6.6	12.7	9.0	3.4	3.2	2.4
16	2.4	6.5	5.9	b 5.5	b 1.5	b 1.7	9.4	14.8	8.1	3.4	* 3.4	3.0
17	2.4	6.2	7.1	b 5.0	b 1.5	b 1.7	13.0	17.0	7.0	3.4	2.8	3.4
18	2.4	9.0	7.1	b 4	b 1.3	b 1.6	12.7	20.1	5.7	3.2	2.6	3.2
19	2.4	7.1	5.9	b 4	b 1.1	b 1.5	9.0	23.3	4.3	3.2	2.8	3.0
20	2.4	6.8	b 5.5	b 4	b 1.1	1.9	7.3	24.3	3.4	3.2	3.2	2.8
21	2.4	b 5.9	b 5.5	b 4	b 1.1	2.1	6.1	23.6	2.5	3.2	2.8	* 2.6
22	2.4	b 6.2	b 5	b 4.5	b 1.2	2.5	4.7	23.1	1.7	3.4	2.8	2.4
23	2.4	b 4.7	b 5	b 4.5	b 1.3	3.3	4.2	21.5	1.2	3.4	2.6	2.6
24	2.4	b 4.7	b 5	b 4.5	b 1.3	3.0	4.0	19.7	8.6	3.4	2.2	2.4
25	2.4	b 5.0	b 5	b 5.5	b 1.3	2.5	3.5	21.0	5.9	3.4	2.2	2.4
26	2.6	b 5.6	b 5	5.9	b 1.2	2.3	3.9	19.1	5.6	3.0	2.2	2.4
27	2.6	b 5.6	b 5.5	5.3	b 1.3	2.3	5.6	15.3	5.0	2.8	2.2	2.4
28	2.6	b 5.0	b 4.5	b 5.0	b 1.2	2.3	5.2	13.9	4.0	2.4	2.8	2.8
29	2.6	b 5.6	b 4	b 5.3	-	2.3	6.5	12.4	3.8	2.2	3.0	2.8
30	2.6	5.0	b 4	5.3	-----	2.5	8.0	10.8	3.8	2.2	2.8	2.8
31	2.6	-----	b 4	b 8.6	-----	3.3	-----	12.4	-----	2.0	2.6	-----
Total	9 2.6	14 4.7	17 3.8	15 1.2	41 9.4	59 8	200 0	460 3	253 5.7	101 4	77 6	80 4
Mean	2.99	4.82	5.61	4.88	15.0	19.3	66.7	148	845	3.27	2.50	2.68
Max.	4.7	9.0	11	8.6	52	33	130	243	215	4.2	3.6	3.4
Min.	2.4	2.6	4.0	3.5	8.2	13	35	74	3.8	2.0	1.8	2.4
Ac-ft	184	287	345	300	832	1,190	3,970	9,130	5,030	201	154	159
Calendar year	1960:			Max 344		Min 2.0		Mean 53.2		Acre-ft 38,630		
Water year	1960-61:			Max 243		Min 1.8		Mean 30.1		Acre-ft 21,770		

Peak discharge (base, 500 cfs)--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3435. Sagehen Creek near Truckee, Calif.

Location.--Lat 39°25'50", long 120°14'10", in NE₁NE₁ sec.7, T.18 N., R.16 E., on left bank 2.2 miles upstream from bridge on State Highway 89 and 7.5 miles north of Truckee.

Drainage area.--10.8 sq mi.

Records available.--October 1953 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,320 ft (from topographic map). Prior to Dec. 2, 1953, staff gage at site 100 ft upstream at different datum.

Average discharge.--8 years, 9.89 cfs (7,160 acre-ft per year).

Extremes.--Maximum discharge during year, 27 cfs Apr. 3 (gage height, 2.28 ft); minimum, 0.6 cfs Aug. 7, result of temporary regulation.

1953-61: Maximum discharge, 495 cfs Dec. 23, 1955 (gage height, 4.28 ft), from rating curve extended above 70 cfs on basis of slope-area measurement of peak flow; minimum, 0.6 cfs Aug. 8, 1960 and Aug. 7, 1961.

Remarks.--Records good except those for periods of backwater from ice and no gage-height record, which are fair. No storage or diversion above station.

Rating table, water year 1960-61
(gage height, in feet, and discharge, in cubic feet per second)

1.4	0.9	1.7	4.5
1.5	1.8	1.9	9.5
1.6	2.9	2.1	17

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	a 1.9	a 3	b 2.0	4.1	3.2	9.3	12	12	1.9	1.2	1.2
2	1.4	a 1.9	a 8.7	b 1.9	4.1	3.4	13	11	13	1.9	1.2	1.2
3	1.6	a 1.9	a 5.5	b 1.9	* 3.4	3.3	16	11	8.4	2.3	1.2	1.2
4	1.6	a 2.2	a 4.5	* b 1.9	3.2	3.2	15	11	7.8	2.2	1.2	1.2
5	1.6	a 2.0	a 2.4	b 1.8	3.0	2.9	12	9.8	7.3	1.9	1.2	1.2
6	2.1	a 2.8	a 2.4	b 1.9	3.0	2.9	12	10	7.1	1.8	1.3	1.1
7	1.8	* a 2.1	* b 2.4	2.0	2.9	2.9	11	a 9.2	* 6.1	1.7	1.3	1.2
8	1.7	a 2.1	b 2.1	2.0	2.8	* 2.9	10	9.5	6.1	1.6	1.4	1.2
9	1.7	a 2.1	b 2.2	2.1	6.0	2.8	* 11	10	5.6	1.6	1.4	1.2
10	* 1.9	a 2.1	b 2.1	2.1	10	2.9	10	* 14	5.4	* 1.5	1.2	1.2
11	1.9	a 2.6	2.4	2.1	8.4	2.9	10	13	5.4	1.6	1.3	1.2
12	1.8	a 4.3	2.4	2.1	4.9	2.9	11	12	4.9	1.6	1.3	1.2
13	1.8	a 4	2.4	2.1	4.1	3.3	10	a 11	4.5	1.6	1.3	1.2
14	1.8	a 3	2.5	2.1	3.6	4.3	9.2	a 11	4.3	1.5	1.2	1.2
15	1.8	a 3	a 2.5	b 2.0	3.6	4.1	9.5	a 10	4.1	1.4	1.2	1.2
16	1.8	a 3	a 3	2.1	3.3	3.4	11	9.8	3.8	1.4	* 1.2	1.9
17	1.8	a 3.9	a 3.3	b 2.0	3.0	3.4	12	9.8	3.6	1.4	1.2	1.9
18	1.8	a 5.2	a 3.3	b 1.9	2.9	3.4	11	9.5	3.4	1.4	1.2	1.5
19	1.8	a 4	a 3	b 1.8	2.9	3.4	8.9	9.5	3.3	1.3	1.3	1.4
20	1.8	a 3	a 2.3	a 1.5	2.9	4.3	* 8.1	9.2	3.2	1.3	1.3	1.4
21	1.8	a 2.3	a 2.3	a 1.5	3.2	4.5	8.1	8.7	2.9	1.3	1.3	* 1.4
22	1.8	a 2	a 2.3	a 1.5	3.2	5.8	7.6	8.1	2.8	1.3	1.2	1.4
23	1.8	a 2	a 2.3	a 2.5	2.9	7.6	a 5	7.6	2.6	1.3	1.2	1.4
24	a 1.8	a 2.5	a 2.3	a 3	3.0	6.1	a 6	7.6	2.4	1.3	1.2	1.4
25	a 1.8	a 3	a 2.2	a 3.5	3.0	5.1	a 8	7.6	2.4	1.3	1.2	1.4
26	a 1.8	a 2.5	a 2.2	a 4	2.9	4.7	a 11	7.1	2.4	1.2	1.2	1.4
27	a 1.7	a 2.5	a 2.2	a 4	2.9	4.5	a 10	6.6	2.2	1.2	1.3	1.4
28	a 1.7	a 2.3	a 2.2	a 3	2.8	4.3	a 11	6.3	2.1	1.2	1.4	1.4
29	a 1.7	a 2	a 2.1	a 2	-	4.5	a 12	5.8	2.1	1.2	1.4	1.4
30	a 1.7	a 2.3	a 2.1	a 2.5	-----	5.8	a 16	5.8	2.0	1.2	1.4	1.4
31	a 1.8	-----	a 2.1	5	-----	7.8	-----	10	-----	1.3	1.3	-----
tal	54.3	80.5	86.7	71.8	106.0	126.5	314.7	293.5	143.2	46.7	39.2	40.0
an	1.75	2.68	2.80	2.32	3.79	4.08	10.5	9.47	4.77	1.51	1.26	1.33
x.	2.1	5.2	8.7	5.0	10	7.8	16	14	13	2.3	1.4	1.9
n.	1.4	1.9	2.1	1.5	2.8	2.8	5.0	5.8	2.0	1.2	1.2	1.1
-ft	108	160	172	142	210	251	624	582	284	93	78	79

Calendar year	1960:	Max	44	Min	1.0	Mean	7.10	Acre-ft	5,150
Water year	1960-61:	Max	16	Min	1.1	Mean	3.84	Acre-ft	2,780

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

10-3444. Little Truckee River above Boca Reservoir, near Boca, Calif.

Location.--Lat 39°26'10", long 120°05'00", in SW¼SW¼ sec.3, T.18 N., R.17 E., on left bank 1 mile upstream from Boca Reservoir, 1½ miles upstream from Dry Creek, and 3½ miles north of Boca.

Drainage area.--146 sq mi.

Records available.--June 1903 to October 1910, September 1939 to September 1961. Published as "at Pine Station" June 1903 to December 1907 and as "at Starr" January 1908 to October 1910. Monthly discharge only for some periods, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and concrete control. Datum of gage is 5,618.67 ft above mean sea level (Bureau of Reclamation bench mark). June 1903 to October 1910, staff gages at different sites and datums.

Average discharge.--29 years (1903-10, 1939-61), 197 cfs (142,600 acre-ft per year).

Extremes.--Maximum discharge during year, 325 cfs June 6 (gage height, 176 ft); minimum, 3.2 cfs Dec. 29.
1903-10, 1939-61: Maximum discharge, about 9,500 cfs Dec. 23, 1955 (computed from change in contents of Boca Reservoir); minimum recorded, 2.2 cfs Dec. 5, 1959.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow slightly regulated by Independence Lake (capacity, about 17,500 acre-ft) and one transmountain diversion to Sierra Valley.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)

0.3	3.5	1.0	70
.4	6.8	1.2	112
.6	18	1.5	209
.8	39	1.7	300

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	126	15	34	b 11	49	40	74	134	201	25	6.1	8.7
2	123	14	52	b* 11	45	47	91	123	276	24	6.1	7.8
3	131	16	b 34	b 11	50	49	123	126	227	29	5.7	7.3
4	128	17	b 21	b 11	40	45	149	139	235	28	5.4	7.3
5	126	17	b 17	b 11	37	43	112	128	286	26	5.4	7.3
6			b	b								
7	131	19	b 19	b 11	39	38	87	120	286	26	5.7	6.8
8	131	* 18	b 17	b 11	37	37	94	105	272	25	1.3	6.4
9	131	17	b* 16	b 11	* 38	* 45	89	98	* 262	24	8.2	6.4
10	131	16	b 16	b 12	43	46	100	134	249	24	6.4	7.3
11	131	16	b 17	b 14	85	45	103	231	227	23	5.0	7.8
12	131	17	b 17	b 13	112	45	100	222	222	23	5.0	7.3
13	131	27	b 14	b 13	67	43	134	* 168	205	* 23	7.1	7.3
14	128	27	b 14	b 13	60	43	112	131	194	25	1.1	7.3
15	* 131	24	b 16	b 12	55	50	* 105	128	194	23	a 7.3	7.3
16	131	b 20	b 14	b 12	55	58	94	142	186	23	a 7.3	7.3
17	131	21	b 18	b 12	43	49	115	158	161	22	a 7.3	1.1
18	128	23	22	b 12	39	50	161	179	100	23	* 7.3	1.6
19	87	29	23	b 12	40	49	175	209	87	22	7.3	1.3
20	68	b 27	21	b 11	34	52	131	249	74	22	7.3	1.1
21	67	b 27	b 16	b 11	39	58	105	258	63	22	8.7	* 1.1
22	65	23	b 17	b 11	43	55	89	262	52	22	8.7	9.8
23	63	b 20	b 15	b 12	47	60	85	244	46	22	7.8	9.8
24	63	b 18	b 14	b 14	38	76	78	240	40	22	6.8	9.8
25	62	22	b 13	b 15	42	74	74	205	35	22	6.8	9.8
26	68	22	b 13	b 16	45	68	80	213	32	22	6.4	9.8
27	68											
28	68	b 22	b 14	b 17	39	62	91	222	31	16	6.4	9.8
29	67	b 22	b 13	b 18	39	60	107	168	28	a 12	6.8	9.2
30	27	b 15	b 14	20	38	55	98	161	27	a 10	7.8	9.2
31	19	b 18	b 12	21	-	52	100	139	26	a 8.7	8.2	9.8
32	17	b 21	b 13	24	-----	55	112	128	26	a 7.3	1.3	9.8
33	16	-----	b 13	45	-----	63	-----	139	-----	a 6.8	1.0	-----
Total	2957	610	569	448	1,338	1,612	3,168	5,303	4,350	6,528	231.3	268.4
Mean	95.4	20.3	18.4	14.5	47.8	52.0	106	171	145	21.1	7.46	8.95
Max.	131	29	52	45	112	76	175	262	286	29	13	16
Min.	16	14	12	11	37	37	74	98	26	6.8	5.0	6.4
Ac-ft	5,870	1,210	1,130	889	2,650	3,200	6,280	10,520	8,630	1,290	459	532
Calendar year	1960:		Max	710	Min	5.7	Mean	102	Acre-ft	73,750		
Water year	1960-61:		Max	286	Min	5.0	Mean	58.9	Acre-ft	42,660		

Peak discharge (base 500 cfs).--No peak above base

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3444.9 Boca Reservoir at Boca, Calif.

Location.--Lat 39°23'20", long 120°05'40", in NE¼NW¼ sec.28, T.18 N., R.17 E., in control house at Boca Dam, 1,800 ft upstream from mouth of Little Truckee River and half a mile northwest of Boca.

Drainage area.--172 sq mi.

Records available.--December 1938 to September 1961. End of month contents only for December 1938 to September 1957 published in WSP 1734.

Gage.--Pressure gage with mercury column read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum contents during year, 28,200 acre-ft June 25 (elevation, 5,590.85 ft); minimum, 3,330 acre-ft Sept. 30 (elevation, 5,544.30 ft).

1939-61: Maximum contents, 41,440 acre-ft Dec. 23, 1955 (elevation 5,605.55 ft); minimum 37 acre-ft Mar. 4-9, 1955 (elevation, 5,521.65 ft).

Remarks.--Reservoir is formed by earth-fill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,900 acre-ft between elevations 5,521 (outlet sill) and 5,605 ft. Dead storage, 240 acre-ft. Figures given herein represent usable contents. Water is used for irrigation in the State of Nevada and for power development.

Cooperation.--Daily elevations furnished by Washoe County Conservation District. Capacity table and maximum elevation for Dec. 23, 1955, furnished by Bureau of Reclamation.

Capacity table, water year 1960-61 (elevation, in feet, contents, in acre-feet)

5,544	3,250	5,580	20,020
5,550	4,970	5,590	27,510
5,560	8,790	5,591	28,320
5,570	13,760		

Contents, in acre-feet, at 8 a.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,570	10,140	11,430	9,400	10,690	9,690	10,660	9,760	20,290	27,470	15,710	5,170
2	8,790	10,160	11,600	9,440	10,760	9,760	10,720	9,970	20,740	27,270	15,050	5,100
3	8,790	10,160	11,660	9,480	10,880	9,860	10,820	10,160	21,320	27,070	14,520	5,060
4	9,120	10,160	11,710	9,540	10,980	9,950	10,880	10,450	21,740	26,830	13,930	5,020
5	9,370	10,180	11,760	9,560	11,060	10,040	10,900		22,260	26,630	13,380	4,920
6	9,440	10,210	11,790	9,560	11,130	10,110	10,960	10,930	22,840	26,310	12,860	4,840
7	9,670	10,240	11,740	9,580	11,230	10,210	10,900	11,160	23,360	26,000	12,380	4,740
8	9,860	10,260	11,600	9,620	11,300	10,160	10,840	11,360	23,880	25,720	12,020	4,630
9	9,950	10,260	11,500	9,650	11,380	10,210	10,790	11,560	24,380	25,410	11,530	4,520
10	10,070	10,280	11,380	9,690	11,560	10,210	10,760	11,840	24,830	25,100	11,060	4,420
11	10,210	10,320	11,260	9,740	11,840	10,210	10,720	12,330	25,260	24,760	10,590	4,320
12	10,300	10,400	11,160	9,790	12,040	10,240	10,640	12,760	25,650	24,380	10,110	4,220
13	10,400	10,500	11,030	9,810	12,180	10,260	10,590	13,050	26,080	24,000	9,620	4,120
14	10,450	10,640	10,900	9,860	12,330	10,280	10,520	13,320	26,430	23,580	9,150	4,020
15	10,480	10,660	10,790	9,880	12,440	10,300	10,450	13,600	26,830	23,170	8,660	3,940
16	10,500	10,740	10,690	9,930	12,540	10,350	10,400	13,870	27,190	22,800	8,160	3,780
17	10,520	10,820	10,590	9,950	12,510	10,380	10,380	14,240	27,430	22,400	7,640	3,720
18	10,450	10,840	10,520	9,970	12,380	10,400	10,590	14,610	27,590	22,000	7,160	3,640
19	10,280	10,860	10,400	10,020	12,220	10,420	10,860	15,080	27,750	21,570	6,660	3,640
20	10,110	10,930	10,280	10,040	11,960	10,450	10,860	15,590	27,880	21,160	6,170	3,640
21	9,880	10,980	10,160	10,070	11,740	10,420	10,760	16,100	27,960	20,710	5,700	3,660
22	9,690	10,980	10,070	10,110	11,480	10,400	10,590	16,630	28,040	20,290	5,570	3,620
23	9,460	11,060	9,930	10,140	11,230	10,450	10,400	17,100	28,120	19,880	5,540	3,590
24	9,540	11,080	9,810	10,160	10,980	10,450	10,180	17,540	28,160	19,500	5,480	3,580
25	9,670	11,130	9,690	10,210	10,740	10,500	9,950	17,970	28,200	19,200	5,430	3,520
26	9,790	11,180	9,600	10,260	10,480	10,590	9,860	18,390	28,160	18,790	5,380	3,480
27	9,930	11,230	9,460	10,320	10,210	10,640	9,690	18,790	28,120	18,330	5,330	3,440
28	10,040	11,260	9,350	10,380	9,950	10,660	9,740	19,130	28,040	17,840	5,300	3,400
29	10,090	11,280	9,370	10,420	-	10,660	9,740	19,400	27,880	17,320	5,250	3,360
30	10,140	11,380	9,400	10,480	-	10,640	9,740	19,670	27,670	16,780	5,220	3,330
31	10,160	-	9,420	10,540	-	10,660	-	19,950	-	16,220	5,180	-
(†)	5,563	5,565.50	5,561.42	5,563.80	5,562.55	5,564.05	5,562.10	5,579.90	5,590.20	5,574.19	5,550.65	5,544.30
(*)	+1,820	+1,220	-1,960	+1,120	-590	+710	-920	+10,210	+7,720	-11,450	-11,040	-1,850

Calendar year 1960.....# -720

Water year 1960-61.....# -5,010

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

PYRAMID AND WINNEMUCCA LAKES BASIN

493

10-3445. Little Truckee River at Boca, Calif.

Location.--Lat 39°23'10", long 120°05'40", in NE NW, sec.28, T.18 N., R.17 E., on right bank 800 ft upstream from mouth and 1,000 ft downstream from Boca Dam, and a third of a mile northwest of Boca.

Drainage area.--172 sq mi.

Records available.--April to October 1890 (monthly discharge only), January 1911 to September 1915, January 1939 to September 1961. Monthly discharge only for January 1939 to September 1957 published in WSP 1734.

Gage.--Water-stage recorder. Altitude of gage is 5,500 ft (from topographic map). Jan. 1, 1911, to Sept. 30, 1915, staff gage at site 650 ft downstream at different datum. January 1939 to September 1957, records computed from daily log of rated settings of needle valve in dam, and from computed flow over spillway.

Average discharge.--26 years (1911-15, 1939-61), 181 cfs (131,000 acre-ft per year).

Extremes.--Maximum discharge during year, 306 cfs Aug. 3 (gage height, 2.73 ft); minimum daily, 0.4 cfs May 20-22, but may have been less during period of no gage height record.

1890, 1911-15, 1939-61: Maximum discharge 8,800 cfs Dec. 24, 1955, from records of Washoe County Water Conservation District; no flow for many days in most years.

Remarks.--Records good. Flow regulated by Boca Reservoir, Independence Lake (capacity, about 17,500 acre-ft), and one transmountain diversion to Sierra Valley.

Rating table, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)

.1	.2	.5	3.2	1.4	60
.2	.5	.6	5.6	2.0	147
.3	.9	.7	9.0	2.5	247
.4	1.8	.9	20	2.8	319

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.1	1.2			7.9	5.6	4.7	1.2	12.5	28.4	2.7
2	7.3	1.1	1.1			1.2	5.6	1.9	1.2	12.5	29.9	2.7
3	2.6	1.2	1.0			1.2	9.1	1.2	1.1	12.5	30.2	2.7
4	3.4	1.2	1.0			1.2	11.2	1.2	1.1	12.4	28.4	3.4
5	4.4	1.2	1.0			1.2	13.5	1.2	1.1	14.0	25.2	5.4
6	4.8	1.2	2.8			1.2	9.9	1.2	1.1	16.5	25.2	5.4
7	4.8	1.3	7.2		* 0.8	2.8	12.4	1.2	* 1.1	17.4	24.9	* 5.4
8	5.1	1.3	* 7.2		*	* 4.1	12.4	1.2	1.1	17.3	24.7	5.4
9	6.6	1.3	7.3	*		4.1	12.4	1.2	1.1	17.3	24.5	5.4
10	6.5	1.2	7.3			4.1	12.4	1.2	1.1	18.0	24.5	5.3
11	6.5	1.4	7.5			4.1	13.0	1.2	1.1	20.0	24.3	5.3
12	7.8	1.5	7.3			4.1	15.8	* 1.2	1.1	* 21.4	24.5	5.3
13	8.8	1.4	7.3			4.1	15.8	1.2	1.1	21.4	25.2	5.1
14	11.2	* 1.4	7.3			4.1	* 14.2	1.2	1.1	21.2	24.9	5.1
15	11.6	1.4	7.3	* 0.9		4.1	13.5	1.2	1.1	21.2	25.2	5.1
16	11.6	1.3	7.3		2.8	4.1	13.5	1.2	1.1	21.0	25.4	5.1
17	13.3	1.3	7.5		10.5	4.1	6.6	1.2	1.1	21.0	25.4	5.1
18	15.6	1.3	7.5		10.5	4.1	3.3	1.2	1.1	21.7	25.4	3.5
19	16.3	1.3	7.5		14.8	5.0	7.9	1.1	1.1	22.1	25.6	1.1
20	16.3	1.3	7.5		17.3	5.5	13.8	1.1	1.1	22.1	25.2	1.1
21	16.3	1.3	7.5		17.3	5.5	16.7	1.1	1.1	22.1	* 14.5	1.4
22	16.3	1.3	7.5		17.1	5.5	18.6	1.1	1.1	22.1	2.7	2.5
23	8.2	1.3	7.5		17.1	5.5	18.8	1.1	1.1	22.1	2.7	2.6
24	* 1.0	1.3	7.5		17.1	4.8	18.8	1.1	1.1	22.1	2.7	2.6
25	1.0	1.3	7.3		17.3	4.0	17.1	1.1	2.5	22.1	2.7	2.6
26	1.0	1.3	7.3		17.1	4.0	16.1	1.1	5.0	23.8	2.7	2.6
27	1.0	1.2	7.3		17.1	4.4	12.2	1.1	5.0	24.7	2.7	2.6
28	1.0	1.2	3.1		17.1	5.6	9.8	1.1	6.2	24.7	2.7	2.6
29	1.1	1.2	a .9		-	5.6	9.8	1.1	8.9	28.4	2.7	2.4
30	1.1	1.2	a .9		-	5.6	9.8	1.1	11.4	27.5	2.7	2.4
31	1.1	-----	a .9		-----	5.6	-----	1.1	-----	27.2	2.7	-----
Total	1,996.4	38.3	1,616.0	27.9	1,943.0	1,230.0	3,696	96.9	416.6	6,303	5,585	1,079.2
Mean	64.4	1.28	52.1	0.9	69.4	39.7	123	3.13	13.9	203	180	36.0
Max.	163	1.5	7.5	-	173	79	188	47	114	284	302	54
Min.	0.8	1.1	0.9	-	-	1.2	33	0.4	1.1	124	27	1.1
Ac-ft	3,960	76	3,210	55	3,850	2,440	7,330	192	826	12,500	11,080	2,140
Calendar year	1960:			Max	510	Min	0.2	Mean	106		Acre-ft	76,800
Water year	1960-61:			Max	302	Min	0.4	Mean	65.8		Acre-ft	47,660

* Discharge measurement made on this day.

a No gage-height record.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3460. Truckee River at Farad, Calif.

Location.--Lat 39°25'41", long 120°01'59", in NE sec.12, T.18 N., R.17 E., on left bank 0.7 mile downstream from Farad powerplant, 2.5 miles north of Floriston, 3.4 miles downstream from Bronco Creek, and 3.5 miles upstream from California-Nevada State line.

Drainage area.--932 sq mi.

Records available.--March to October 1890 (monthly discharge only), September 1899 to September 1961. Published as "near Boca" March to October 1890; "at or near Nevada-California State line" September 1899 to August 1912; "at Iceland" August 1912 to December 1937. Monthly discharge only for Jan. 1944-July 1957, published in WSP 1734.

Gage.--Water-stage recorder. Datum of gage is 5,153.21 ft above mean sea level (Bureau of Reclamation bench mark). March to October 1890, staff gage at site about 7 miles upstream at different datum. Sept. 7, 1899, to May 31, 1909, staff gage at approximately same location at different datum. June 1, 1909, to July 31, 1912, staff gage at site about 2½ miles downstream at different datum. Aug. 1, 1912 to Dec. 31, 1937, water-stage recorder at site 4.1 miles upstream at different datum. Jan. 1, 1938, to Aug. 27, 1957, water-stage recorder at approximately same location at different datum.

Average discharge.--62 years (1899-61) 786 cfs (569,000 acre-ft per year).

Extremes.--Maximum discharge during year, 876 cfs May 21 (gage height, 3.40 ft); minimum, 64 cfs Sept. 26.

1899-1961: Maximum daily discharge, 17,500 cfs Nov. 21, 1950 (gage height 14.5 ft (present datum, from floodmarks), from slope-area measurements of peak flow; minimum, 28 cfs Dec. 18, 1930.

Remarks.--Records excellent. Flow regulated by Lake Tahoe, Boca Reservoir, Donner and Independence Lakes, and by several power-plants.

Rating tables, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 31

June 1 to Sept. 30

1.5	147	3.0	643	1.3	92	2.5	407
2.0	250	3.5	909	1.5	139	3.0	632
2.5	415			2.0	228	3.5	895

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	404	228	* 281	b 192	* 218	* 245	348	* 574	* 451	471	* 447	* 142
2	404	* 228	331	b 198	196	207	396	495	745	* 467	463	202
3	* 415	228	287	b 189	216	209	559	490	710	484	463	226
4	423	258	270	b 189	194	200	648	504	596	471	447	220
5	419	240	b 258	b 183	183	196	536	465	560	455	424	237
6	427	235	b 272	b 194	183	194	440	444	547	475	421	234
7	423	223	b 318	b 181	179	209	460	419	506	475	443	231
8	404	218	b 318	172	177	232	407	427	471	467	432	228
9	419	214	b 318	170	192	235	423	517	498	463	424	223
10	407	211	b 318	170	469	238	411	694	463	459	418	231
11	396	214	334	168	404	235	444	608	516	484	414	218
12	392	245	328	167	321	232	588	588	475	493	410	223
13	396	240	321	163	287	235	522	517	524	488	418	218
14	407	245	321	163	267	248	513	536	565	475	407	205
15	423	240	315	160	238	264	490	579	506	467	404	192
16	404	281	324	161	232	245	559	569	493	463	400	220
17	396	281	341	158	242	250	588	608	493	455	396	212
18	407	296	338	155	223	248	555	643	498	455	396	179
19	415	290	315	153	237	256	473	699	493	463	396	120
20	415	275	308	153	270	272	490	720	529	455	393	108
21	415	270	305	153	275	281	486	710	511	455	* 292	108
22	411	261	305	150	284	296	513	668	493	451	* 162	120
23	356	253	311	152	272	338	527	643	488	447	156	115
24	253	253	302	152	281	308	527	598	475	445	152	110
25	253	248	296	150	290	293	508	618	475	441	146	108
26	245	256	290	157	278	290	531	583	488	443	137	104
27	242	261	287	161	275	287	522	456	471	451	134	101
28	238	245	277	158	272	293	527	452	447	443	134	104
29	238	248	* 220	153	-	284	564	415	455	443	134	101
30	230	242	b 220	155	-----	293	583	381	475	447	142	94
31	230	-----	b 209	210	-----	315	-----	400	-----	443	129	-----
Total	11,307	7,427	9,238	5,190	7,155	7,928	15,138	17,020	15,417	14,294	10,134	5,134
Mean	365	248	298	167	256	256	505	549	514	461	327	171
Max.	427	296	341	210	469	338	648	720	745	493	463	237
Min.	230	211	209	150	177	194	348	400	447	441	129	94
Ac-ft	22,430	14,730	18,320	10,290	14,190	15,720	30,030	33,760	30,580	28,350	20,100	10,180

Calendar year 1960: Max 1,380 Min 209 Mean 503 Acre-ft 365,300
 Water year 1960-61: Max 745 Min 94 Mean 344 Acre-ft 248,700

Peak discharge (base, 1,600 cfs)--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

PYRAMID AND WINNEMUCCA LAKES BASIN

495

10-3473. Dog Creek near Verdi, Nev.

Location-- Lat 39°33'55", long 120°01'25", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.30, T.20 N., R.18 E., on left bank $3\frac{1}{2}$ miles upstream from mouth and 4 miles northwest of Verdi.

Drainage area--16.2 sq mi.

Records available--October 1956 to September 1961.

Gage--Water-stage recorder and concrete control. Altitude of gage is 5,660 ft (from topographic map).

Extremes--Maximum discharge during year, 16 cfs Feb. 2 (gage height, 0.70 ft); minimum, 0.2 cfs for many days during the year.
1956-61: Maximum discharge, 550 cfs Feb. 24, 1958 (gage height, 2.75 ft), from rating curve extended above 250 cfs;
minimum, 0.1 cfs Aug. 7-18, 1959, July to September 1960.
Maximum discharge known, 880 cfs Dec. 23, 1955, from slope-area measurement of peak flow.

Remarks--Records good.

Rating table, water year 1960-61 (gage height, in feet, and discharge, in cubic feet per second)

0.2 0.2 0.4 1.9
.3 .8 .5 4.6

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	3.4	0.4	0.9	0.6	0.6	0.5	1.1	0.2	0.2	0.2
2	0.2	0.2	1.6	0.2	2.9	0.9	0.6	0.5	1.2	0.2	0.2	0.2
3	0.2	0.2	0.8	0.2	1.3	0.9	0.5	0.5	0.5	0.2	0.2	0.2
4	0.2	0.3	0.6	0.2	0.8	0.8	0.6	0.4	0.5	0.2	0.2	0.2
5	0.2	0.4	0.4	0.2	0.8	0.7	0.6	0.4	0.4	0.2	0.2	0.2
6	0.2	0.7	0.4	0.3	0.8	0.8	0.6	0.5	0.2	0.2	0.2	0.2
7	0.2	0.5	0.3	0.3	0.8	0.8	0.6	0.5	0.2	0.2	0.2	0.2
8	0.2	0.4	0.2	0.4	0.7	0.8	0.5	0.4	0.2	0.2	0.2	0.2
9	0.2	0.2	0.2	0.5	1.0	0.9	0.5	0.2	0.2	0.2	0.2	0.2
10	0.2	0.3	0.3	0.6	1.2	1.0	0.5	0.4	0.3	0.2	0.2	0.2
11	0.2	0.5	0.4	0.6	1.8	0.8	0.4	0.5	0.3	0.2	0.2	0.2
12	0.2	0.8	0.4	0.6	1.3	0.8	0.7	0.6	0.3	0.2	0.5	0.2
13	0.2	0.5	0.4	0.5	1.2	0.8	0.7	0.5	0.2	0.2	0.2	0.2
14	0.2	0.4	0.5	0.5	1.6	0.8	0.5	0.4	0.2	0.2	0.2	0.2
15	0.2	0.5	0.5	0.5	1.3	0.8	0.4	0.4	0.2	0.2	0.2	0.2
16	0.2	0.5	0.5	0.4	0.8	0.7	0.4	0.3	0.2	0.2	0.2	0.2
17	0.2	0.7	1.2	0.4	0.8	0.8	0.4	0.3	0.2	0.2	0.2	0.2
18	0.2	1.2	0.8	0.4	0.6	1.3	0.3	0.2	0.2	0.2	0.2	0.2
19	0.2	0.5	0.7	0.4	0.6	1.1	0.3	0.2	0.2	0.2	0.2	0.2
20	0.2	0.6	0.6	0.4	0.8	1.0	0.4	0.2	0.2	0.2	0.2	0.2
21	0.2	0.5	0.6	0.4	0.8	0.8	0.4	0.2	0.2	0.2	0.2	0.2
22	0.2	0.4	0.5	0.4	0.7	0.8	0.8	0.2	0.2	0.2	0.2	0.2
23	0.2	0.4	0.5	0.5	0.5	0.9	0.9	0.2	0.2	0.2	0.2	0.2
24	* 0.2	0.5	0.5	0.5	0.6	1.0	1.0	0.2	0.2	0.2	0.2	0.2
25	0.2	0.4	0.6	0.5	0.8	1.1	1.4	0.2	0.2	0.2	0.2	0.2
26	0.2	0.4	0.5	0.5	0.6	1.0	1.0	0.2	0.2	0.2	0.2	0.2
27	0.2	0.4	0.5	0.6	0.6	1.0	0.8	0.2	0.2	0.2	0.2	0.2
28	0.2	0.4	0.4	0.5	0.6	1.0	0.6	0.2	0.2	0.2	0.2	0.2
29	0.2	0.5	0.3	0.7	-	0.8	0.5	0.2	0.2	0.2	0.2	0.2
30	0.2	0.6	0.4	0.8	-	0.7	0.5	0.3	0.2	0.2	0.2	0.2
31	0.2	-----	0.5	2.7	-----	0.6	-----	0.8	-----	0.2	0.2	-----
Total	6.2	14.1	19.5	16.1	27.2	26.8	18.0	10.8	9.0	6.2	6.5	6.0
Mean	0.20	0.47	0.63	0.52	0.97	0.86	0.60	0.35	0.30	0.20	0.21	0.20
Max.	0.2	1.2	3.4	2.7	2.9	1.3	1.4	0.8	1.2	0.2	0.5	0.2
Min.	.2	.2	.2	.2	.5	.6	.3	.2	.2	.2	.2	.2
Ac-ft	12	28	39	32	54	53	36	21	18	12	13	12

Calendar year 1960: Max 103 Min 0.1 Mean 2.27 Acre-ft 1,650
Water year 1960-61: Max 3.4 Min .2 Mean 0.46 Acre-ft 330

Peak discharge (base, 40 cfs)--No peak above base.

* Discharge measurement made on this day.

PYRAMID AND WINNEMUCCA LAKES BASIN

10-3480. Truckee River at Reno, Nev.

Location.--Lat 39°31'55", long 119°47'05", in NW $\frac{1}{4}$ sec. 7, T.19 N., R.20 E., on left bank 400 ft downstream from Kietzke Lane bridge, half a mile east of Reno, and 5 miles upstream from Steamboat Creek.

Drainage area.--1,067 sq mi.

Records available.--July 1906 to September 1921, June 1925 to September 1926, January 1930 to December 1935, January to December 1943, January 1946 to September 1961. Monthly discharge only for some periods, published in WSP 1314 and 1734.

Gage.--Water-stage recorder. Datum of gage is 4,431.97 ft above mean sea level (levels by Corps of Engineers). July 1906 to September 1946, staff gage at site 1 mile upstream at different datum.

Average discharge.--35 years(1906-21, 1925-26, 1930-34, 1946-61), 661 cfs (478,500 acre-ft per year).

Extremes.--Maximum discharge during year, 661 cfs April 4 (gage height, 3.24 ft); minimum, 22 cfs Sept. 8. 1906-21, 1925-26, 1930-35, 1943, 1946-61: Maximum discharge, 20,800 cfs Dec. 23, 1955, from rating curve extended above 14,000 cfs; maximum gage height, 13.83 ft Nov. 21, 1950; no flow Sept. 12, 14-24, 26-30, 1926.

Remarks.--Records good. Flow regulated by Lake Tahoe, Boca Reservoir, Donner and Independence Lakes, and by several powerplants. Many diversions above station.

Rating table, water year 1960-61, except periods of ice effect
(gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 13-24, Aug. 22, 26-31, Sept. 1-4, 10-12, 21-30)

1.2	25	2.0	139
1.4	46	2.5	320
1.8	100	3.0	550

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	130	137	240	b 180	256	252	208	288	228	128	114	52	
2	126	150	348	b 183	200	190	236	173	432	130	128	42	
3	130	173	304	b 180	208	197	352	144	505	155	121	44	
4	155	183	268	b 183	186	169	485	158	414	139	130	52	
5	152	200	b 244	b 176	158	161	356	137	288	121	119	84	
6	180	200	b 248	b 163	161	163	204	117	268	126	130	110	
7	193	190	b 316	b 166	155	152	208	112	204	137	238	* 100	
8	176	183	b 320	b 158	158	197	161	91	155	117	264	103	
9	216	180	b 308	b 137	152	212	144	115	147	119	158	75	
10	240	186	b 308	147	361	197	142	251	119	114	121	59	
11	240	180	b 328	144	446	197	119	276	139	119	121	68	
12	264	220	b 300	142	356	193	252	256	135	175	135	70	
13	264	244	304	137	292	183	272	190	147	220	139	75	
14	264	228	320	137	260	190	204	158	161	155	114	77	
15	276	224	300	128	252	212	155	216	152	124	108	75	
16	284	248	304	137	212	204	197	208	137	130	108	80	
17	256	264	316	135	244	197	264	236	121	126	96	139	
18	264	276	324	132	212	200	244	260	117	* 119	86	115	
19	272	288	308	128	197	193	166	324	121	117	96	103	
20	272	260	300	b 128	260	224	163	332	* 130	117	94	81	
21	276	* 248	* 300	b 124	264	216	161	352	144	110	88	67	
22	280	236	292	b 126	276	* 220	190	308	124	114	* 48	51	
23	268	232	296	128	* 264	244	220	308	114	115	75	43	
24	169	224	296	* 126	264	236	224	260	112	110	88	33	
25	161	220	296	112	276	212	* 236	* 244	130	114	72	30	
26	130	224	284	121	276	200	200	280	161	117	53	25	
27	* 137	232	268	135	260	200	228	147	137	107	47	24	
28	130	224	b 280	137	260	190	193	128	124	112	50	27	
29	135	224	b 212	142	-	183	212	130	115	107	54	34	
30	132	220	b 180	128	-----	176	260	105	119	108	53	30	
31	132	-----	b 183	137	-----	180	-----	163	-----	124	61	-----	
Total	6,322	6,498	8,895	4,437	6,866	6,140	6,656	6,467	5,400	3,926	3,309	1,968	
Mean	204	217	287	143	245	198	222	209	180	127	107	65.6	
Max.	284	288	348	183	446	252	485	352	505	220	264	139	
Min.	126	137	180	112	152	152	119	91	112	107	47	24	
Ac-ft	12,540	12,890	17,640	8,800	13,620	12,180	13,200	12,830	10,710	7,790	6,560	3,900	
Calendar year	1960:			Max	1,780		Min	126		Mean	305	Acre-ft	221,200
Water year	1960-61:			Max	505		Min	24		Mean	183	Acre-ft	132,660

Peak discharge (base 1,600 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

10-3565. Susan River at Susanville, Calif.

Location.--Lat 40°25', long 120°40', in NE $\frac{1}{4}$ sec. 31, T.30 N., R.12 E., on left bank 0.5 mile west of Susanville and 1.1 miles upstream from Piute Creek.

Drainage area.--192 sq mi.

Records available.--June 1900 to December 1905 (gage heights only August 1901 to January 1903), March to May 1913 (gage heights only), February 1917 to June 1921, October 1950 to September 1961. Published as "near Susanville" 1900-1905. Discharge records for August to December 1901 and January 1903, published in WSP 300, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 4,225.72 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1950, staff gages at several sites in vicinity of old powerplant about 0.9 mile upstream at various datums.

Average discharge.--17 years (1900-1901, 1903-5, 1917-20, 1950-61), 94.9 cfs (68,700 acre-ft per year).

Extremes.--Maximum discharge during year, 360 cfs Dec. 1 (gage height, 3.60 ft); no flow Aug. 15.
1900-1905, 1913, 1917-21, 1950-61: Maximum discharge, 3,540 cfs Dec. 23, 1955 (gage height, 6.62 ft), from rating curve extended above 840 cfs on basis of slope-area measurement of peak flow; no flow Aug. 15, 1961.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Flow regulated by McCoy Flat and Hog Flat Reservoirs (combined capacity, 25,300 acre-ft). Diversions for irrigation of about 1,400 acres above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 31

Aug. 1 to Sept. 30

0.2	0.3	1.2	19	0.35	0
.3	1.0	1.4	26	.4	.2
.4	1.9	1.7	42	.5	.6
.5	3.0	2.0	63	.6	1.5
.6	4.2	2.3	95	.7	2.7
.8	7.5	2.6	143	.9	6.1
1.0	12	3.0	220		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	* 4.2	123.	b10	63	*34	87	68	*90	6.4	*0.6	3.3
2	2.3	4.2	80	b10	*135	41	104	*66	140	5.6	.6	2.0
3	2.0	6.1	41	b9.5	88	39	138	65	163	5.4	.6	1.3
4	2.1	7.0	28	b9.5	59	36	147	61	167	4.6	.6	1.4
5	2.4	6.6	b12	b9.5	46	36	*124	59	170	4.8	.7	1.4
6	3.6	7.1	*b12	9.7	43	35	108	63	169	5.0	1.0	*1.3
7	3.7	8.6	b12	11	39	32	102	61	161	4.1	1.5	1.2
8	3.6	8.4	b12	14	36	34	90	57	163	3.7	2.0	1.2
9	4.1	7.0	b12	16	125	39	91	57	161	2.2	1.3	1.3
10	5.0	6.8	b14	*15	150	37	87	85	161	2.1	.6	1.4
11	4.8	1.0	14	b12	216	40	83	80	157	1.8	.3	1.4
12	4.1	1.8	13	b12	136	38	95	71	154	1.7	.1	1.5
13	4.8	1.5	13	b13	96	40	89	64	154	1.8	.1	1.5
14	4.8	1.2	13	13	85	49	78	63	157	1.8	.1	1.5
15	4.5	1.1	12	12	96	74	73	63	157	1.8	0	1.5
16	3.7	1.1	14	b11	83	59	79	62	159	2.1	.4	1.6
17	3.0	1.2	36	b11	69	57	88	63	150	1.4	1.0	2.0
18	3.0	3.6	40	b11	58	57	90	64	145	1.4	1.1	2.2
19	4.0	1.9	34	b11	52	57	80	65	140	1.3	1.3	2.2
20	4.4	1.4	27	b11	50	70	71	66	133	1.0	2.0	2.2
21	4.1	1.2	24	b11	49	61	68	65	124	1.0	1.7	2.2
22	4.0	1.1	b19	b11	49	66	75	61	118	1.0	1.7	2.2
23	4.1	1.1	b16	13	43	157	75	87	110	1.0	1.7	2.7
24	4.6	4.0	b14	12	41	129	68	87	100	1.0	1.9	2.8
25	3.8	2.6	b12	12	43	113	68	83	71	1.0	2.0	3.0
26	4.0	2.3	b12	13	38	98	72	83	25	1.1	1.9	3.8
27	3.8	2.2	b12	14	37	91	69	80	14	1.2	2.0	4.4
28	3.7	1.9	b12	13	34	80	65	75	10	.9	2.5	4.6
29	3.8	1.7	b11	13	-	75	64	70	8.2	.8	2.6	3.9
30	3.7	1.6	b11	17	-	75	64	81	6.4	.8	2.7	1.7
31	4.0	-	b11	92	-	80	-	78	-	.7	4.0	-
Total	115.9	421.0	716	452.2	2059	1929	2592	2153	3637.6	70.5	40.6	64.7
Mean	3.74	14.0	23.1	14.6	73.5	62.2	86.4	69.5	121	2.27	1.31	2.16
Max.	5.0	40	123	92	216	157	147	87	170	6.4	4.0	4.6
Min.	2.0	4.2	11	9.5	34	32	64	57	6.4	0.7	0	1.2
Ac-ft	230	835	1,420	897	4,080	3,830	5,140	4,270	7,220	140	81	128

Calendar year 1960:

Max 1,080

Min 0.8

Mean 43.4

Acres-foot 31,520

Water year 1960-61:

Max 216

Min 0

Mean 39.0

Acres-foot 28,270

Peak discharge (base, 300 cfs).--Dec. 1 (5 p.m.) 360 cfs (3.60 ft); Feb. 11 (8 a.m.) 333 cfs (3.51 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Doubtful gage-height record July 20-31

EAGLE LAKE BASIN

499

10-3578. Pine Creek near Susanville, Calif.

Location.--Lat 40°39'49", long 120°48'33", in SE $\frac{1}{4}$ sec. 2, T.32 N., R.10 E., on right bank 1.8 miles upstream from Eagle Lake and 18 miles northwest of Susanville.

Drainage area.--225 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,185 ft (from topographic map).

Extremes.--Maximum discharge during year, 90 cfs Apr. 5 (stage height, 3.29 ft); no flow for several months.

Remarks.--No storage or diversion except for minor stock ponds.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0	1.2	25	*4.0	0.1			
2					47	6.9	37	5.0	.2			
3					44	5.6	53	5.7	.1			
4					30	2.5	76	6.0	0			
5					23	2.4	81	4.9	0			
6												
7					17	1.8	*60	4.8	0			
8					9.6	1.2	49	5.5	0			
9					6.9	.8	38	5.7	0			
10					5.4	.7	28	5.2	0			
11					25	*2.9	21	5.0	0			
12					45	2.3	17	4.8	0			
13					14	4.0	13	*7.0	0			
14					34	3.0	10	11	0			
15					28	2.8	11	12	0			
16					24	6.7	9.1	9.3	0			
17												
18					16	9.8	7.0	7.0	0			
19					13	6.2	6.2	4.8	0			
20					8.3	7.0	6.1	3.1	0			
21					5.4	5.4	6.8	2.2	0			
22					4.4	8.4	10	1.7	0			
23												
24					3.1	*8.5	11	1.4	0			
25					4.3	10	10	*1.1	0			
26					1.9	20	12	1.1	0			
27					*1.8	29	17	.9	0			
28					3.6	29	17	.5	0			
29												
30					3.2	23	14	.1	0			
31					2.2	16	14	0	0			
					1.2	14	11	0	0			
						14	8.0	0	0			
						15	5.6	0	0			
						16		0				
Total	0	0	0	0	421.3	276.1	683.8	119.8	0.4	0	0	0
Mean	0	0	0	0	15.0	8.91	22.8	3.86	0.01	0	0	0
Max.	0	0	0	0	47	29	81	12	0.2	0	0	0
Min.	0	0	0	0	0	0.7	5.6	0	0	0	0	0
Ac-ft	0	0	0	0	836	548	1,360	218	0.8	0	0	0
Calendar year 1960:					Max	Min	Mean		Acre-feet			
Water year 1960-61:					Max	Min	Mean		Acre-feet			
					01	0	4.11		2,980			

* Discharge measurement made on this day.

10-3595. Pine Creek near Westwood, Calif.

Location.--Lat 40°35', long 121°06', in SE $\frac{1}{4}$ sec.5, T.31 N., R.8 E., on right bank 1 mile southwest of Bogard Guard Station and 19 miles north of Westwood.

Drainage area.--22.6 sq mi.

Records available.--October 1950 to September 1961 (discontinued).

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,700 ft (from topographic map).

Average discharge.--11 years, 7.02 cfs (5,080 acre-ft per year).

Extremes.--Maximum discharge during year, 30 cfs May 10 (gage height, 3.27 ft); minimum daily, 0.2 cfs for many days, but may have been less during periods of ice effect.

1950-61: Maximum discharge, 17 $\frac{1}{2}$ cfs Dec. 23, 1955 (gage height, 3.95 ft), from rating curve extended above 90 cfs; no flow at times in 1955, 1959-60.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation or diversion above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.5	0.2	2.9	6.6
2.6	.6	3.0	11
2.7	1.6	3.1	16
2.8	3.4	3.2	23

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	*0.4	0.8		1.0	*0.9	2.6	11	*12	1.2	*0.5	0.5
2	.3	.4	.8		*3.1	1.1	3.6	*11	12	1.6	.6	.4
3	.2	.5	.7		2.8	1.0	5.2	12	8.9	1.4	.5	.5
4	.3	.4	.7		2.6	.9	5.2	12	7.7	1.6	.6	.5
5	.3	.3	.7	0.3	2.5	.8	4.2	11	6.9	1.1	.7	.3
6	1.6	.6	*.7		2.2	.8	4.6	11	5.8	1.1	.8	*.3
7	.9	.6	.7		2.0	1.1	4.6	12	5.2	1.1	.9	.3
8	.8	.6	.7		1.9	.6	5.2	14	4.6	1.2	1.2	.5
9	.6	.4	.7		2.5	.5	5.8	14	4.2	1.4	1.2	.6
10	.6	.5	.7	(*)	3.0	.5	5.8	20	3.9	1.2	.8	.6
11	.6	.6	.7		4.0	.4	6.9	15	3.9	1.1	.7	.4
12	.6	.8	.7		5.0	.3	7.7	14	3.4	1.3	.7	.3
13	.6	.2	.7		4.5	.3	6.3	12	2.8	*1.8	.6	.4
14	.5	.2	.7		4.2	.6	6.6	13	2.6	1.6	.4	.3
15	.6	.6	.7		3.6	.6	7.7	13	2.2	1.4	.4	.4
16	.6	.8	.7		2.2	.6	9.8	14	2.0	1.3	.4	.4
17	.5	.8	.8		2.0	.4	13	16	2.0	1.1	.3	.7
18	.4	1.6	1.1	.2	1.9	.4	14	16	2.0	.9	.2	.5
19	.4	1.4	1.0		1.8	.4	9.3	18	1.7	.8	.2	.4
20	.4	.9	.8		1.6	.4	7.3	17	1.7	.5	.3	.4
21	.4	1.0	.8		1.6	.5	6.3	16	1.6	.9	.3	.3
22	.4	1.1	.8		1.6	.8	4.6	16	1.6	.9	.3	.3
23	.4	.9	.6		1.6	1.1	5.5	16	1.6	.8	.2	.4
24	.4	1.7	.6		1.1	1.1	4.8	13	1.4	.8	.3	.4
25	.4	1.7	.6		1.0	1.1	4.6	12	1.7	.8	.2	.3
26	.4	2.0	.6		1.8	1.0	5.2	13	1.4	.8	.2	.3
27	.4	1.2	.5		.9	.9	4.8	11	1.3	.7	.3	.2
28	.4	.9	.5	.3	.8	.8	5.5	9.3	1.6	.6	.5	.2
29	.5	.8	.4	.3	—	.9	8.9	8.9	1.3	.6	1.1	.3
30	.4	.7	.4	.3	—	1.3	11	12	1.2	.5	.6	.4
31	.4	—	.4	.4	—	1.9	—	11	—	.5	.6	—
Total	15.6	24.6	21.3	7.6	64.8	24.0	196.6	414.2	110.2	32.6	16.6	11.8
Mean	0.50	0.82	0.69	0.25	2.31	0.77	6.55	13.4	3.67	1.05	0.54	0.39
Max.	1.6	2.0	1.1	—	5.0	1.9	14	20	12	1.8	1.2	0.7
Min.	0.2	0.2	0.4	—	0.8	0.3	2.6	8.9	1.2	0.5	0.2	0.2
Ac-ft	31	49	42	15	129	48	390	822	219	65	33	23

Calendar year 1960: Max 20 Min 0.1 Mean 2.96 Acre-feet 2,150

Water year 1960-61: Max 20 Min 0.2 Mean 2.58 Acre-feet 1,870

Peak discharge (base, 35 cfs)--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 25 to Dec. 15, Dec. 27 to Feb. 15.

UPPER ALKALI LAKE BASIN

501

10-3609. Bidwell Creek near Fort Bidwell, Calif.

Location--Lat 41°52'55", long 120°10'25", in SE $\frac{1}{4}$ sec.6, T.46 N., R.16 E., on right bank $1\frac{1}{2}$ miles downstream from Mill Creek and 2.0 miles northwest of Fort Bidwell.

Drainage area--50 sq mi, approximately.

Records available--October 1960 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 5,000 ft (from topographic map).

Extremes--Maximum discharge during water year, 64 cfs May 20 (gage height, 3.34 ft); minimum, 1.4 cfs Nov. 5.

Remarks--Less than 2 cfs diverted upstream for irrigation. No storage above station.

Cooperation--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.1	2.9	4.1	4.5	5.7	6.7	2.4	3.0	5.1	1.1	4.6	* 3.4
2	2.8	2.8	3.6	4.4	9.4	6.8	3.6	3.0	5.2	1.1	* 4.2	3.6
3	3.0	3.1	3.5	4.2	8.1	6.0	4.6	3.1	5.3	1.1	4.1	3.6
4	2.9	2.7	3.3	4.2	6.8	6.3	4.2	3.0	5.5	1.1	4.1	3.6
5	2.9	3.0	3.2	4.3	6.2	6.3	3.6	2.7	* 5.5	1.0	4.8	3.4
6	3.0	4.3	3.1	4.2	6.4	5.5	3.1	2.7	5.5	* 9.3	5.2	3.3
7	3.7	4.8	3.2	5.7	5.9	5.2	2.9	2.3	5.2	9.1	4.4	2.9
8	4.0	3.7	3.4	8.0	6.0	5.0	2.8	2.4	5.0	8.3	4.3	2.9
9	3.7	3.5	3.5	5.5	8.3	5.6	2.7	2.9	4.8	7.7	3.6	3.1
10	3.8	3.8	3.4	4.3	9.9	5.7	2.8	3.3	4.5	7.7	3.7	3.0
11	3.9	7.9	3.5	4.2	9.8	6.1	3.1	3.3	4.6	7.1	3.7	2.9
12	4.1	4.6	* 3.4	4.2	8.5	5.8	3.6	3.0	4.6	7.2	4.1	2.9
13	3.4	4.2	4.0	3.9	7.6	7.1	3.1	2.9	4.0	7.0	3.9	2.7
14	3.2	3.7	4.2	3.9	7.2	8.1	2.6	3.4	3.7	6.8	3.9	2.7
15	3.4	3.9	3.6	3.7	6.9	8.8	2.8	3.7	3.4	6.2	3.5	2.6
16	3.3	4.4	3.4	3.7	6.6	7.5	3.6	3.7	3.4	5.9	3.2	2.9
17	3.3	6.0	9.7	3.9	6.1	7.2	4.3	* 4.2	3.0	6.4	3.1	3.4
18	3.1	1.1	1.4	3.9	6.9	7.1	4.1	4.5	2.9	5.8	3.2	4.4
19	3.2	4.8	8.7	4.1	5.7	7.4	3.5	4.7	2.7	5.8	3.1	3.0
20	2.9	4.5	5.9	3.9	5.9	7.4	3.0	5.5	2.4	5.7	3.9	2.6
21	2.7	* 4.1	5.6	3.9	* 6.8	7.9	2.4	5.7	2.4	5.7	3.9	2.8
22	2.7	4.0	* 5.4	4.2	7.6	9.4	2.3	5.5	2.2	5.1	3.4	2.8
23	2.7	4.2	5.0	4.2	7.0	1.4	2.1	5.1	1.9	5.8	3.1	3.0
24	2.8	5.5	5.0	4.4	7.0	1.3	1.7	5.1	1.9	5.2	2.7	2.8
25	2.8	5.8	4.9	* 4.1	6.6	1.2	1.7	5.1	1.8	5.3	3.3	2.6
26	3.4	5.3	4.6	4.1	5.5	1.1	* 1.7	5.2	1.6	5.2	3.4	2.6
27	* 3.2	4.9	4.5	3.8	6.2	9.7	1.9	5.0	1.4	4.6	3.1	2.6
28	3.3	4.4	4.3	4.5	5.6	9.6	2.4	4.6	1.4	4.8	4.0	2.4
29	3.1	3.8	4.0	4.4	-	* 1.1	2.8	4.6	1.4	4.7	3.7	2.6
30	3.1	3.8	4.3	4.4	-----	1.5	3.1	4.8	1.2	5.2	3.5	2.6
31	3.1	-----	4.7	9.6	-----	1.9	-----	4.5	-----	4.8	3.2	-----
Total	99.6	135.4	147.0	140.3	196.2	263.2	88.5	122.5	103.5	216.4	115.9	89.7
Mean	3.21	4.51	4.74	4.53	7.01	8.49	29.5	39.5	34.5	6.98	3.74	2.99
Max.	4.1	11	14	9.6	9.9	19	46	57	55	11	5.2	4.4
Min.	2.7	2.7	3.1	3.7	5.5	5.0	1.7	2.3	1.2	4.6	2.7	2.4
Ac-ft.	198	269	292	278	389	522	1,760	2,430	2,050	429	230	178
Calendar year 1960:	Max			-	Min	-	Mean	-	Acres-feet		-	
Water year 1960-61:	Max			57	Min	2.4	Mean	12.5	Acres-feet		9,020	

* Discharge measurement made on this day.

BUENA VISTA LAKE BASIN

11-1853. Golden Trout Creek near Cartago, Calif.

Location.--Lat 36°22'20", long 118°17'15", in NW 1/4 sec. 10, T.18 S., R.34 E., on right bank 0.3 mile upstream from Tunnel Ranger Station and 15 miles west of Cartago.

Drainage area.--23.4 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 9,000 ft (from topographic map).

Average discharge.--5 years, 13.1 cfs (9,480 acre-ft per year).

Extremes.--Maximum discharge during year, 24 cfs Aug. 22 (gage height, 2.49 ft); maximum gage height, 2.77 ft Dec. 8 (backwater from ice); minimum discharge, 3.0 cfs Nov. 12, result of upstream ice jams.

1956-61: Maximum discharge, 182 cfs May 31, 1958 (gage height, 4.05 ft); maximum gage height, 5.24 ft Feb. 12, 1959; minimum discharge, 0.2 cfs Feb. 11, 1959.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No storage or diversion above station.

Rating table, except periods of ice effect (gage height, in feet,
and discharge, in cubic feet per second)

1.8	3.2
1.9	4.8
2.0	6.8
2.2	12

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	6.4	b6.8	b6.2	b5.6	6.0	7.8	5.4	5.6	4.5	4.5	4.6
2	5.8	6.4	b6.6	6.0	5.6	6.2	10	5.4	5.4	4.5	4.5	4.5
3	5.8	6.6	b6.6	b6.0	5.4	5.8	11	5.4	5.2	5.0	4.5	4.5
4	5.8	6.8	b6.4	6.0	5.6	5.6	11	5.4	5.0	5.0	4.5	4.5
5	5.8	7.0	b6.4	6.0	5.6	5.8	9.3	5.4	5.0	4.8	5.0	4.5
6	8.0	6.8	b6.2	6.0	5.4	5.8	8.6	5.4	5.0	4.6	5.8	4.5
7	6.4	b7.0	b6.2	5.8	5.4	b5.6	7.3	5.4	5.0	4.6	5.2	4.5
8	6.2	b6.8	b6.4	5.8	*5.4	b5.6	6.6	5.4	5.0	4.5	4.8	4.5
9	6.4	b6.8	b6.8	5.8	5.4	5.6	6.6	5.2	4.8	4.5	4.6	4.5
10	6.6	b6.8	b7.3	5.6	5.4	5.6	6.4	5.2	4.8	4.5	6.6	4.5
11	6.8	b6.8	7.6	5.6	5.4	5.4	6.2	5.2	4.8	4.6	7.3	4.5
12	6.8	5.8	6.6	5.6	5.6	5.4	6.2	5.2	4.8	4.6	5.4	4.5
13	6.4	b6.8	6.4	5.6	5.6	5.8	6.4	5.4	4.8	4.8	5.0	4.5
14	6.2	b6.8	*6.4	5.6	5.6	6.0	6.2	5.2	4.6	4.6	4.6	4.5
15	6.0	b6.6	6.2	5.4	5.4	6.0	6.0	5.2	4.6	4.5	4.6	4.5
16	6.0	b6.6	6.2	5.6	5.4	b5.8	6.0	*5.2	4.6	4.5	4.6	4.5
17	6.0	b6.6	6.2	5.6	b5.4	5.8	6.0	5.0	4.6	4.5	4.5	4.5
18	6.0	6.6	6.2	5.6	b5.4	b5.8	5.8	5.0	4.6	4.5	4.5	4.5
19	6.0	b6.4	6.2	5.6	b5.4	b5.8	5.4	5.0	4.6	4.6	5.2	4.6
20	6.0	b6.4	6.2	5.6	5.4	5.6	5.4	5.2	4.6	4.6	5.8	4.6
21	6.0	6.4	6.4	5.4	5.4	6.0	5.2	5.2	4.6	4.5	5.2	4.6
22	6.0	b6.6	6.4	5.4	5.4	6.6	5.6	5.0	4.6	4.5	6.8	4.6
23	6.0	b6.4	6.4	5.4	b5.4	6.6	5.8	5.0	4.6	4.5	6.2	4.6
24	6.0	6.6	6.4	5.4	5.4	6.2	6.0	5.0	4.6	4.5	5.6	4.6
25	*6.0	6.6	6.4	5.4	5.4	5.8	6.0	5.0	5.0	4.5	5.0	4.6
26	6.0	6.4	6.2	5.6	5.4	b5.8	5.8	5.0	4.8	5.2	4.6	4.6
27	6.0	b6.4	6.2	5.6	5.6	5.8	*5.8	5.0	4.6	5.0	4.6	4.6
28	6.2	b6.4	6.2	b5.6	5.6	5.6	5.6	5.0	4.6	*4.8	4.6	4.6
29	6.2	6.4	b6.2	5.6	-	5.8	5.6	5.0	4.5	4.6	4.6	4.6
30	6.2	b6.4	6.2	5.6	-	6.0	5.4	5.0	4.5	4.5	4.6	4.6
31	6.2	-	6.2	5.4	-	6.8	-	5.0	-	4.5	-	-
Total	191.6	197.4	199.1	175.4	153.0	182.0	201.0	160.4	143.8	143.4	157.9	136.3
Mean	6.18	6.58	6.42	5.66	5.46	5.87	6.70	5.17	4.79	4.63	5.09	4.54
Max.	8.0	7.0	7.6	6.2	5.6	6.8	11	5.4	5.6	5.2	7.3	4.6
Min.	5.8	5.8	6.2	5.4	5.4	5.4	5.2	5.0	4.5	4.5	4.5	4.5
Ac-ft	380	392	395	348	303	361	399	318	285	284	313	270

Calendar year 1960:

Max	17	Min	5.2	Mean	6.97	Acres-feet	5,050	
Water year 1960-61:	Max	11	Min	4.5	Mean	5.59	Acres-feet	4,050

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

BUENA VISTA LAKE BASIN

503

11-1853.5. Kern River near Quaking Aspen Camp, Calif.

Location.--Lat 36°08'05", long 118°25'45", in SW 1/4 sec. 32, T.20 S., R.33 E., on right bank 0.4 mile upstream from Little Kern River and 6.8 miles east of Quaking Aspen Camp.

Drainage area.--530 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,700 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,930 cfs Aug. 23 (gage height, 6.88 ft), from rating curve extended above 360 cfs on basis of slope-area measurement of peak flow; minimum, 85 cfs Sept. 28-30.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 3

May 4 to Sept. 30

2.1	81	2.0	71
2.5	157	2.5	165
3.0	290	3.0	300
3.5	470	4.0	710

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	101	130	108	110	110	146	290	370	172	93	165
2	90	102	160	104	111	113	157	330	363	161	89	160
3	90	115	140	104	111	119	190	360	352	161	89	150
4	90	130	130	104	110	115	248	377	384	182	93	145
5	90	140	130	104	110	111	308	332	449	172	113	135
6	100	160	125	102	111	117	311	307	505	158	137	125
7	150	150	115	104	110	108	311	294	521	145	161	120
8	140	145	130	102	*110	117	266	304	566	135	152	120
9	130	145	130	102	110	119	260	321	552	128	130	115
10	125	140	125	106	111	115	242	346	501	124	137	115
11	130	140	125	102	113	115	230	342	465	120	403	110
12	130	160	125	102	113	113	257	314	461	118	421	100
13	130	180	125	101	110	115	245	297	437	120	304	100
14	130	160	*125	102	111	119	260	314	433	116	249	100
15	125	165	121	102	111	129	269	324	425	111	215	100
16	115	160	117	101	111	119	325	*356	409	107	198	100
17	115	155	121	101	108	133	398	413	398	105	178	100
18	115	150	119	101	104	123	430	481	377	101	161	100
19	110	150	117	101	104	129	384	449	349	101	161	100
20	110	140	115	101	106	131	336	394	328	101	205	100
21	110	140	115	101	108	131	294	409	307	98	210	100
22	108	135	115	101	108	137	278	473	288	93	228	95
23	108	135	115	101	106	148	242	521	273	91	450	95
24	106	135	113	101	106	148	233	552	261	93	350	90
25	*106	135	113	101	108	144	245	588	258	103	330	90
26	106	130	113	115	106	137	222	574	264	114	280	90
27	104	130	113	108	104	146	*225	533	235	126	240	90
28	104	125	110	108	108	144	220	561	225	*118	215	85
29	104	130	104	108	-	137	230	509	210	111	190	85
30	102	130	113	111	-----	135	245	429	192	101	180	85
31	102	-----	113	110	-----	139	-----	384	-----	96	170	-----
Total	3,465	4,213	3,762	3,219	3,049	3,916	8,007	12,478	11,158	3,782	6,532	3,265
Mean	112	140	121	104	109	126	267	403	372	122	211	109
Max.	150	180	160	115	111	148	430	588	566	182	450	165
Min.	90	101	104	101	104	108	146	290	192	96	89	85
Ac-ft	6,870	8,360	7,460	6,380	6,050	7,770	15,880	24,750	22,130	7,500	12,960	6,480

Calendar year 1960 :

Max -

Min -

Mean -

Acres-feet -

Water year 1960-61 :

Max 588

Min 85

Mean 183

Acres-feet 132,600

Peak discharge (base, 1,000 cfs).--Aug. 23 (4 p.m.) 2,930 cfs (6.88 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-24, Oct. 31 to Dec. 14 and Aug. 23 to Sept. 30.

BUENA VISTA LAKE BASIN

11-1854. Little Kern River near Quaking Aspen Camp, Calif.

Location.--Lat 36°08'05", long 118°26'10", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.20 S., R.33 E., on left bank 600 ft upstream from mouth and 5 miles east of Quaking Aspen Camp.

Drainage area.--134 sq mi.

Records available.--August 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,700 ft (from topographic map).

Extremes.--Maximum discharge during year, 198 cfs Aug. 11 (gage height, 3.06 ft); minimum, 3.8 cfs Aug. 1. 1957-61: Maximum discharge, 1,100 cfs May 19, 1958 (gage height, 5.24 ft); minimum, 3.8 cfs Dec. 6, 1959, Aug. 1, 1961.

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	3.0
1.7	6.0
1.8	10
1.9	16
2.1	32
2.3	56
2.6	106

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.0	11	18	15	17	18	36	66	43	9.6	4.0	13
2	8.4	11	33	14	18	20	44	66	41	9.2	4.0	12
3	8.4	13	19	14	18	22	62	68	41	9.2	4.0	11
4	8.4	20	18	15	17	22	78	66	40	11	4.3	10
5	8.4	18	18	15	17	18	83	58	41	9.6	6.8	9.6
6	18	30	15	16	17	23	70	55	41	9.2	13	9.2
7	22	22	15	18	17	18	70	55	39	8.4	9.2	8.8
8	14	17	16	16	*18	22	52	56	39	7.6	7.2	8.8
9	13	16	16	15	18	22	51	60	36	7.2	6.0	8.8
10	13	16	18	14	18	21	50	58	34	7.2	12	8.4
11	13	16	17	15	22	21	51	58	32	6.8	7.2	8.0
12	12	35	16	15	24	20	46	52	31	6.4	33	8.0
13	12	29	15	14	20	22	59	55	29	6.0	18	7.6
14	12	27	*15	15	20	22	59	60	28	5.6	13	7.2
15	12	21	15	15	20	29	66	59	25	5.6	11	7.2
16	12	21	15	14	19	26	80	*66	24	5.2	10	7.2
17	11	20	16	14	18	34	86	71	22	4.9	9.2	7.2
18	11	20	16	14	16	24	86	73	20	4.6	8.4	7.6
19	11	19	14	14	17	29	70	71	19	4.6	9.2	8.0
20	11	19	16	14	15	32	58	66	18	4.6	13	7.6
21	11	19	16	15	18	33	53	70	16	4.3	14	7.6
22	11	18	15	16	18	38	59	73	14	4.0	17	7.6
23	11	18	15	14	18	43	52	73	13	4.0	42	7.6
24	11	18	14	15	18	38	46	68	13	4.0	46	7.2
25	*11	18	15	15	18	35	48	66	14	5.6	28	6.8
26	11	18	16	22	18	31	46	62	13	6.0	20	6.8
27	11	16	15	17	17	32	*47	60	12	5.6	17	6.4
28	11	16	13	16	18	33	48	60	11	*5.2	15	6.4
29	11	17	14	16	-	30	52	53	10	4.6	14	6.4
30	11	18	15	18	-	30	55	50	10	4.3	13	6.4
31	11	-	17	17	-	32	-	47	-	4.0	13	-
Total	359.6	577	506	477	509	840	1763	1921	769	194.1	506.3	244.4
Mean	11.6	19.2	16.3	15.4	18.2	27.1	58.8	62.0	25.6	6.26	16.3	8.15
Max.	22	35	33	22	24	43	86	73	43	11	72	13
Min.	8.0	11	13	14	15	18	36	47	10	4.0	4.0	6.4
Ac-ft	713	1,140	1,000	946	1,010	1,670	3,500	3,810	1,530	385	1,000	485

Calendar year 1960:

Max 245

Min 6.8

Mean 50.1

Acres-feet 36,380

Water year 1960-61:

Max 86

Min 4.0

Mean 23.7

Acres-feet 17,190

Peak discharge (base, 400 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 6, 7, 12-17, Dec. 24 to Jan. 21, Jan. 23.

BUENA VISTA LAKE BASIN

505

11-1856. Packsaddle Canyon Creek near Fairview, Calif.

Location.--Lat 35°56'40", long 118°28'30" in sec.12, T.23 S., R.32 E. on right bank 1.8 miles northeast of Fairview.

Drainage area.--4.05 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder and crest-stage gage. Altitude of gage is about 3,600 ft (from topographic map).

Extremes.--No flow during year.

1959-61: Maximum discharge, 17.4 cfs Feb. 1, 1960 (gage height, 4.92 ft, from crest-stage gage), on basis of indirect measurement of peak flow through culvert; no flow for all or part of most years.

Remarks.--No flow since Feb. 19, 1960. No regulation or diversion above station. Observations of no flow generally made once or twice a month. Figures for calendar year 1960 are as follows: maximum daily discharge, 7.0 cfs; minimum, zero; mean, 0.07 cfs; runoff, 51 acre-ft.

BUENA VISTA LAKE BASIN

11-1860. Kern River near Kernville, Calif.

Location.--Lat 35°56'00", long 118°29'10", in NE $\frac{1}{4}$ sec. 14, T.23 S., R.32 E., on left bank 3 miles upstream from Salmon Creek and 15 miles north of Kernville.

Drainage area.--865 sq mi.

Records available.--January 1912 to September 1961. Records for water year 1912 incomplete, yearly estimates published in WSP 1315-A. Records of daily discharge include flow of Kern River No. 3 Canal. Prior to October 1953, records for canal published separately.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 3,550 ft (from topographic map). Prior to Apr. 1, 1913, at site 0.2 mile downstream at different datum. Apr. 1 to Sept. 14, 1913, staff gage and Sept. 15, 1913, to Feb. 20, 1922, water-stage recorder, at present site at datum 5.00 ft higher.

Average discharge.--50 years (1911-61), 691 cfs (500,300 acre-ft per year), combined flow of Kern River near Kernville and Kern River No. 3 Canal; median of yearly mean discharges, 610 cfs (442,000 acre-ft per year).

Extreme (river only).--Maximum discharge during year, 308 cfs Aug. 24 (gage height, 4.56 ft); minimum daily, 0.2 cfs Dec. 16-18. 1912-61: Maximum discharge, 27,200 cfs Dec. 23, 1955 (gage height, 17.55 ft), from rating curve extended above 6,000 cfs on basis of computed peak flow over dam (basic data for computation furnished by Southern California Edison Co.); no flow July 31 to Nov. 7, Nov. 12 to Dec. 7, 1924. Jan. 16 to Feb. 7, 1925, Jan. 21, 22, 1960.

Remarks.--Records good. Records of daily discharge presented herein include flow of Kern River No. 3 Canal which diverts 1 mile above station, from left bank of Kern River in sec. 12, T.23 S., R.32 E., for power development; water is returned to river 12 miles below station.

Cooperation.--Water-stage-recorder graph and 26 discharge measurements for Kern River and water-stage-recorder graph and 14 discharge measurements for canal furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	113	132	183	148	158	150	227	*371	*442	192	101	185
2	*114	136	239	140	158	154	248	417	*425	179	97	176
3	113	*142	*202	138	161	164	295	*444	*412	175	96	*165
4	115	171	181	136	157	165	*371	*457	*433	*191	101	155
5	115	177	183	*134	156	158	439	417	*483	196	116	147
6	131	229	179	134	156	172	438	385	*543	178	159	140
7	192	202	165	138	157	158	434	387	*563	162	169	135
8	181	188	181	137	156	163	385	393	592	150	173	132
9	164	189	180	136	156	173	354	389	594	143	145	131
10	163	185	178	139	158	169	337	411	546	138	147	130
11	173	184	179	143	165	165	325	412	504	133	394	127
12	176	220	174	141	174	162	341	391	495	129	491	123
13	176	272	172	138	161	166	357	379	472	129	353	118
14	174	213	172	140	160	170	359	396	467	128	281	117
15	166	215	171	141	160	190	362	396	459	122	236	115
16	155	211	168	*140	159	188	416	426	445	117	209	*115
17	153	206	168	*137	154	209	494	479	432	114	191	114
18	150	204	170	*140	147	193	540	539	412	111	178	114
19	148	204	168	*136	144	192	494	539	386	110	172	115
20	146	196	169	*137	149	194	440	487	360	111	211	115
21	143	196	168	141	152	202	391	480	341	107	225	114
22	141	190	169	141	153	210	384	525	316	102	253	112
23	140	189	168	139	150	232	349	580	301	98	352	110
24	139	190	166	139	147	227	327	608	284	97	532	109
25	138	190	164	141	150	225	341	647	282	104	407	106
26	135	189	164	174	150	208	319	646	286	117	318	105
27	136	188	164	167	146	218	315	601	262	130	272	103
28	136	177	159	153	*148	223	306	612	245	*127	241	101
29	135	185	145	150	—	206	313	582	228	124	217	101
30	134	187	148	*158	—	204	330	512	210	112	202	104
31	134	—	155	158	—	213	—	453	—	105	192	—
Total	4,528	5,757	5,352	4,434	4,342	5,822	11,031	14,761	12,220	4,131	7,231	3,754
Mean	146	192	173	143	155	188	368	476	407	133	233	124
Max.	192	272	239	174	174	232	540	647	594	192	532	185
Min.	113	132	145	134	144	150	227	371	210	97	96	101
Ac-ft	8,980	11,420	10,620	8,790	8,610	11,550	21,880	29,280	24,240	8,190	14,340	7,430
Calendar year 1960:	Max 1,420			Min 97			Mean 348			Acres-feet 252,200		
Water year 1960-61:	Max 647			Min 96			Mean 228			Acres-feet 165,300		

* Discharge measurement of river made on this day.

BUENA VISTA LAKE BASIN

507

11-1860. Kern River near Kernville, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1																	-	-	78	63	77	65	76	65
2																	-	-	72	65	73	66	77	65
3																	-	-	72	67	72	68	74	63
4																	-	-	78	65	73	69	72	60
5																	-	-	78	64	76	69	72	60
6																	-	-	78	64	79	68	72	60
7																	-	-	78	63	79	70	70	59
8																	74	63	79	64	82	69	68	57
9																	73	62	81	67	81	70	69	58
10																	75	61	82	68	79	72	70	58
11																	75	63	84	70	75	68	70	59
12																	77	63	81	71	81	65	71	59
13																	79	65	83	69	79	67	69	58
14																	79	66	82	69	78	67	69	58
15																	80	67	82	69	78	65	70	58
16																	81	68	83	68	77	65	68	61
17																	81	68	82	69	77	64	68	61
18																	81	67	83	70	77	65	68	57
19																	81	66	82	70	76	70	69	58
20																	82	68	82	70	80	69	69	58
21																	82	69	80	66	79	71	64	59
22																	82	71	81	67	81	71	67	57
23																	83	71	80	68	77	71	67	58
24																	83	71	81	71	67	62	67	58
25																	84	72	82	70	68	64	67	58
26																	83	71	82	70	75	63	68	58
27																	82	71	81	70	74	61	68	58
28																	79	66	82	70	73	61	68	58
29																	77	63	81	69	74	63	68	58
30																	75	63	80	67	75	64	67	57
31																	---	---	78	66	75	64	---	---
Avg																	-	-	80	68	76	67	69	59

BUENA VISTA LAKE BASIN

509

11-1875. Borel Canal below Isabella Dam, Calif.

Location.--Lat 35°38'30", long 118°28'10", in NE¼ sec.30, T.26 S., R.33 E., on right bank 500 ft downstream from Isabella Dam and 3 miles upstream from point where canal crosses Erskine Creek.

Records available.--January 1910 to September 1914, October 1925 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as Kern River Power Co.'s Canal at or near Kernville 1910-14. Published as "at Tillie Creek" 1925-51.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 2,540 ft (from topographic map). Prior to Apr. 29, 1952, at site 4 miles upstream at different datum.

Average discharge.--40 years, 357 cfs (258,500 acre-ft per year).

Extremes.--1910-14, 1925-61: Maximum daily discharge, 634 cfs Mar. 13, 14, 1952; no flow at times.

Remarks.--Records excellent. Canal diverts from right bank of Kern River 5.5 miles upstream from Isabella Dam, and above South Fork. When capacity of Isabella Reservoir is above 110,000 acre-ft, the diversion is at the dam. Canal is used to supply Borel power-plant of Southern California Edison Co., 6 miles downstream from station, at which point water is returned to Kern River.

Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*105	*129	*184	151	*167	*148	244	*253	254	187	90	*178
2	107	126	222	144	169	152	249	253	*253	*170	85	171
3	106	182	224	*142	173	160	*249	254	255	166	82	158
4	103	161	190	138	170	165	250	254	255	173	84	147
5	103	177	190	138	166	157	251	254	254	187	95	141
6	109	236	177	139	167	24	251	253	254	167	139	135
7	165	229	167	139	167	0	251	251	254	150	148	130
8	168	196	177	144	166	0	251	253	254	142	162	121
9	150	198	184	139	166	0	250	254	254	132	140	119
10	145	188	180	148	169	0	251	254	254	123	124	120
11	151	187	181	146	176	0	251	253	255	119	245	115
12	160	198	176	145	188	0	251	253	257	112	386	113
13	166	285	172	144	178	0	250	254	255	112	372	108
14	164	226	170	145	170	0	251	255	*255	115	289	*105
15	157	226	170	151	169	0	250	254	255	110	240	102
16	148	217	165	147	170	0	251	254	300	101	206	101
17	*143	212	165	*145	166	0	251	*254	349	97	187	104
18	138	208	168	145	159	121	*250	254	348	97	169	104
19	*136	210	*162	148	152	198	251	253	329	94	*159	106
20	133	200	162	145	156	*204	254	254	332	*96	187	102
21	132	*198	164	154	*160	212	253	255	322	96	217	100
22	131	197	165	151	161	215	254	255	300	91	238	99
23	129	187	165	149	161	233	254	254	285	87	313	97
24	130	190	164	149	156	242	254	254	268	82	391	100
25	132	192	161	151	158	242	253	254	260	82	398	97
26	131	190	159	169	160	224	254	253	267	96	367	96
27	130	187	161	197	157	227	255	253	*253	110	285	93
28	129	177	159	169	151	245	254	254	233	114	250	88
29	130	182	143	164	-	229	253	255	219	109	221	88
30	130	190	142	167	220	220	253	254	200	99	205	90
31	129		155	168		223	254	254		*91	191	
Total	4,190	5,881	5,324	4,671	4,628	3,841	7,544	7,866	8,083	3,707	6,665	3,428
Mean	135	196	172	151	165	124	251	254	269	120	215	114
Max.	168	285	224	197	188	245	255	255	349	187	398	178
Min.	103	126	142	138	151	0	244	251	200	82	82	88
Ac-ft	8,310	11,660	10,560	9,260	9,180	7,620	14,960	15,600	16,030	7,350	13,220	6,800
Calendar year 1960: Max 568 Min 85 Mean 256 Acres-feet 185,700												
Water year 1960-61: Max 398 Min 0 Mean 180 Acres-feet 130,600												

* Discharge measurement made on this day.

BUENA VISTA LAKE BASIN

11-1875. Borel Canal below Isabella Dam, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	64	62	54	51	43	38	39	35	46	41	50	44	58	51	59	56	60	56	71	64	73	70	70	63
2	63	61	54	51	44	41	39	36	46	42	50	46	60	53	59	55	61	56	70	65	74	69	69	64
3	63	61	54	52	43	41	39	35	46	42	50	46	61	55	59	55	64	56	68	64	74	70	69	63
4	62	60	53	50	42	39	39	36	47	42	50	45	62	57	57	54	66	60	70	64	73	71	69	62
5	63	61	53	49	41	37	39	36	47	41	50	45	60	58	56	52	66	61	69	62	74	71	68	61
6	64	63	51	50	40	35	38	35	47	41	-	-	59	56	54	52	65	61	68	62	75	72	68	62
7	64	60	50	48	38	34	39	36	48	42	-	-	57	54	56	51	65	61	69	62	75	69	67	62
8	62	56	51	47	37	34	39	36	47	43	-	-	56	51	58	52	65	62	71	64	76	70	67	61
9	58	54	50	46	39	34	39	36	48	43	-	-	57	51	59	54	64	61	73	67	76	70	65	61
10	56	52	50	45	39	35	40	36	49	43	-	-	57	52	61	55	65	61	74	69	75	72	66	61
11	56	50	49	44	41	36	42	37	50	45	-	-	58	53	59	54	66	62	74	71	73	68	67	62
12	53	48	49	45	41	37	42	38	50	45	-	-	57	53	58	53	67	62	76	73	70	65	67	63
13	53	48	46	44	41	37	42	38	49	43	-	-	55	52	57	50	69	63	75	73	71	65	67	64
14	53	48	46	44	41	37	42	38	47	41	-	-	56	51	59	52	71	65	75	72	71	65	67	63
15	53	48	46	43	41	37	43	38	47	41	-	-	58	52	62	56	71	66	74	72	70	64	66	64
16	53	48	46	42	41	37	43	39	48	43	-	-	59	54	63	57	72	66	74	73	70	64	67	65
17	53	49	45	42	41	36	43	39	48	44	-	-	59	55	63	58	72	67	75	74	71	66	67	64
18	54	49	45	41	40	36	43	37	47	42	-	-	58	55	62	58	71	66	75	74	71	66	64	62
19	54	50	46	42	41	37	42	37	47	41	51	45	55	52	59	57	72	66	76	74	71	67	64	62
20	55	50	46	41	42	38	41	37	47	41	53	46	52	50	59	53	73	66	75	73	75	67	64	63
21	55	50	45	40	42	38	41	37	49	42	54	48	52	48	62	56	75	67	73	71	76	69	64	62
22	55	51	45	40	44	39	43	39	49	44	55	48	52	48	63	58	74	69	75	72	74	70	62	61
23	55	51	44	40	44	40	43	39	49	44	55	50	50	48	62	59	75	68	77	74	73	69	63	61
24	54	51	45	40	44	40	44	39	49	42	54	50	51	45	62	59	75	69	78	75	72	69	64	62
25	55	50	45	41	43	39	44	40	49	43	51	48	52	46	62	59	75	69	79	75	71	68	64	62
26	55	51	45	41	43	38	44	42	48	43	50	44	55	48	62	58	75	69	77	75	70	67	64	63
27	54	51	43	40	42	38	45	41	48	43	51	46	56	50	62	59	73	68	76	75	68	64	65	63
28	54	51	43	39	41	37	45	41	50	43	52	47	58	52	62	59	72	66	76	73	68	63	65	64
29	54	50	42	38	41	37	45	41	-	-	53	47	60	54	62	58	71	65	75	73	69	63	64	62
30	54	50	42	38	40	36	46	42	---	---	55	47	60	55	61	57	70	63	74	72	70	64	63	61
31	54	50	---	---	39	36	46	42	---	---	56	49	---	---	62	58	---	---	73	71	70	64	---	---
Avg	57	53	47	44	41	37	42	38	48	42	-	-	57	52	60	56	69	64	74	70	72	68	66	62

BUENA VISTA LAKE BASIN

511

11-1882. South Fork Kern River near Olancho, Calif.

Location.--Lat 36°11'00", long 118°07'40", in NW 1/4 sec. 18, T.20 S., R.36 E., on left bank 50 ft upstream from small unnamed left bank tributary, 2.0 miles downstream from Snake Creek, and 9.7 miles southwest of Olancho.

Drainage area.--148 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 7,900 ft (from topographic map).

Average discharge.--5 years, 36.7 cfs (26,570 acre-ft per year).

Extremes.--Maximum discharge during year, 34 cfs Mar. 23 (gage height, 1.71 ft); maximum gage height, 2.13 ft Dec. 14 (backwater from ice); minimum discharge 0.1 cfs July 20 to Aug. 3.

1956-61: Maximum discharge, 1,280 cfs May 10, 1958 (gage height, 5.50 ft); maximum gage height, 5.85 ft (corrected) Apr. 18, 1958 (backwater from ice); minimum discharge, that of July 20 to Aug. 3, 1961.

Remarks.--Records good except those for periods of ice effect, which are poor. No storage or diversion above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	0.1
.8	.4
.9	1.2
1.0	2.4
1.1	4.0
1.2	6.0
1.3	9.0
1.5	18
1.8	36

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	5.5				18	18	7.5	4.2	0.2	0.1	0.4
2	3.4	5.3				22	21	7.2	5.3	.2	.1	.4
3	3.8	6.2		b4.0		b18	25	7.2	5.1	.3	.1	.3
4	4.0					b15	26	6.9	4.5	.3	.2	.4
5	4.2		b4.5			b14	24	6.9	4.0	.2	.5	.4
6	5.5					13	22	6.9	3.4	.2	.6	.4
7	12	b7.0		4.3		b13	21	6.9	2.8	.2	.4	.4
8	7.5			4.7	(*)	b14	18	6.6	2.5	.2	.3	.4
9	6.6			5.5		16	17	6.4	2.2	.2	.2	.4
10	10				b7.0	17	16	6.0	2.0	.2	.3	.4
11	10					17	14	6.0	1.5	.2	1.1	.4
12	10					16	15	6.4	1.4	.2	.6	.3
13	8.6	b6.0				19	16	6.6	1.2	.2	.4	.3
14	7.5		(*)			b20	18	6.4	.8	.2	.3	.3
15	6.6					b15	15	6.0	.7	.2	.3	.3
16	b6.4					b15	14	*5.5	.6	.2	.3	.3
17	6.2	b5.0				b15	13	5.3	.5	.2	.3	.3
18	6.0					15	13	5.1	.4	.2	.3	.3
19	6.0					17	11	4.9	.4	.2	.3	.3
20	5.7		b4.0	b6.0	b9.0	18	9.8	4.9	.3	.1	.4	.3
21	5.5									.1	.4	.3
22	5.5				b10	20	9.4	4.9	.3	.1	.4	.3
23	5.5				b10	26	11	4.5	.3	.1	1.0	.3
24	5.3				b10	30	11	4.3	.2	.1	1.2	.3
25	*5.1	b4.5			b11	b20	14	3.8	.2	.1	1.1	.3
					14	b16	15	3.4	.3	.1	1.0	.3
26	5.1											
27	5.1				16	b18	12	3.3	.3	.1	1.1	.3
28	5.3				16	22	*11	3.1	.2	.1	.7	.2
29	5.3				16	22	10	3.0	.2	*1	.5	.2
30	5.3					16	9.0	3.1	.2	.1	.4	.2
31	5.7					16	7.8	3.3	.2	.1	.5	.2
						19		3.4	.2	.1	.4	
Total	192.1	166.0	129.0	170.5	245.0	552	457.0	165.7	46.2	5.2	15.4	9.6
Mean	6.20	5.53	4.16	5.50	8.75	17.8	15.2	5.35	1.54	0.17	0.50	0.32
Max.	12	7.0	4.5	6.0	16	30	26	7.5	5.3	0.3	1.2	0.4
Min.	3.4	4.5	4.0	4.0	7.0	13	7.8	3.0	0.2	0.1	0.1	0.2
Ac-ft	351	309	256	338	486	1,090	906	329	92	10	31	19

Calendar year 1960:

Max 96

Min 0.2

Mean 10.9

Acres-feet 7,880

Water year 1960-61:

Max 30

Min 0.1

Mean 5.90

Acres-feet 4,270

Peak discharge (base, 150 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

BUENA VISTA LAKE BASIN

11-1895. South Fork Kern River near Onyx, Calif.

Location.--Lat 35°44', long 118°10', in SW¼ sec.24, T.25 S., R.35 E., on left bank three-quarters of a mile north of State Highway 178, 1.4 miles upstream from Canebrake Creek, and 5 miles northeast of Onyx.

Drainage area.--530 sq mi.

Records available.--September 1911 to August 1914, January 1919 to September 1942, October 1947 to September 1961. Yearly estimate for water year 1927 (incomplete) and monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder and broad-crested weir. Altitude of gage is 2,900 ft (from topographic map). Sept. 12, 1911, to Aug. 31, 1914, staff gage and Jan. 23, 1919, to Apr. 17, 1936, water-stage recorder, at site 140 ft upstream at same datum.

Average discharge.--37 years (1911-13, 1919-25, 1926-27, 1929-42, 1946-61), 101 cfs (73,120 acre-ft per year); median of yearly mean discharges, 73 cfs (52,800 acre-ft per year).

Extremes.--Maximum discharge during year, 76 cfs Aug. 23 (gage height, 2.28 ft); no flow July 23 to Aug. 5. 1911-14, 1919-42, 1947-61: Maximum discharge, 3,450 cfs Mar. 2, 1938 (gage height, 6.69 ft), from rating curve extended above 1,900 cfs, but may have been exceeded by flood of Jan. 25, 1914 (observed maximum gage height, 7.2 ft and rising, at site then in use); no flow for several days in 1929, 1934, 1960, and 1961.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Lowell and Thomas ditches divert above station for irrigation of about 160 acres below station; combined capacity, about 5 cfs.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0	1.5	8.6
1.1	.3	1.6	13
1.2	1.2	1.8	24
1.3	2.9	2.0	42
1.4	5.3	2.2	65

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	8.3	1.8	1.6	1.9	1.9	2.3	1.8	2.7	1.6	0	
2	1.8	7.9	2.4	1.6	1.9	1.9	2.4	1.8	2.7	.4	0	
3	2.1	8.3	2.5	1.4	1.8	2.2	2.6	1.7	2.9	.4	0	
4	3.1	1.7	2.2	1.4	1.8	2.6	3.0	1.7	3.1	.4	0	
5	3.6	2.0	1.8	1.5	1.7	2.4	3.6	1.7	2.7	.4	0	
6	4.1	5.0	1.6	1.6	1.8	2.4	3.6	1.7	2.3	.4	2.2	
7	5.1	4.8	1.6	1.5	1.8	2.4	3.3	1.7	1.9	.3	1.3	
8	5.6	3.3	1.6	1.4	1.8	1.6	3.0	1.6	1.5	.2	.3	0.1
9	6.0	2.6	1.6	1.4	1.9	1.9	2.9	1.6	1.3	.2	.1	
10	7.3	2.3	1.6	1.6	1.9	2.1	2.6	1.5	1.3	.2	.1	
11	7.6	2.1	1.6	1.6	2.0	2.1	2.6	9.9	1.3	.2	1.5	
12	7.6	2.3	1.6	1.5	2.1	2.1	2.4	6.6	1.3	.2	2.5	
13	8.3	3.6	1.6	1.4	2.1	2.1	2.4	6.6	1.6	.2	.8	
14	9.0	2.6	1.6	1.5	2.3	2.1	2.4	6.6	1.5	.1	.2	†.1
15	8.3	2.0	1.6	1.5	1.8	2.4	2.4	6.6	*1.0	.1	.2	
16	7.6	1.9	1.6	*1.6	1.8	2.6	2.5	6.3	.7	.1	.2	
17	7.0	1.9	1.5	1.5	1.7	2.6	2.4	6.3	.5	.1	.2	
18	*7.0	2.0	1.5	1.5	1.5	2.5	2.3	*5.6	.5	.1	.2	
19	7.0	2.1	1.5	1.5	1.3	2.4	*2.1	5.1	.6	.1	*.2	
20	6.6	2.1	*1.5	1.6	1.2	2.4	2.1	5.3	.6	†.1	.2	
21	6.6	1.9	1.5	1.8	*1.3	*2.5	1.9	5.6	.7	.1	.5	
22	6.6	*1.9	1.7	1.8	1.6	2.7	1.7	5.3	.8	.1	4.0	
23	6.6		1.6	1.8	1.4	3.0	1.6	5.1	1.0	0	2.3	.1
24	7.0		1.6	1.6	1.5	3.4	1.6	5.1	1.1	0	2.9	
25	7.0		1.6	1.7	1.5	3.3	1.6	6.0	1.1	0	.6	
26	7.0	1.8	1.6	2.2	1.6	2.6	1.8	6.0	1.1	0	.1	
27	7.3		1.6	2.4	1.6	2.5	1.9	6.0	1.2	0	.1	
28	7.6		1.8	2.2	1.8	2.8	1.8	6.0	1.5	0	.2	
29	8.3		1.6	2.1	-	2.7	1.7	6.0	1.6	0	.1	
30	7.9		1.5	2.1		2.4	1.6	6.0	1.8	0	.1	
31	7.6		1.6	2.2		2.2		5.1		0	.1	
Total	195.8	649.5	52.0	52.1	48.4	74.8	70.1	295.1	43.9	6.0	41.9	3.0
Mean	6.32	21.6	16.8	16.8	17.3	24.1	23.4	9.52	1.46	0.19	1.35	0.10
Max.	9.0	50	25	24	23	34	36	18	3.1	1.6	23	0.1
Min.	1.6	7.9	1.5	1.4	1.2	1.6	1.6	5.1	0.5	0	0	0.1
Ac-ft	388	1,290	1,030	1,030	960	1,480	1,390	585	87	12	83	6.0
Calendar year 1960 :				Max 14.1	Min 0	Mean 23.7		Acres-feet 17,210				
Water year 1960-61 :				Max 50	Min 0	Mean 11.5		Acres-feet 8,340				

Peak discharge (base, 180 cfs).--No peak above base.

* Discharge measurement made on this day.

† Result of discharge measurement.

Note.--No gage-height record Nov. 23-30, Dec. 4-8, 13-20, July 14-22, Sept. 1-30.

BUENA VISTA LAKE BASIN

513

11-1897. Kelso Creek near Weldon, Calif.

Location.--Lat 35°34'10", long 118°15'05", in NW 1/4 sec.20, T.27 S., R.35 E., on left bank 0.5 mile upstream from Woolstaff Creek and 7 miles southeast of Weldon.

Drainage area.--101 sq mi.

Records available.--August 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,180 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,180 cfs Aug. 23 (gage height, 6.00 ft), from rating curve extended above 7 cfs on basis of slope-area measurement of peak flow; minimum, 0.9 cfs many days in June, July, August.
1958-61: Maximum discharge, that of Aug. 23, 1961; minimum, 0.8 cfs July 28, 1960.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversions for irrigation above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.2	1.4	1.5	1.4	1.5	1.3	1.5	1.3	1.2	0.9	1.1	1.1
2	1.2	1.4	1.5	1.4	1.5	1.4	1.3	1.3	1.2	.9	1.1	1.1
3	1.2	1.4	1.5	1.4	1.5	1.3	1.4	1.3	1.1	1.0	1.1	1.1
4	1.2	1.4	1.5	1.4	1.5	1.4	1.3	1.2	1.2	1.0	1.1	1.1
5	1.2	1.5	1.4	1.5	1.5	1.4	1.4	1.2	1.1	1.0	1.1	1.1
6	1.2	1.6	1.4	1.4	1.5	1.4	1.3	1.2	1.0	.9	1.1	1.1
7	1.2	1.4	1.4	1.4	1.5	1.4	1.4	1.2	1.0	.9	*1.1	1.1
8	1.2	1.4	1.4	1.4	1.5	1.4	1.4	1.2	1.1	.9	1.1	1.1
9	1.2	1.4	1.4	1.5	1.5	1.4	1.4	1.2	1.1	.9	1.1	1.1
10	1.2	1.4	1.4	1.4	1.5	1.4	1.4	1.2	1.1	.9	*2.8	1.1
11	1.2	1.4	1.3	1.4	1.5	1.4	1.4	1.2	1.1	.9	5.1	1.1
12	1.2	1.5	1.3	1.4	1.5	1.4	1.3	1.2	1.1	.9	1.2	1.1
13	1.2	1.5	1.3	1.4	1.5	1.4	1.5	1.2	1.1	.9	1.1	1.1
14	1.2	1.5	1.3	1.4	1.5	1.4	1.5	1.2	1.1	.9	1.1	*1.1
15	1.2	1.5	1.3	1.4	1.5	1.4	1.4	1.1	*1.0	.9	1.0	1.1
16	1.2	1.5	1.3	*1.3	1.5	1.4	1.3	1.3	.9	.9	1.0	1.1
17	1.2	1.5	1.3	1.4	1.5	1.4	1.4	1.2	.9	.9	.9	1.1
18	*1.2	1.5	1.3	1.4	1.5	1.4	1.4	*1.1	.9	.9	1.0	1.1
19	1.2	1.5	1.4	1.4	1.4	1.4	*1.3	1.1	1.0	.9	.9	1.1
20	1.3	1.5	*1.3	1.4	1.4	1.4	1.3	1.2	1.0	*.9	1.0	1.1
21	1.3	1.4	1.3	1.4	*1.3	*1.4	1.3	1.1	1.0	.9	1.0	1.1
22	1.3	*1.4	1.4	1.4	1.3	1.4	1.4	1.1	1.0	.9	1.0	1.1
23	1.3	1.4	1.4	1.4	1.3	1.4	1.4	1.1	1.0	.9	*2.8	1.1
24	1.4	1.5	1.4	1.4	1.3	1.4	1.4	1.1	.9	.9	1.5	1.0
25	1.4	1.5	1.4	1.4	1.3	1.5	1.4	1.0	1.0	.9	1.5	1.0
26	1.3	1.5	1.5	1.4	1.3	1.5	1.4	1.2	.9	1.0	1.4	1.1
27	1.3	1.5	1.5	1.4	1.3	1.5	1.3	1.2	.9	1.0	1.1	1.0
28	1.3	1.5	1.5	1.4	1.3	1.5	1.3	1.1	.9	1.0	1.1	1.0
29	1.3	1.5	1.5	1.5	-	1.5	1.3	1.1	.9	1.0	1.1	1.0
30	1.3	1.5	1.5	1.5	1.5	1.7	1.3	1.2	.9	1.0	1.1	1.0
31	1.3	1.5	1.5	1.5	1.5	1.6	1.2	1.2	1.0	1.0	1.1	1.0
Total	38.6	43.9	43.4	43.8	40.2	44.2	41.1	36.5	30.6	28.8	66.9	32.4
Mean	1.25	1.46	1.40	1.41	1.44	1.43	1.37	1.28	1.02	0.93	2.16	1.08
Max.	1.4	1.6	1.5	1.5	1.5	1.7	1.5	1.3	1.2	1.0	2.8	1.1
Min.	1.2	1.4	1.3	1.3	1.3	1.3	1.3	1.0	0.9	0.9	0.9	1.0
Ac-ft	77	87	86	87	80	88	82	73	61	57	133	64
Calendar year 1960 :	Max 1.9 Min 0.9 Mean 1.46 Acra-feet 1,060											
Water year 1960-61 :	Max 2.8 Min 0.9 Mean 1.34 Acra-feet 974											

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 8, 9, Aug. 23 to Sept. 14.

BUENA VISTA LAKE BASIN

11-1905. Isabella Reservoir near Isabella, Calif.

Location--Lat 35°38'50", long 118°28'50", in SW¹/₄ sec. 19, T. 26 S., R. 33 E., in main control tower near left abutment of main dam on Kern River, 1.5 miles north of new town of Isabella and 2.8 miles upstream from Erskine Creek.

Drainage area--2,093 sq mi.

Records available--October 1953 to September 1961.

Gage--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes--Maximum contents during year, 53,100 acre-ft June 17, 18, 19 (elevation, 2,532.21 ft); minimum, 18,360 acre-ft Sept. 30 (elevation, 2,514.60 ft).

1953-61: Maximum contents, 455,200 acre-ft June 28, 1958 (elevation, 2,594.83 ft); minimum since appreciable storage was first attained, 4,330 acre-ft Apr. 21, 1955.

Remarks--Reservoir is formed by earth-fill dam with side-hill spillway and auxiliary earth-fill dam, completed in 1954; regulation of discharge from reservoir began Apr. 15, 1954. Minor detention storage occurred during construction of dam prior to this date, the maximum being 1,750 acre-ft on Apr. 27, 1953. Usable capacity, 569,700 acre-ft between elevations 2,470.0 ft (invert of main outlet) and 2,605.5 ft (spillway crest) above mean sea level. Dead storage, 326 acre-ft, is not available for release. Surge flood control storage, 271,800 acre-ft between ungated spillway crest and elevation 2,627.0 ft (maximum design spillway flood pool). Figures given herein represent total contents. Water is released to Kern River through tunnel in left abutment of main dam and to Borel Canal through concrete conduit in auxiliary dam.

Cooperation--Record of contents furnished by Corps of Engineers and reviewed by Geological Survey.

Capacity table (elevation, in feet,
and contents, in acre-feet)

2,510	13,090
2,520	26,430
2,530	47,320
2,540	77,330

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30,540	29,420	29,380	29,100	28,900	28,600	28,210	35,200	47,320	49,170	30,510	24,100
2	30,430	29,400	29,360	29,100	28,890	28,580	28,250	35,500	47,570	48,650	29,950	23,890
3	30,300	29,430	29,340	29,080	28,870	28,570	28,370	35,830	47,740	48,090	29,420	23,680
4	30,170	29,450	29,340	29,080	28,870	28,550	28,580	36,180	47,990	47,570	28,920	23,420
5	30,060	29,510	29,320	29,080	28,850	28,550	28,970	36,440	48,340	46,990	28,530	23,090
6	29,970	29,510	29,300	29,060	28,830	28,640	29,360	36,730	48,830	46,490	28,160	22,740
7	29,930	29,510	29,290	29,060	28,830	28,620	29,750	36,980	49,400	45,990	27,810	22,360
8	29,910	29,490	29,290	29,060	28,830	28,600	30,080	37,240	49,950	45,560	27,430	21,960
9	29,900	29,470	29,290	29,040	28,820	28,600	30,260	37,500	50,500	45,100	27,040	21,560
10	29,880	29,470	29,290	29,040	28,820	28,570	30,450	37,760	51,020	44,570	26,670	21,120
11	29,860	29,450	29,290	29,030	28,800	28,530	30,600	38,020	51,420	44,010	26,530	20,670
12	29,820	29,490	29,300	29,030	28,780	28,440	30,750	38,260	51,770	43,440	26,770	20,230
13	29,800	29,510	29,300	29,010	28,760	28,320	31,010	38,470	52,150	42,740	26,750	19,950
14	29,780	29,530	29,300	29,010	28,760	28,210	31,220	38,690	52,500	42,090	26,650	19,790
15	29,770	29,540	29,300	28,990	28,740	28,270	31,430	38,930	52,820	41,420	26,430	19,620
16	29,750	29,580	29,290	28,990	28,740	28,230	31,720	39,190	53,040	40,780	26,190	19,440
17	29,730	29,600	29,270	28,970	28,730	28,210	32,190	39,570	53,100	40,110	25,870	19,280
18	29,710	29,620	29,270	28,960	28,710	28,180	32,710	40,070	53,100	39,440	25,520	19,270
19	29,690	29,580	29,270	28,960	28,690	28,160	33,180	40,560	53,100	38,780	25,290	19,230
20	29,670	29,530	29,270	28,940	28,690	28,140	33,500	40,990	53,020	38,060	25,120	19,150
21	29,660	29,530	29,270	28,920	28,670	28,140	33,770	41,420	52,910	37,390	24,970	19,060
22	29,640	29,540	29,250	28,920	28,650	28,120	33,990	41,840	52,690	36,730	24,890	18,960
23	29,620	29,530	29,230	28,900	28,660	28,110	34,170	42,390	52,470	36,100	24,950	18,860
24	29,580	29,490	29,230	28,890	28,660	28,110	34,350	42,980	52,180	35,410	25,070	18,800
25	29,560	29,420	29,210	28,890	28,640	28,140	34,510	43,580	51,770	34,770	25,160	18,790
26	29,530	29,400	29,210	28,920	28,640	28,160	34,630	44,280	51,390	34,110	25,130	18,710
27	29,510	29,400	29,190	28,940	28,620	28,160	34,730	44,950	50,990	33,500	25,100	18,640
28	29,490	29,380	29,170	28,940	28,620	28,180	34,850	45,560	50,630	32,900	24,990	18,550
29	29,450	29,380	29,160	28,920	-	28,210	34,950	46,140	50,210	32,300	24,840	18,430
30	29,450	29,380	29,140	28,920	-	28,210	35,040	46,590	49,660	31,660	24,650	18,360
31	29,430	-	29,120	28,900	-	28,200	-	46,990	-	31,030	24,390	-
†	2,521.71	2,521.68	2,521.54	2,521.42	2,521.26	2,521.02	2,524.60	2,529.87	2,530.92	2,522.57	2,518.76	2,514.60
*	-1,220	-50	-260	-220	-280	-420	+6,840	+11,950	+2,670	-18,630	-6,640	-6,030

Calendar year 1960..... † -42,490

Water year 1960-61..... † -12,290

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

11-1910. Kern River below Isabella Dam, Calif.

Location.--Lat 35°38'30", long 113°28'55", in S¹/₄ NW¹/₄ sec.30, T.26 S., R.33 E., on right bank 200 ft downstream from highway bridge, 0.6 mile downstream from Isabella Dam, and 1.6 miles southwest of Isabella.

Drainage area.--2,09¹/₂ sq mi.

Records available.--April 1945 to September 1961. Prior to October 1952, published as "below Isabella dam site."

Gage.--Water-stage recorder. Datum of gage is 2,435.87 ft above mean sea level (levels by Corps of Engineers). Prior to Mar. 12, 1952, water-stage recorder at site 0.6 mile upstream at different datum. Mar. 12, 1952, to July 26, 1953, staff gage at present site and datum.

Average discharge.--16 years, 737 cfs (533,600 acre-ft per year), adjusted for diversion since 1945 and for storage and evaporation since 1954.

Extremes.--Maximum discharge during year, 460 cfs Mar. 6 (gage height, 6.38 ft); minimum, 0.1 cfs Nov. 16, 17, 18, 23.

1945-53 (prior to regulation by Isabella Reservoir): Maximum discharge, 39,000 cfs Nov. 19, 1950 (gage height, 28.6 ft, from floodmark, present site and datum), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; minimum, 2.1 cfs (regulated) Nov. 27, 1951.

1954-61: Maximum discharge, 4,260 cfs June 28, 1958 (gage height, 15.14 ft); no flow Oct. 29, 1954, Mar. 22, 1960.

Remarks.--Records excellent except those below 20 cfs, which are good. Flow regulated by Isabella Reservoir beginning Apr. 15, 1954 (see preceding page). Borel Canal (see p. 509) diverts above station. Diversion for irrigation of about 3,500 acres between head of Isabella Reservoir and upstream stations. An additional 6,500 acres in reservoir bottom can be irrigated when reservoir stage is low.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.15	0.1	3.6	40
2.2	.2	4.0	63
2.3	.8	4.5	103
2.4	2.1	5.0	158
2.6	5.5	5.5	240
2.9	12	6.0	354
3.2	22		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	20	18	21	20	15	7.3	6.3	7.1	236	289	106
2	68	20	21	18	20	15	5.1	6.3	7.1	248	278	95
3	68	20	21	16	20	15	2.1	6.3	6.9	256	267	105
4	68	20	21	16	20	15	11	6.3	6.9	246	254	125
5	68	20	21	16	20	15	7.1	6.3	7.1	227	233	154
6	58	20	18	18	20	162	7.1	6.3	7.3	227	192	169
7	9.7	20	16	20	16	193	7.1	6.3	7.3	224	185	186
8	9.7	20	10	20	14	193	7.1	6.3	7.3	215	171	194
9	9.7	20	7.3	20	16	193	6.9	6.3	7.3	222	190	201
10	12	20	11	20	17	196	6.3	6.3	7.3	252	206	217
11	14	20	15	20	17	201	6.1	6.3	7.5	280	98	231
12	15	20	15	20	17	220	6.3	6.3	7.5	289	12	215
13	15	16	17	20	17	244	6.3	6.3	7.5	309	11	144
14	15	5.9	19	20	15	236	6.3	6.3	7.7	304	40	83
15	15	2	19	20	14	224	6.3	6.3	*7.5	306	92	*84
16	16	.1	23	20	14	222	6.3	6.3	7.5	316	125	88
17	*16	.1	22	*20	14	220	6.3	6.3	7.5	321	144	70
18	19	.1	17	20	14	97	6.3	6.3	7.7	321	161	17
19	20	35	*17	20	14	8.6	*6.3	*6.3	7.7	323	150	22
20	20	42	17	20	12	*8.8	6.5	6.3	14	*321	*103	44
21	20	*17	19	20	*9.5	8.8	6.5	6.3	45	323	70	44
22	20	2	21	20	9.3	12	6.5	6.3	7.5	326	48	48
23	20	18	21	20	9.3	14	6.5	6.3	10.9	328	3.5	50
24	20	41	21	20	8.8	5.6	6.3	6.3	144	331	3.1	36
25	20	41	21	20	8.8	1.6	6.3	6.3	162	333	3.2	14
26	20	27	21	20	8.8	1.6	6.3	6.3	123	321	3.7	43
27	20	15	21	20	8.6	5.5	6.3	6.3	116	304	11	43
28	20	15	21	20	9.0	8.4	6.3	6.7	139	284	44	49
29	20	15	21	20	-	4.3	6.3	6.7	177	286	76	53
30	20	15	21	20		5.0	6.3	6.7	222	300	98	30
31	20		21	20		7.1		6.7		297	110	
Total	824.1	543.6	574.3	605	403.1	2765.3	193.7	196.9	1465.7	8876	3671.5	2960
Mean	26.6	18.1	18.5	19.5	14.4	89.2	6.46	6.35	48.9	286	118	98.7
Max.	68	42	23	21	20	244	11	6.7	222	333	289	231
Min.	9.7	0.1	7.3	16	8.6	1.6	2.1	6.3	6.9	215	3.1	17
Ac-ft	1,630	1,080	1,140	1,200	800	5,480	384	391	2,910	17,610	7,280	5,870
Meant	154	219	191	172	180	213	386	473	400	139	245	127
Ac-ft†	9,490	13,030	11,720	10,560	10,020	13,100	22,960	29,100	23,790	8,530	15,060	7,570
Calendar year 1960: Max		1,200	Min	0.1	Mean	171	Mean†	392	Ac-ft	123,900	Ac-ft†	283,800
Water year 1960-61: Max		333	Min	0.1	Mean	63.2	Mean†	242	Ac-ft	45,780	Ac-ft†	174,900

* Discharge measurement made on this day.

† Adjusted for change in storage, diversion and evaporation.

BUENA VISTA LAKE BASIN

11-1925. Kern River near Democrat Springs, Calif.

Location.--Lat 35°31'20", long 118°40'40", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.28 S., R.31 E., on left bank 1.0 mile southwest of Democrat Springs and 2.1 miles upstream from Cow Creek.

Drainage area.--2,264 sq mi.

Records available.--July 1950 to September 1961. Prior to October 1954, records for Kern River and Kern River No. 1 conduit published separately.

Gage.--Water-stage recorder. Altitude of gage is 1,850 ft (from topographic map).

Average discharge.--11 years, 804 cfs (582,100 acre-ft per year), adjusted for storage.

Extremes (river only).--Maximum discharge, 603 cfs Nov. 14 (gage height, 7.41 ft); minimum daily 1.7 cfs Nov. 22-25.

1950-61: Maximum discharge, 40,000 cfs Nov. 19, 1950 (gage height, 30.7 ft). from rating curve extended above 8,700 cfs on basis of computation of peak flow over dam (basic data for computation furnished by Southern California Edison Co.); minimum daily, 0.1 cfs Oct. 30 to Nov. 12, 1955.

Remarks.--Records fair. Records of daily discharge given herein include flow of Kern River No. 1 conduit which diverts from left bank of Kern River in sec.13, T.28 S., R.30 E., for power development; water is returned to river 7 miles below station. Flow regulated by Isabella Reservoir beginning in 1954 (see p. 514). Many diversions above station for irrigation.

Cooperation.--Water-stage-recorder graph and 14 discharge measurements for river and water-stage-recorder graph and 12 discharge measurements for conduit furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*166	154	206	169	193	164	249	257	254	417	371	297
2	180	*153	217	162	196	*169	259	*255	254	413	366	*269
3	178	152	267	150	198	176	259	259	255	413	342	267
4	177	168	*226	*153	200	186	255	257	256	413	342	263
5	177	201	213	158	194	182	*261	256	*255	411	332	296
6												
7	184	230	214	159	193	174	264	258	254	*400	333	296
8	177	276	192	162	193	202	265	258	254	386	331	315
9	191	230	191	165	188	199	264	256	*254	362	328	312
10	172	225	197	164	188	199	263	258	252	356	328	316
11	162	219	191	165	193	198	264	257	253	355	326	328
12												
13	166	214	194	168	199	206	261	256	252	393	347	344
14	174	218	202	169	205	209	261	256	256	389	391	335
15	183	272	190	171	210	250	263	256	256	408	397	305
16	185	347	192	172	196	246	262	258	255	414	338	198
17	181	266	194	174	192	246	260	258	254	409	330	189
18												
19	173	248	190	173	191	235	259	257	263	412	331	193
20	165	242	192	171	190	226	260	256	253	411	326	191
21	161	217	187	171	183	235	259	256	256	413	329	159
22	160	174	180	172	176	221	258	255	253	412	325	119
23	159	255	180	171	174	222	258	263	331	408	295	130
24												
25	157	248	182	174	176	230	259	258	368	407	293	144
26	157	215	190	179	175	230	261	257	361	408	297	146
27	154	199	189	176	178	248	260	256	391	410	324	146
28	152	220	188	175	173	268	259	256	395	406	370	148
29	155	239	188	176	171	262	258	256	417	404	402	130
30												
31	154	239	184	189	173	248	257	254	416	407	398	115
32	155	215	184	224	174	233	260	254	370	*404	312	138
33	154	205	184	205	170	259	258	254	372	397	278	133
34	152	197	166	193	—	262	256	257	367	386	287	138
35	154	210	165	190	—	237	255	*256	412	386	299	141
36	154	—	178	*196	—	215	—	256	—	387	299	—
Total	5,169	5,648	6,013	5,396	5,242	5,857	7,787	7,948	9,339	12,397	10,367	6,501
Mean	167	222	194	174	187	221	260	256	311	400	334	217
Max.	191	347	267	224	210	258	265	259	417	417	402	344
Min.	152	152	165	150	170	164	249	254	252	355	278	115
Ac-ft	10,250	13,190	11,930	10,700	10,400	13,600	15,450	15,760	18,520	24,590	20,560	12,890
Calendar year 1960:				Max 1,650	Min 132		Mean 437		Acre-feet 317,000			
Water year 1960-61:				Max 417	Min 115		Mean 246		Acre-feet 177,800			

* Discharge measurement of river made on this day.

Note.--No gage-height record at conduit station Dec. 18-20, Dec. 29 to Jan. 4, Sept. 19-30.

BUENA VISTA LAKE BASIN

517

11-1930. Kern River below Kern Canyon powerhouse, Calif.

Location.--Lat 35°26'10", long 118°48'50", in NW 1/4 sec. 1, T.29 S., R.29 E., on left bank 1 mile downstream from Kern Canyon powerhouse, 1.3 miles upstream from Cottonwood Creek, and 11 miles northeast of Bakersfield.

Drainage area.--2,327 sq mi.

Records available.--October 1893 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to Oct. 1, 1953, published as "near Bakersfield".

Gage.--Water-stage recorder. Altitude of gage is 650 ft (from topographic map). Prior to Oct. 1, 1953, at site 11 miles downstream at different datum.

Average discharge.--68 years, 934 cfs (676,200 acre-ft per year) adjusted for storage.

Extremes.--Maximum discharge during year, 820 cfs Nov. 14 (gage height, 7.65 ft); minimum daily, 118 cfs Sept. 19.
1893-1961: Maximum discharge, 36,000 cfs Nov. 19, 1950 (gage height, 14.2 ft, site and datum then in use); minimum daily, 74 cfs Sept. 19, 1948.

Remarks.--Records good. Flow regulated by Isabella Reservoir beginning in 1954 (see p. 514), and three powerplants; many diversions above station for irrigation.

Cooperation.--Water-stage-recorder graph furnished by Pacific Gas & Electric Co., in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

5.6	110
5.7	125
6.0	180
7.0	500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	127	149	193	174	184	158	238	252	212	410	364	291
2	235	147	207	168	187	160	252	252	247	406	357	264
3	182	147	264	155	189	170	252	252	247	403	326	258
4	174	158	225	*160	191	180	252	252	249	406	329	252
5	170	191	207	155	184	176	258	252	249	406	322	285
6	*178	222	210	156	182	170	264	255	249	396	322	288
7	170	276	189	158	182	195	261	258	249	378	315	309
8	187	233	180	162	180	191	264	252	249	354	315	306
9	168	217	195	162	176	191	264	*252	252	343	315	309
10	156	212	189	162	182	189	261	252	252	343	312	322
11	158	207	193	164	187	189	261	249	a 252	378	336	340
12	166	210	207	168	191	198	*258	249	a 252	382	375	336
13	176	258	195	166	202	244	258	249	a 252	396	392	*294
14	178	248	195	164	184	244	255	249	a 252	403	371	191
15	174	235	195	168	180	241	252	249	a 252	403	315	180
16	168	225	187	170	180	230	252	247	*a 256	396	319	182
17	160	215	195	168	180	220	252	247	343	403	315	182
18	155	200	187	168	176	225	249	247	340	403	315	155
19	156	189	184	168	170	215	255	249	336	*399	*319	118
20	156	285	178	168	*166	*212	255	247	312	399	285	125
21	153	252	180	168	168	220	252	249	350	396	282	140
22	151	215	187	172	170	220	255	249	350	396	288	147
23	151	*195	182	168	170	235	258	249	378	396	315	144
24	149	210	184	168	166	261	255	247	385	396	357	149
25	153	230	184	166	164	255	255	247	403	392	403	124
26	153	235	184	184	164	244	252	247	403	392	396	119
27	151	212	184	217	166	220	255	247	364	392	309	137
28	151	202	184	198	162	249	255	247	361	392	273	134
29	149	193	174	187	-----	255	252	247	361	378	282	139
30	149	205	164	180	-----	230	249	247	403	375	288	140
31	149	-----	172	189	-----	222	-----	247	-----	378	288	-----
TOTAL	5,033	6,373	5,954	5,281	4,983	6,609	7,651	7,734	9,060	12,090	10,100	6,360
MEAN	163	212	192	170	178	213	255	249	302	390	326	212
MAX	235	285	264	217	202	261	264	258	403	410	403	340
MIN	127	147	164	155	162	158	238	247	212	343	273	118
AC-FT	10,020	12,640	11,810	10,470	9,880	13,110	15,180	15,340	17,970	23,980	20,030	12,610

CALENDAR YEAR 1960: MAX 1,690 MIN 125 MEAN 437 AC-FT 317,100
WATER YEAR 1960-61: MAX 410 MIN 118 MEAN 239 AC-FT 173,000

* Discharge measurement made on this day.

a No gage-height record.

BUENA VISTA LAKE BASIN

11-1955. San Emigdio Creek at San Emigdio Ranchhouse, Calif.

Location.--Lat 34°58'54", long 119°11'03", in San Emigdio Grant, Kern County, on left bank 50 ft downstream from unnamed tributary, 0.8 mile upstream from San Emigdio ranchhouse headquarters, and 13 miles west of Wheeler Ridge.

Drainage area.--48.8 sq mi.

Records available.--March 1959 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,617.57 ft above mean sea level.

Extremes.--Maximum discharge during year, 6,690 cfs Aug. 5 (gage height, 19.87 ft from floodmarks), from rating curve extended above 2 cfs on basis of slope-area measurements at gage heights 10.41 and 19.87 ft; minimum daily, 0.4 cfs for many days during August. 1959-61: Maximum discharge, that of Aug. 5, 1961; minimum daily, 0.4 cfs for many days during August 1961. Maximum stage known since at least 1938 (from information by local residents), that of Aug. 5, 1961.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Small diversions for stock and domestic use.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.6	1.1	0.8	0.8	0.6	0.6	0.6	0.5		0.4	0.6
2	.6	.6	1.2	.8	.8	.6	.6	.6	.5		.4	.6
3	.6	.6	1.2	.8	.8	.6	.6	.6	.5		.4	.6
4	.6	*.6	1.1	*.8	.8	.7	.7	.7	.5		.4	.6
5	.6	4.3	1.0	.8	.8	.7	.6	.7	.5		*300	.6
6	.6	*6.2	1.0	.8	.8	.7	.6	.8	.5		.4	*.6
7	.6	.9	1.0	.8	.8	.7	.6	.8	.5		.6	.6
8	.6	.8	.9	.8	.8	.7	.6	*.6	.5		.6	.6
9	.6	.8	.9	.8	.8	.7	.6	.5	.5		.5	.6
10	.6	.8	.8	.8	*.8	.7	.6	.5	.5		.5	.6
11	.6	.8	.8	.8	.8	.8	.6	.5	.5		.4	.6
12	.6	.9	.7	.8	.8	.8	.6	.5	.5		.4	.6
13	.6	.8	.7	.8	.8	*.8	.6	.5	.5		.4	*.6
14	.6	.8	*.8	.8	.8	.8	.6	.5	*.5		.4	.6
15	.6	.8	.6	.8	.8	*1.1	.6	.5	.5	0.5	.4	.6
16	.6	.8	.6	.8	.8	1.0	.6	.5			.4	.6
17	.6	.8	.6	.8	.8	1.6	.6	*.5			.4	.6
18	.6	.8	.6	.8	.8	.7	.6	.5			.4	.6
19	.6	.9	.6	.8	.8	1.3	.6	.5		(*)	.4	.6
20	.6	.9	.6	.8	.8	1.2	.6	.5			.4	.7
21	.6	.8	.8	.8	.7	1.1	.6	.5			.4	.7
22	.6	.9	.8	.8	.7	1.1	.7	.5			*12	.6
23	.6	.9	.8	.8	.7	1.2	.7	.5	.5		15	.6
24	.6	.8	.7	.8	.7	1.1	.6	.5			.7	.7
25	.6	*.8	.7	.8	.6	1.1	.6	.5			.6	.6
26	.6	1.3	.7	.8	.6	1.1	.6	.5			.6	.6
27	.6	1.1	.7	.8	.6	1.1	.6	.5			.5	.6
28	.6	1.0	.7	.8	.6	2.2	.6	.5			.4	.6
29	.6	1.0	.7	.8	.6	1.1	.6	.5			.4	.6
30	.6	.8	.8	.8	.6	.8	.6	.5			.4	.6
31	.6	.8	.8	.8	.6	.7	.6	.5			.4	.6
Total	18.6	34.1	24.2	24.8	20.0	20.0	18.1	17.1	16.9	15.5	343.2	18.3
Mean	0.60	1.14	0.78	0.80	0.75	0.96	0.60	0.55	0.56	0.50	11.1	0.61
Max.	0.6	6.2	1.2	0.8	0.8	2.2	0.7	0.8	0.6	-	300	0.7
Min.	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0.5	0.5	-	0.4	0.6
Ac-ft	37	68	48	49	41	59	36	34	34	31	681	36

Calendar year 1960 :

Max

6.2

Min

0.5

Mean

0.82

Acre-feet

595

Water year 1960-61 :

Max

300

Min

0.4

Mean

1.59

Acre-feet

1,150

* Discharge measurement made on this day.

Note.--No gage-height record June 14 to Aug. 25, Aug. 27, 28, Aug. 31 to Sept. 12.

TULARE LAKE BASIN

519

11-1970. Tulare Lake in Kings County, Calif.

Location.--Lat 36°03'10", long 119°49'35", on inside of levee at "Navy White House" 2.2 miles southwest of Chatom Ranch and 9.5 miles south of Stratford.

Records available.--March 1906 to September 1920 (incomplete), February 1937 to September 1961.

Gage.--Staff gage. Datum of gage is at mean sea level. March 1906 to September 1920 staff gages at various sites at different datums. February 1937 to September 1958 water-stage recorder or staff gage at various sites.

Extremes.--1906-61: Maximum elevation, 196.8 ft June 27, 28, 1941; lake dry or practically so for parts of 1906, 1914-16, 1919, 1937, 1946, 1950-53, 1955-56, 1958; lake dry for entire years 1920-22, 1924-36, 1947-49, 1954, 1957, 1959-61. Lake elevation of June 27, 28, 1941, was highest known since about 1890.

Remarks.--Lake has been dry since Aug. 11, 1958. Tulare Lake receives water from Kings, Kaweah, and Tule Rivers during high-water periods and occasionally from Kern River, Deer Creek, and several small intermittent streams. Its natural boundary has been greatly altered by construction of levees and other reclamation work. Elevation at lowest point of lakebed is now about 180 ft above mean sea level.

Cooperation.--Record furnished by Tulare Lake Basin Water Storage District.

TULARE LAKE BASIN

11-1978. Poso Creek near Oildale, Calif.

Location.--Lat 35°30'50", long 118°54'15", in SW¹/₄SW¹/₄ sec.6, T.28 S., R.29 E., opposite mouth of Hillvale Canyon, on highway bridge 10 miles northeast of Oildale and 12 miles northeast of Bakersfield.

Drainage area.--230 sq mi (revised).

Records available.--July 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 700 ft (from topographic map).

Extremes.--Maximum discharge during year, 8.5 cfs Jan. 26 (gage height, 1.97 ft); minimum, 0.9 cfs July 26.

1959-61: Maximum discharge, 87 cfs Mar. 29, 1960 (gage height, 3.78 ft); minimum, that of July 26, 1961.

The flood of Apr. 4, 1958, reached a stage of 8.6 ft, from floodmarks (discharge, 2,750 cfs, furnished by Kern County Land Co.).

Remarks.--Records good. Oil-field waste comprises most of low flow.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	4.8	5.4	6.1	6.1	4.4	3.7	2.7	4.1	1.4	1.5	2.5
2	2.7	4.7	5.5	6.1	6.2	3.8	3.7	2.4	3.2	1.6	1.5	2.4
3	2.7	5.0	5.7	6.0	6.2	4.2	3.5	2.4	3.8	1.9	1.6	2.0
4	3.1	*4.6	5.7	6.1	6.1	4.3	3.5	*2.5	2.9	1.6	1.6	1.8
5	3.5	5.0	5.7	6.1	6.1	4.1	3.5	3.1	2.7	1.4	1.6	1.9
6	3.6	6.1	5.7	6.2	6.1	4.2	3.5	3.1	2.9	1.5	1.6	1.7
7	3.9	5.1	5.7	6.2	6.1	4.1	3.6	3.1	2.1	1.5	1.6	1.6
8	3.9	5.0	5.5	6.1	6.1	3.9	3.6	3.3	2.0	1.5	1.6	1.5
9	3.9	5.1	5.8	6.1	6.2	3.8	3.5	*3.2	2.1	1.5	1.6	1.7
10	4.1	5.2	5.8	6.1	*6.2	3.6	3.6	2.9	2.0	1.5	1.6	1.9
11	4.1	5.0	5.7	6.1	6.1	3.5	3.5	2.9	1.9	1.5	1.5	1.6
12	4.1	5.2	5.5	6.0	6.1	3.6	*3.5	3.2	2.0	1.5	1.7	1.7
13	4.3	5.2	5.5	6.0	6.0	*3.5	3.3	3.3	1.9	1.5	1.7	*1.9
14	4.3	5.4	*5.4	6.1	6.2	3.5	3.1	3.0	*2.2	1.5	1.8	2.1
15	4.3	5.5	5.0	6.1	6.1	*3.6	3.0	2.7	2.2	1.5	1.7	1.9
16	4.7	5.5	5.2	6.1	6.0	3.2	3.0	2.9	2.0	1.5	1.9	2.2
17	4.6	5.5	5.2	6.1	5.0	3.3	2.8	3.0	1.9	1.6	1.7	2.3
18	4.1	5.5	5.0	6.1	5.2	3.3	2.8	3.0	1.8	1.7	1.9	2.1
19	3.6	5.7	5.1	6.1	5.1	3.5	2.9	3.1	1.9	*1.5	*1.7	1.9
20	4.1	5.5	5.2	6.0	5.1	3.6	2.8	3.1	1.9	1.5	1.8	2.2
21	3.8	5.7	5.2	6.0	5.5	3.6	2.9	3.1	1.9	1.5	1.9	2.9
22	3.6	5.7	5.2	6.1	5.4	3.5	3.0	3.0	1.9	1.8	2.0	3.1
23	3.5	5.5	5.2	6.0	5.4	3.5	3.3	3.1	1.5	1.6	1.9	3.1
24	3.6	5.5	5.8	6.1	5.4	3.6	3.5	3.2	1.5	1.5	2.1	2.9
25	3.7	*5.5	6.1	6.1	5.4	3.5	3.1	3.3	1.4	1.5	2.1	2.7
26	3.9	6.4	6.0	7.1	5.2	3.5	3.0	3.3	1.4	1.3	2.2	2.8
27	5.1	6.0	6.0	6.4	4.2	3.3	2.8	3.2	1.4	1.6	2.0	2.9
28	4.8	5.2	6.0	6.1	4.2	3.6	2.9	3.0	1.4	2.0	2.1	2.9
29	5.1	5.5	6.0	6.1	-	3.3	2.8	3.0	1.5	1.8	1.9	2.8
30	5.0	5.5	6.1	6.0	-	3.6	2.9	3.1	1.5	1.6	1.6	3.0
31	5.0	-----	6.1	6.1	-----	3.7	-----	3.7	-----	1.7	2.4	-----
Total	123.4	161.1	173.0	189.9	159.0	113.7	96.6	93.9	62.9	48.6	55.4	68.0
Mean	3.98	5.37	5.58	6.13	5.68	3.67	3.22	3.03	2.10	1.57	1.79	2.27
Max.	5.1	6.4	6.1	7.1	6.2	4.4	3.7	3.7	4.1	2.0	2.4	3.1
Min.	2.7	4.6	5.0	6.0	4.2	3.2	2.8	2.4	1.4	1.3	1.5	1.5
Ac-ft	245	320	343	377	315	226	192	186	125	96	110	135
Calendar year 1960: Max 6.4 Min 2.6 Mean 3.12 Acft 6,630												
Water year 1960-61: Max 7.1 Min 1.3 Mean 3.69 Acft 2,670												

* Discharge measurement made on this day.

11-2020. North Fork of Middle Fork Tule River near Springville, Calif.

Location.--Lat 36°10'29", long 118°41'41", in sec.23, T.20 S., R.30 E. (unsurveyed), on right bank 1.2 miles upstream from mouth, 2.2 miles downstream from Hossack Creek, and 7.4 miles northeast of Springville.

Drainage area.--39.5 sq mi.

Records available.--October 1939 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. January 1909 to December 1912 at site 2 miles upstream, records not equivalent. Prior to October 1954, records for river and conduit published separately.

Gage.--Water-stage recorder. Altitude of gage is 2,920 ft (from topographic map).

Average discharge.--22 years, 55.2 cfs (39,960 acre-ft per year), combined flow of North Fork of Middle Fork Tule River and Pacific Gas & Electric Co. conduit.

Extremes (river only).--Maximum discharge during year, 11 cfs Mar. 6 (gage height, 2.70 ft); minimum daily, 0.1 cfs Aug. 17.

1939-61: Maximum discharge, 12,400 cfs Dec. 23, 1955 (gage height, 12.47 ft, from floodmarks), from rating curve extended above 100 cfs on basis of critical-depth determination; no flow Sept. 10, 11, 1955.

Remarks.--Records good. Records of daily discharge presented herein include flow of Pacific Gas & Electric Co. conduit which diverts 2.5 miles upstream from station; water is returned to North Fork of Middle Fork Tule River 1.1 miles downstream from station.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements for the river and water-stage-recorder graph and 10 discharge measurements for the conduit furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	12	18	14	14	13	35	33	25	12	9.1	8.6
2	12	12	32	14	15	14	42	33	24	12	8.9	8.6
3	12	14	19	13	15	18	52	34	23	12	9.1	8.7
4	11	15	18	13	14	16	53	* 33	22	12	9.2	8.3
5	11	17	17	13	14	16	51	31	22	12	9.8	8.2
6	* 17	22	16	13	14	20	* 44	32	22	11	10	8.4
7	14	16	15	13	14	17	44	34	21	11	9.6	8.3
8	14	15	14	13	14	18	37	32	20	10	9.3	8.3
9	14	14	15	13	14	18	35	32	20	10	9.2	8.5
10	13	14	15	13	14	18	34	31	19	10	7.8	8.5
11	13	14	15	13	16	18	32	32	19	10	12	8.3
12	13	24	15	13	18	18	34	32	18	10	11	8.3
13	13	22	15	13	16	18	32	31	18	10	9.5	8.3
14	13	20	15	13	16	18	31	31	17	10	9.4	8.5
15	13	18	14	13	16	24	32	32	* 17	9.9	9.2	* 8.5
16	13	16	14	12	16	23	34	32	16	9.8	9.1	8.6
17	13	16	14	12	16	27	37	33	14	* 9.8	8.5	9.2
18	12	16	14	12	15	23	38	34	14	9.8	7.2	9.2
19	12	16	14	12	14	24	34	35	14	9.8	8.9	9.3
20	12	15	* 14	12	14	26	31	35	14	9.4	9.2	9.1
21	12	15	14	12	* 14	28	30	34	14	9.4	9.9	9.1
22	12	14	14	12	14	30	32	33	14	9.4	9.2	9.2
23	12	14	14	12	14	34	29	32	14	9.4	8.8	8.8
24	12	14	14	12	14	30	28	31	12	9.3	* 8.5	8.8
25	* 12	14	14	12	14	30	28	30	12	9.3	8.7	8.8
26	12	16	14	18	14	26	28	29	12	9.3	8.7	8.7
27	13	16	14	17	14	27	29	28	12	9.3	8.8	8.5
28	13	16	14	16	14	30	29	27	12	9.1	8.7	8.4
29	13	16	14	14	14	28	29	27	12	9.0	8.8	8.4
30	12	16	14	15	15	29	30	25	11	9.0	8.8	8.4
31	13	14	14	* 15	15	31	25	25	11	9.0	8.6	8.4
Total	393	479	477	412	411	710	1,054	973	504	312.0	283.5	258.8
Mean	12.7	16.0	15.4	13.3	14.7	22.9	35.1	31.4	16.8	10.1	9.15	8.63
Max.	17	24	32	18	18	34	53	35	25	12	12	9.3
Min.	11	12	14	12	14	13	28	25	11	9.0	7.2	8.2
Ac-ft	780	950	946	817	815	1,410	2,090	1,930	1,000	619	562	513
Calendar year 1960:				Max 99	Min 10	Mean 30.7	Acra-feet 22,300					
Water year 1960-61:				Max 53	Min 7.2	Mean 17.2	Acra-feet 12,430					

* Discharge measurement of river made on this day.

TULARE LAKE BASIN

11-2031. North Fork Tule River at Springville, Calif.

Location.--Lat 36°08'22", long 118°48'15", in SE $\frac{1}{4}$ sec.35, T.20 S., R.29 E., on left bank 0.1 mile upstream from Middle Fork Tule River, three-quarters of a mile northeast of Springville, and 12.9 miles northeast of Porterville.

Drainage area.--97.9 sq mi.

Records available.--February 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,040 ft (from topographic map).

Extremes.--Maximum discharge during year, 50 cfs Dec. 2 (gage height, 5.16 ft); no flow for many days.

1957-61: Maximum discharge, 2,070 cfs May 19, 1957 (gage height, 9.27 ft), from rating curve extended above 600 cfs; no flow for many days in 1958, 1960, 1961.

Remarks.--Numerous small diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.5	4.5	2.8	4.8	2.8	28	3.8	2.6	1.4	0	0
2	.1	*.2	3.1	2.7	5.2	2.7	30	5.1	2.6	1.4	0	.4
3	.1	.2	1.8	2.9	6.4	3.2	36	5.6	2.6	1.1	0	.6
4	*.1	.6	1.1	3.0	6.1	3.7	4.1	5.2	2.5	.4	.1	.3
5	.1	1.0	7.3	3.4	5.9	3.4	38	4.2	2.1	.5	.2	.3
6	.1	1.3	5.6	3.4	4.3	9.1	33	5.0	1.8	.6	.2	.3
7	.1	.5	5.2	3.3	*4.4	6.3	27	8.9	1.9	.9	.1	.4
8	.3	.3	*4.5	3.3	5.7	5.9	24	8.7	1.9	.7	.2	.7
9	.4	.4	3.9	*2.8	5.4	4.8	20	7.3	1.8	.6	.3	.8
10	.2	.7	3.8	2.8	4.8	4.8	16	5.9	1.8	.6	.6	.5
11	.1	.7	3.8	2.9	4.9	3.6	14	5.6	1.4	.8	.4	.3
12	.1	1.1	3.6	2.9	7.3	3.7	11	6.0	1.5	.8	.4	.2
13	.1	2.0	3.5	2.8	8.2	4.3	11	6.0	1.6	1.0	.1	.1
14	.1	*4.5	3.5	2.9	7.3	4.1	9.7	3.9	1.4	1.0	0	.1
15	.1	3.7	3.6	2.8	*5.8	15	7.6	3.0	1.1	1.2	0	*.1
16	.3	2.3	3.4	3.0	6.9	18	7.3	2.9	1.1	1.1	0	.1
17	.2	1.9	3.3	2.9	7.1	17	*6.5	2.8	.9	.6	0	.2
18	.1	1.9	3.3	2.2	6.6	17	6.3	3.0	.9	.2	0	.3
19	.2	2.0	3.3	2.1	6.0	15	6.2	3.8	.9	.1	0	.3
20	.2	2.1	3.3	2.0	5.7	15	5.4	9.2	1.0	0	0	.3
21	.3	2.0	3.1	1.9	5.5	*1.6	4.5	9.8	1.1	0	0	.3
22	.2	2.1	3.2	2.0	5.4	18	6.4	8.9	1.1	0	0	.8
23	.1	1.9	3.2	1.8	4.9	23	8.2	8.1	1.0	0	0	.9
24	.5	1.8	3.1	1.9	4.4	28	7.3	6.7	1.0	.1	.1	.8
25	.4	1.9	3.0	1.8	4.4	33	6.0	5.4	.9	0	.4	.5
26	.3	3.4	3.1	1.2	4.0	25	6.8	4.6	1.0	0	.5	.3
27	.6	5.4	2.7	1.4	3.9	23	6.6	4.3	.7	0	.6	.1
28	.5	3.9	2.8	6.4	3.0	36	7.6	3.9	1.3	.1	.3	0
29	.5	3.0	2.8	4.5	-	34	6.3	*3.2	1.6	.7	.2	0
30	.5	3.2	2.7	4.3	-	28	5.1	2.6	1.6	.1	.1	0
31	.5	-	2.6	*4.2	-	27	-	2.4	-	0	0	-
Total	7.5	56.5	161.7	111.7	154.3	450.4	442.8	165.8	44.7	15.5	4.8	10.0
Mean	0.24	1.88	5.22	3.60	5.51	14.5	14.8	5.35	1.49	0.50	0.15	0.33
Max.	0.6	5.4	31	14	8.2	36	41	9.8	2.6	1.4	0.6	0.9
Min.	0.1	0.2	2.6	1.8	3.0	2.7	4.5	2.4	0.7	0	0	0
Ac-ft	15	112	321	222	306	893	878	329	89	31	9.5	20
Calendar year 1960:				Max 225	Min 0		Mean 14.7		Acres-feet 10,670			
Water year 1960-61:				Max 41	Min 0		Mean 4.45		Acres-feet 3,230			

* Discharge measurement made on this day.

TULARE LAKE BASIN

523

11-2032. Tule River near Springville, Calif.

Location.--Lat 36°05'41", long 118°50'09", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.15, T.21 S., R.29 E., on left bank 15 ft upstream from highway bridge, 2 miles southwest of Springville, and 4 miles downstream from North Fork.

Drainage area.--229 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 800 ft (from topographic map).

Extremes.--Maximum discharge during year, 150 cfs Dec. 2 (gage height, 3.76 ft); no flow for many days.
1957-61: Maximum discharge, 3,400 cfs Apr. 3, 1958 (gage height, 6.70 ft); no flow for many days in 1961.
Flood in December 1955 reached a stage of 13.7 ft, from floodmarks (discharge, about 21,000 cfs).

Remarks.--Records good. Several small diversions above station for irrigation. Power is developed on Middle Fork and tributaries.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.56	0	3.0	11
2.6	.1	3.2	26
2.7	.7	3.4	57
2.8	2.8	3.6	101
2.9	6.3	3.8	164

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.1	9.0	2.9	2.5	3.2	2.4	7.7	3.2	2.4	0.4	*0	0.3
2	3.7	9.0	10.2	2.5	3.3	2.5	8.4	*3.3	2.2	.4	0	.3
3	4.3	1.1	6.7	2.6	3.6	3.1	10.1	3.5	2.0	.4	0	.2
4	3.7	1.8	4.7	2.6	3.6	3.1	11.6	3.6	1.9	.4	0	.3
5	4.0	1.8	3.9	2.5	3.3	2.6	11.0	3.3	1.8	.3	0	.4
6	8.7	4.3	3.6	2.5	3.2	4.8	9.4	3.5	1.8	.4	0	.8
7	1.6	3.3	3.3	2.5	3.1	3.6	8.9	5.0	1.5	.6	0	.4
8	1.2	2.5	3.2	2.4	3.1	3.3	7.9	4.8	1.5	.4	0	.1
9	1.4	2.3	2.9	2.4	2.9	3.3	6.9	4.3	1.3	.3	0	0
10	1.3	2.2	3.1	2.6	2.8	3.3	6.3	3.9	1.3	*.3	0	.1
11	1.2	2.1	2.9	2.5	2.9	3.1	5.5	3.7	1.2	.2	0	.1
12	1.2	2.5	2.9	2.4	3.9	2.8	4.8	3.9	1.2	.1	.7	.1
13	1.1	5.4	2.9	2.2	3.6	2.6	5.2	3.6	1.0	.1	.8	.1
14	1.1	4.0	2.9	2.2	3.3	2.4	4.7	3.7	9.5	0	.5	.1
15	1.0	3.5	2.9	2.2	3.2	5.0	4.5	3.5	8.0	0	.4	.3
16	9.5	2.8	2.9	2.2	3.3	5.7	4.3	3.3	6.3	0	.4	.4
17	9.0	2.5	2.8	2.2	3.3	5.4	4.5	3.1	4.3	0	.1	.5
18	7.6	2.8	2.8	2.2	3.2	5.4	4.7	3.1	2.8	*0	.1	.8
19	7.2	2.6	2.6	2.2	3.1	5.2	4.3	3.2	5.5	.2	0	.8
20	8.0	2.6	2.6	2.1	2.9	5.2	*4.0	4.5	4.3	.3	0	1.0
21	7.6	2.4	2.6	2.1	2.8	5.5	3.7	4.5	2.8	.2	0	.8
22	6.7	2.4	2.6	2.0	2.6	5.7	4.3	4.0	1.5	.2	0	.6
23	6.7	2.3	2.6	1.9	2.6	6.7	4.5	3.6	.8	0	0	.7
24	7.2	2.3	2.6	1.9	2.6	7.1	4.2	3.3	1.0	0	0	1.0
25	8.0	2.3	2.6	*1.9	2.5	8.4	3.7	3.1	.7	0	0	1.5
26	7.6	2.9	2.6	4.8	2.6	7.1	3.6	2.8	.7	0	0	*1.0
27	8.5	3.7	2.6	5.5	*2.6	6.5	3.6	2.6	.7	0	0	.5
28	9.0	3.1	2.5	4.0	2.5	8.7	3.5	2.6	*.5	0	0	1.0
29	9.5	2.9	2.5	3.5	-	8.2	3.3	2.6	.5	0	0	2.0
30	9.5	*2.9	*2.5	3.3	-	*7.3	3.2	2.5	.4	.1	0	1.1
31	*9.0	2.5	2.5	3.2	-	7.1	-	*2.4	-	0	*.6	-
Total	269.1	791.0	1,009	816	856	1,531	1,723	1,080	261.4	5.3	3.6	17.3
Mean	8.68	26.4	32.5	26.3	30.6	49.4	57.4	34.9	8.71	0.17	0.12	0.58
Max.	16	54	102	55	39	84	116	50	24	0.6	0.7	2.0
Min.	3.1	9.0	2.5	1.9	2.5	2.4	3.8	2.5	0.5	0	0	0
Ac-ft	534	1,570	2,000	1,620	1,700	3,040	3,420	2,140	519	11	7.1	34

Calendar year 1960: Max 711 Min 0.4 Mean 54.7 Acres-feet 39,710
Water year 1960-61: Max 116 Min 0 Mean 22.9 Acres-feet 16,600

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

TULARE LAKE BASIN

11-2045. South Fork Tule River near Success, Calif.

Location--Lat 36°02'30", long 118°51'25", in NW 1/4 sec. 4, T.22 S., R.29 E., on left bank 0.5 miles upstream from Crew Creek, 4 miles southeast of Success, and 5 miles upstream from mouth.

Drainage area--109 sq mi.

Records available--June 1930 to November 1954, February 1956 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 770 ft (from topographic map). Prior to June 26, 1951, at site 0.4 mile downstream at different datum.

Average discharge--29 years, 39.7 cfs (28,740 acre-ft per year); median of yearly mean discharges, 28.0 cfs (20,300 acre-ft per year).

Extremes--Maximum discharge during year, 75 cfs Dec. 2 (gage height, 4.21 ft); no flow for several months.

1930-1954, 1956-61: Maximum discharge, 7,100 cfs Nov. 19, 1950 (gage height, 8.35 ft, site and datum then in use; 11.36 ft, present site and datum), from rating curve extended above 3,100 cfs on basis of slope-area measurement of peak flow; no flow at times in most years.

Remarks--Records good except those below 0.5 cfs, which are fair. Diversions for irrigation of about 1,600 acres.

Rating table, (gage height, in feet, and discharge, in cubic feet per second)

2.7	0	3.2	3.6
2.8	.1	3.3	6.4
2.9	.4	3.5	14
3.0	.7	3.7	25
3.1	1.6	4.0	50

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	8.8	3.1	9.1	4.1	2.3	2.9	0.7		(*)	
2		0	4.1	2.9	9.1	4.1	2.4	3.1	1.5			
3		0	2.6	3.1	9.9	4.7	2.6	2.3	.9			
4		0	1.8	2.9	9.5	4.7	2.7	2.3	.7			
5		0	1.2	2.3	8.8	4.1	2.5	3.1	.6			
6		1.0	1.1	2.5	8.8	8.8	2.2	2.9	.4			
7		9.9	8.8	2.7	8.8	8.8	2.4	1.1	.4			
8		4.1	7.4	2.9	9.1	6.1	2.1	9.9	.3			
9		3.1	7.7	2.9	9.1	5.8	1.8	6.7	.2			
10		2.7	7.0	2.9	9.1	5.5	1.3	4.7	.2	(*)		
11		2.5	7.0	2.7	7.7	4.7	8.8	3.9	.1			
12		3.1	7.0	2.3	1.1	4.7	7.4	4.4	0			
13		2.2	6.7	2.3	8.4	4.4	8.8	4.4	0			
14		1.4	6.7	2.3	6.7	*4.4	8.0	4.4	0			
15		1.0	6.7	2.3	6.1	9.6	7.0	2.5	0			
16		6.1	6.7	2.5	6.7	1.6	6.4	1.9	0			
17		*5.2	6.7	2.5	7.4	1.5	6.1	1.2	0			
18		4.7	6.1	2.3	6.4	1.5	5.2	1.1	0			
19		5.0	5.0	1.5	6.1	1.3	5.0	1.2	0			
20		5.0	3.1	1.5	5.5	1.6	5.0	4.4	0			
21		4.4	3.1	1.4	5.5	1.6	4.1	3.9	0			
22		4.1	3.1	1.3	5.2	1.6	5.8	2.3	0			
23		3.9	3.4	1.1	*5.0	1.8	9.5	1.6	0			
24		4.1	3.6	9	4.4	1.8	7.4	1.4	0			
25		4.1	3.6	*9	3.9	2.4	6.7	1.2	0			
26		7.5	3.9	1.2	3.9	2.0	6.1	1.0	0			(*)
27		1.3	4.4	1.8	3.9	2.3	6.1	.8	0			
28		9.9	4.1	1.1	3.9	3.2	*5.0	.7	*0			
29		8.4	2.7	9.9	-	2.7	3.4	.7	0			
30		9.1	*2.7	9.5	-----	2.4	3.1	.5	0			
31		-----	3.1	9.5	-----	2.3	-----	*5	-----		(*)	
Total	0	175.9	247.1	125.9	199.0	400.5	347.9	92.9	6.0	0	0	0
Mean	0	5.86	7.97	4.06	7.11	12.9	11.6	3.00	0.20	0	0	0
Max.	0	22	4.1	18	11	32	27	11	1.5	0	0	0
Min.	0	0	2.7	0.9	3.9	4.1	3.1	0.5	0	0	0	0
Ac-ft	0	34.7	40.0	25.0	39.5	79.4	68.0	18.4	1.2	0	0	0

Calendar year 1960 : Max 215 Min 0 Mean 15.9 Acre-feet 11,570

Water year 1960-61 : Max 41 Min 0 Mean 4.37 Acre-feet 3,160

Peak discharge (base, 400 cfs)--No peak above base.

* Discharge measurement or observation of no flow made on this day.

TULARE LAKE BASIN

525

11-2046.8. Pioneer ditch below Success Dam, Calif.

Location.--Lat 36°03'34", long 118°55'22", in NW¼ sec.35, T.21 S., R.28 E., 0.1 mile downstream from Success Dam and 5.5 miles east of Porterville. Prior to Feb. 1, 1961, at site 0.5 mile downstream.

Records available.--April 1959 to September 1961. Prior to October 1960, monthly diversions only, published with Tule River near Porterville.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 549.00 ft above mean sea level (levels by Corps of Engineers). Prior to Feb. 1, 1961, at site 0.5 mile downstream at different datum.

Extremes.--1960-61: Maximum daily discharge, 29 cfs Apr. 15, 16; no flow for several months.

Remarks.--Records good except those for period of no gage-height record, which are fair. Ditch receives water from Success Reservoir (usable capacity, 80,000 acre-ft). In the 1961 water year less than 150 acre-ft was stored in Success Reservoir to maintain flow in Pioneer ditch.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	12	9.4	*8.7	16	0	*26	18			
2		0	12	9.4	8.9	16	0	*24	18			
3		0	11	9.4	*11	16	0	22	18			
4		0	6.9	9.1	11	18	0	24	16			
5		0	8.6	9.1	11	17	0	25	14			
6		0	11	9.1	9.8	16	*0	25	14			
7		0	12	9.1	9.1	16	0	26	12			
8		*7.9	15	9.1	9.1	14	0	25	9.1			
9		9.4	14	9.4	8.9	15	0	24	8.0			
10		17	13	9.4	*13	*20	13	24	7.1	(*)		
11		17	13	10	14	20	26	23	6.9			
12		17	13	9.7	16	19	*24	25	7.7			
13		10	*12	9.4	18	18	26	25	5.8			
14		12	11	9.4	17	17	27	25	5.8			
15		*6.9	12	9.4	16	18	29	*25	4.9			
16		7.7	11	9.4	15	21	29	25	3.8			
17		12	11	9.1	16	*22	28	25	2.1			
18		14	a 11	8.8	16	22	25	22	1.3			
19		14	a 11	8.8	15	11	26	21	1.6			
20		13	a 11	8.6	15	0	28	23	1.1			
21		13	a 11	8.3	16	0	27	23	0			
22		12	a 11	7.4	15	0	27	24	0			
23		11	a 11	6.7	15	0	28	23	0			
24		11	a 11	*6.4	15	0	19	23	0			
25		11	a 11	2.3	14	0	21	23	0			
26		12	a 11	0	14	0	26	22	*0			(*)
27		12	10	0	*15	0	26	21	0			
28		12	10	0	16	0	25	21	0			
29		*12	*10	0	-	0	24	*24	0			
30		12	9.4	5.1	-	0	24	23	0			
31		-	9.4	9.1	-	0	-	19	-		(*)	-
Total	0	284.9	346.3	230.4	378.5	332	528	730	175.2	0	0	0
Mean	0	9.50	11.2	7.43	13.5	10.7	17.6	23.5	5.84	0	0	0
Max.	0	19	15	10	18	22	29	26	18	0	0	0
Min.	0	0	6.9	0	8.7	0	0	19	0	0	0	0
Ac-ft	0	565	687	457	751	659	1,050	1,450	348	0	0	0
Calendar year 1960:			Max	-	Min	-	Mean	9.31	Acre-feet	6,760		
Water year 1960-61:			Max	29	Min	0	Mean	8.23	Acre-feet	5,970		

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

TULARE LAKE BASIN

11-2049. Tule River below Success Dam, Calif.
(Formerly published as Tule River at Worth Bridge, near Porterville)

Location.--Lat 36°03'23", long 118°55'22", in SW $\frac{1}{4}$ sec.35, T.21 S., R.28 E., on right bank 1,000 ft downstream from Success Dam and 5 miles east of Porterville.

Drainage area.--393 sq mi.

Records available.--October 1953 to September 1961. Prior to October 1960, published as "at Worth Bridge, near Porterville."

Gage.--Water-stage recorder. Datum of gage is 536.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to October 1960 at site 0.5 mile downstream at different datum.

Average discharge.--8 years, 124 cfs (89,770 acre-ft per year), adjusted for diversion to Pioneer ditch.

Extremes.--Maximum discharge during year, 127 cfs Apr. 4 (gage height, 4.42 ft); minimum, no flow for several months.

1953-61: Maximum discharge, 27,000 cfs Dec. 23, 1955 (gage height, 21.65 ft, site and datum then in use), from rating curve extended above 1,400 cfs on basis of studies of upstream peaks; no flow at times in 1954-57, 1959-61.

Remarks.--Records good except those for period of no gage-height record, which are fair. Minor regulation by Success Reservoir (usable capacity, 80,000 acre-ft; storage less than 150 acre-ft in 1961 water year). Pioneer ditch (see preceding page) diverts above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.9	0	2.2	14
1.0	.2	2.5	22
1.1	.6	3.0	40
1.3	1.6	3.5	63
1.6	3.7	4.0	94
1.9	7.5	4.5	134

Discharge, in cubic feet per second, water year October 1960 to September 1961

Discharge, in cubic feet per second, water year October 1960 to September 1961													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1		0	30	22	33	14	94	10	89				
2		0	92	22	33	14	98	*12	8.0				
3		0	103	22	32	14	111	14	7.1				
4		0	70	22	33	14	121	17	7.2				
5		0	53	22	32	14	123	17	6.9				
6		40	*41	22	*32	20	*114	15	6.5				
7		42	35	22	30	32	106	25	6.7				
8		20	27	22	30	26	104	36	6.9				
9		31	26	22	30	22	91	33	6.2				
10		11	26	21	25	17	69	28	6.0	(*)			
11		6	25	20	24	17	47	24	5.6				
12		9	25	20	25	16	38	20	4.5				
13		5	25	20	28	14	34	20	5.3				
14		51	24	20	27	13	27	19	4.2				
15		55	24	20	25	13	21	16	3.0				
16		37	24	20	24	22	21	13	1.9				
17		23	24	20	25	47	30	9.6	1.4				
18		18	24	20	25	54	30	9.3	1.2				
19		19	24	20	24	59	26	11	.6				
20		19	24	20	24	*82	21	15	.4				
21		19	23	19	21	74	18	16	1.2				
22		18	23	19	22	72	19	17	1.0				
23		17	23	18	20	77	26	15	.8				
24		16	23	*18	19	87	31	10	.5				
25		16	22	22	18	95	26	6.7	.3				
26		19	22	34	18	97	23	8.7	*.1			(*)	
27		21	22	80	16	85	21	9.4	.1				
28		25	22	64	14	*97	20	8.4	0				
29		25	*22	50	—	110	18	*21	0				
30		25	22	39	—	98	13	24	0				
31		—	22	34	—	93	—	13	—	(*)			
Total	0	587	992	816	709	1,509	1,541	513.1	102.5	0	0	0	
Mean	0	19.6	32.0	26.3	25.3	48.7	51.4	16.6	3.42	0	0	0	
Max.	0	55	103	80	33	110	123	36	8.9	0	0	0	
Min.	0	0	22	18	14	13	13	6.7	0	0	0	0	
Ac-ft	0	1,160	1,970	1,620	1,410	2,990	3,060	1,020	203	0	0	0	
Mean†	0	28.9	43.3	38.8	38.9	59.4	69.1	40.2	9.26	0	0	0	
Ac-ft†	0	1,720	2,660	2,080	2,160	3,650	4,110	2,470	551	0	0	0	
Calendar year 1960: Max			810	Min	0	Mean	60.9	Mean†	70.3	Ac-ft	44,240	Ac-ft†	51,000
Water year 1960-61: Max			123	Min	0	Mean	18.5	Mean†	26.8	Ac-ft	13,430	Ac-ft†	19,400

* Discharge measurement or observation of no flow made on this day.

† Adjusted for diversion in Pioneer ditch.

Note.--No gage-height record Oct. 1 to Dec. 4.

TULARE LAKE BASIN

527

11-2065. Middle Fork Kaweah River near Potwisha Camp. Calif.

Location.--Lat 36°30'45", long 118°47'25", in NW¼ sec.25, T.16 S., R.29 E., on right bank 0.7 mile southeast of Potwisha Camp and 0.9 mile upstream from confluence with Marble Fork Kaweah River.

Drainage area.--100 sq mi.

Records available.--July 1949 to September 1961. Monthly discharge only for water years 1956, 1957, published in WSP 1735. Prior to October 1954, records for No. 3 conduit published separately.

Gage.--Water-stage recorder with thermograph attachment and concrete control. Altitude of gage is 2,100 ft (from topographic map). Prior to October 1953, at datum 0.70 ft higher.

Average discharge.--12 years, 157 cfs (113,700 acre-ft per year); median of yearly mean discharges, 138 cfs (99,900 acre-ft per year), combined flow of Middle Fork Kaweah and Middle Fork Kaweah River No. 3 conduit.

Extremes (river only).--Maximum discharge during year, 262 cfs Aug. 11 (gage height, 5.31 ft); minimum daily, 0.3 cfs Dec. 27 to

Jan. 25, Jan. 27 to Feb. 10.

1949-61: Maximum discharge, 46,800 cfs Dec. 23, 1955 (gage height, 29.0 ft, from floodmarks), by slope-area measurement of peak flow; minimum daily, 0.1 cfs Nov. 12-15, 1949.

Remarks.--Records good. Records of daily discharge given herein include flow of Middle Fork No. 3 conduit which diverts from left bank of Middle Fork Kaweah River 0.5 mile upstream from station in NE¼ sec.26, T.16 S., R.29 E. Flow from this conduit joins with that of Marble Fork Kaweah River No. 3 conduit, and the combined flow passes through Kaweah River No. 3 powerhouse of Southern California Edison Co.; water is returned to Kaweah River 2.7 miles downstream from confluence of Marble and Middle Forks.

Cooperation.--Water-stage recorder graph and 12 discharge measurements for river and water-stage-recorder graph and 13 discharge measurements for conduit furnished by Southern California Edison Co.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	13	61	21	32	27	111	179	150	*44	*15	22
2	11	13	102	20	33	29	133	182	146	41	15	21
3	10	16	50	20	33	42	178	188	151	41	15	20
4	10	23	43	19	31	39	207	165	155	45	15	19
5	*10	19	40	19	31	35	208	130	168	40	19	17
6	27	50	*38	18	31	40	183	127	182	36	32	* 16
7	22	37	34	19	30	36	185	141	194	34	36	15
8	20	36	35	18	30	42	140	150	198	31	34	14
9	24	36	33	*18	30	42	135	166	189	29	28	14
10	26	35	32	18	33	44	128	172	175	28	45	14
11	24	33	31	19	46	44	133	165	164	26	159	13
12	25	65	30	19	52	42	151	139	153	25	80	14
13	25	54	30	19	40	42	135	141	151	25	60	13
14	24	50	29	19	38	42	132	155	151	24	50	13
15	22	45	28	19	38	60	155	184	145	23	41	13
16	20	45	26	19	40	59	190	196	138	21	36	13
17	19	47	26	19	35	71	215	209	129	20	32	14
18	17	47	26	19	32	62	204	213	118	20	28	14
19	16	46	25	19	30	68	169	207	107	18	26	13
20	16	43	25	19	30	74	138	197	99	18	28	12
21	16	43	25	19	30	83	121	206	92	18	30	11
22	15	41	26	19	31	92	125	222	86	17	41	11
23	15	38	26	19	30	109	103	227	81	17	50	11
24	15	37	26	18	*29	100	97	240	75	17	39	11
25	15	38	25	18	30	91	100	*241	71	18	36	11
26	15	38	25	45	28	82	104	217	73	18	31	11
27	*15	39	25	*34	27	84	118	203	67	18	28	10
28	15	38	23	29	27	89	128	197	60	17	26	10
29	14	40	21	29	—	79	138	172	54	17	25	11
30	13	38	23	34	—	86	154	133	48	17	23	11
31	13	—	22	34	—	100	—	139	—	16	24	—
Total	540	1143	1011	678	927	1935	4418	5603	3770	779	1167	412
Mean	17.4	38.1	32.6	21.9	33.1	62.4	147	181	126	25.1	37.6	13.7
Max.	27	65	102	45	52	109	215	241	198	45	159	22
Min.	10	13	21	18	27	27	97	127	48	16	15	10
Ac-ft	1,070	2,270	2,010	1,340	1,840	3,840	8,760	11,110	7,450	1,550	2,310	817
Calendar year 1960:				Max 489	Min 9.9	Mean 90.9				Acres-feet 65,970		
Water year 1960-61:				Max 241	Min 10	Mean 61.3				Acres-feet 44,400		

* Discharge measurement of river made on this day.

TULARE LAKE BASIN

11-2065. Middle Fork Kaweah River near Potwisha Camp, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	63	59	53	50	44	41	36	35	45	44	49	46	53	46	55	51	50	46	69	65	73	68	70	66
2	64	60	53	51	44	42	36	35	45	44	49	47	54	48	53	48	52	48	68	66	72	68	70	66
3	64	60	53	51	43	41	36	35	45	44	49	48	53	49	52	50	56	49	69	66	72	69	69	66
4	63	59	51	48	42	41	36	35	46	45	48	46	54	49	52	48	58	53	71	66	70	69	69	65
5	63	60	51	48	42	41	36	35	46	44	46	45	54	50	53	45	59	54	70	66	71	68	68	65
6	63	61	50	48	41	39	36	35	47	45	46	45	54	48	50	47	58	55	69	64	74	68	68	64
7	63	60	48	46	39	37	37	36	46	46	47	44	51	48	50	45	60	54	69	63	70	67	67	63
8	60	57	48	47	37	36	37	36	47	45	48	45	49	43	53	46	60	56	70	65	72	68	65	61
9	57	54	48	46	36	36	37	36	47	45	49	46	50	46	54	50	59	54	72	67	74	70	65	60
10	54	51	47	45	37	36	38	37	48	46	50	47	50	47	54	49	60	54	74	68	73	62	66	62
11	53	49	46	45	37	37	38	37	49	48	50	48	52	47	54	49	60	55	75	70	65	61	67	63
12	52	49	49	46	37	37	39	38	47	45	51	48	51	47	49	45	61	56	74	70	66	62	64	62
13	51	48	46	45	37	36	39	39	46	45	52	49	48	43	51	46	63	57	74	70	69	65	64	60
14	52	49	46	45	37	37	39	39	47	45	52	49	51	45	54	48	64	59	75	70	70	66	64	59
15	51	48	45	43	39	37	39	38	47	45	51	44	53	47	56	50	64	58	74	69	70	65	63	59
16	52	49	43	42	38	38	39	38	46	46	47	44	54	49	56	50	65	60	75	69	69	65	64	60
17	52	49	44	42	38	37	39	38	46	45	45	42	54	49	57	51	65	60	74	70	69	64	64	62
18	52	49	44	43	39	38	39	39	47	45	45	42	52	48	57	52	65	59	73	69	70	65	62	57
19	53	49	45	44	39	38	40	39	46	44	47	42	49	44	55	48	65	60	74	69	71	67	62	57
20	53	50	45	42	39	38	40	39	47	44	48	43	46	42	54	47	65	61	73	70	73	68	63	58
21	53	50	43	41	39	38	40	40	48	45	49	43	47	42	57	51	67	63	73	68	75	70	64	61
22	54	51	43	42	39	38	41	40	49	46	50	44	48	44	57	54	66	64	73	68	73	69	64	61
23	53	51	43	42	39	38	41	40	49	46	47	45	43	40	55	52	67	63	75	69	72	68	64	60
24	53	51	43	42	40	39	42	41	48	46	45	43	47	38	57	50	67	64	74	70	72	68	64	60
25	53	50	43	42	40	39	43	42	48	46	43	40	50	42	57	52	69	66	73	69	72	67	65	61
26	52	51	44	42	39	38	45	43	48	46	42	39	52	43	55	51	68	65	74	69	70	66	65	61
27	54	50	42	41	38	38	44	42	48	46	43	41	54	45	55	51	68	66	74	70	68	65	64	61
28	52	50	41	40	38	37	43	42	48	46	45	42	53	47	54	49	69	66	75	70	68	65	65	61
29	52	49	41	41	37	35	43	42	-	-	47	41	55	48	53	50	69	64	74	70	69	65	64	61
30	52	50	41	40	36	35	44	43	---	---	49	42	55	48	53	48	69	63	74	69	70	66	64	60
31	53	50	---	---	36	35	45	44	---	---	50	44	---	---	53	48	---	---	73	68	70	66	---	---
Avg	55	52	46	44	39	38	40	39	47	45	48	44	51	46	54	49	63	58	73	68	71	66	65	61

TULARE LAKE BASIN

529

11-2080. Marble Fork Kaweah River at Potwisha Camp, Calif.

Location.--Lat 36°31'10", long 118°48'10", in SE $\frac{1}{4}$ sec.23, T.16 S., R.29 E., on left bank 0.1 mile north of Potwisha Camp and 0.3 mile upstream from confluence with Middle Fork Kaweah River.

Drainage area.--50.6 sq mi.

Records available.--March 1950 to September 1961. Monthly discharge only for March 1950, published in WSP 1315-A. Prior to October 1954, records for river and conduit published separately.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 2,150 ft (from topographic map).

Average discharge.--11 years, 90.2 cfs (65,300 acre-ft per year); median of yearly mean discharges, 78 cfs (56,500 acre-ft per year), combined flow of Marble Fork Kaweah River and Marble Fork Kaweah River No. 3 conduit.

Extremes (river only).--Maximum discharge during year, 160 cfs May 24 (gage height, 3.94 ft); minimum daily, 0.1 cfs Jan. 10-18, 22-25, 28, Feb. 1, 13-15, 17-21.
1950-61: Maximum discharge, 12,500 cfs Dec. 23, 1955 (gage height, 13.4 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; no flow Sept. 5-15, Oct. 24-28, 1953, Oct. 26-31, 1957.

Remarks.--Records fair. Records of daily discharge given herein include flow of Marble Fork Kaweah River No. 3 conduit which diverts from left bank of Marble Fork 0.3 mile above station; water is returned to Kaweah River 2.7 miles downstream from confluence of Marble and Middle Forks.

Cooperation.--Water-stage-recorder graph and 12 discharge measurements for river and water-stage-recorder graph and 13 discharge measurements for conduit furnished by Southern California Edison Co.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	3.3	2.4	8.5	1.4	1.5	*4.8	120	82	*8.6	*1.7	4.2
2	2.3	3.3	5.2	8.5	1.4	1.7	6.3	114	82	7.8	1.7	3.6
3	2.2	3.9	2.1	8.5	1.5	2.1	9.4	121	86	7.3	1.7	3.3
4	2.2	6.8	1.9	8.7	1.4	2.0	12.2	105	86	7.8	1.9	3.0
5	*2.2	5.9	1.8	7.9	1.5	1.6	11.7	81	99	8.0	2.0	2.7
6	3.1	1.3	*1.4	7.9	1.6	1.7	9.4	7.5	9.7	7.2	1.1	*2.5
7	1.6	1.3	1.4	8.5	1.5	1.4	8.8	7.8	9.7	6.8	3.0	2.5
8	7.0	1.3	1.4	7.7	1.4	1.7	6.1	8.3	9.5	6.2	9.1	2.3
9	5.2	1.3	1.4	*7.9	1.5	1.6	6.3	10.5	8.4	5.5	5.6	2.3
10	4.6	1.2	1.4	8.1	1.6	1.6	6.0	10.3	7.5	5.0	1.2	2.3
11	5.5	1.2	1.2	8.1	2.1	1.6	6.7	9.6	6.9	4.8	7.4	2.2
12	5.7	1.9	1.2	8.6	2.5	1.6	8.3	8.2	6.4	4.6	2.3	1.7
13	6.3	1.8	1.2	8.6	1.9	1.7	6.7	7.0	6.1	4.2	1.4	1.7
14	5.8	1.9	1.3	8.9	1.8	1.8	7.0	9.2	6.0	3.8	9.6	1.6
15	5.1	1.7	1.2	8.9	1.9	2.2	9.2	12.2	5.3	3.7	7.5	1.6
16	4.4	1.7	1.1	9.5	1.8	2.0	12.0	13.1	4.8	3.5	5.9	1.6
17	4.2	1.7	1.1	9.5	1.6	2.5	13.6	13.4	4.3	2.9	4.9	2.0
18	4.0	1.7	1.1	9.8	1.5	2.1	12.4	12.8	3.6	2.5	4.0	2.6
19	4.0	1.7	1.1	10	1.6	2.4	9.3	11.4	3.1	2.4	3.6	2.3
20	3.9	1.6	1.1	10	1.5	2.6	7.5	11.3	2.8	2.4	3.3	1.9
21	3.9	1.7	1.1	10	1.5	3.0	6.6	12.2	2.3	2.2	3.1	1.9
22	3.9	1.6	1.2	9.8	1.6	3.6	6.1	13.8	2.1	2.2	1.1	1.9
23	3.7	1.5	1.2	9.8	1.5	4.5	5.3	13.6	1.8	2.0	1.7	1.9
24	3.7	1.4	1.2	9.8	*1.6	3.8	4.8	13.7	1.6	2.2	9.9	1.9
25	3.7	1.6	1.1	10	1.6	3.2	5.1	*13.5	1.5	2.0	7.3	1.9
26	3.7	1.5	1.1	1.7	1.5	2.8	5.2	11.9	1.4	2.0	5.6	1.8
27	*3.7	1.3	1.1	*1.4	1.5	2.8	*6.3	10.6	1.3	2.0	4.7	1.8
28	3.8	1.4	1.0	1.4	1.4	3.0	7.7	10.4	1.1	2.0	4.2	1.7
29	3.6	1.6	8.7	1.4	—	2.8	8.8	8.6	1.0	1.9	3.8	1.8
30	3.5	1.4	1.0	1.4	—	3.4	9.7	6.1	9.1	1.6	3.6	1.8
31	3.3	—	1.0	1.5	—	4.4	—	7.0	—	1.7	3.6	—
Total	136.4	406.2	438.7	311.5	452	74.7	239.3	328.1	1526.1	126.8	300.3	66.3
Mean	4.40	13.5	14.2	10.0	16.1	24.1	79.8	106	50.9	4.09	9.69	2.21
Max.	16	19	52	17	25	45	136	138	99	8.6	7.4	4.2
Min.	2.2	3.3	8.7	7.7	1.4	1.4	4.8	6.1	9.1	1.6	1.7	1.6
Ac-ft	271	806	870	618	897	1,480	4,750	6,510	3,030	252	596	132
Calendar year 1960:				Max 293	Min 1.9	Mean 43.5	Acre-feet 31,550					
Water year 1960-61:				Max 138	Min 1.6	Mean 27.9	Acre-feet 20,210					

* Discharge measurement of river made on this day.

TULARE LAKE BASIN

11-2099. Kaweah River at Three Rivers, Calif.

Location.--Lat 36°26'38", long 118°4'09", in SW¹/₄ sec.13, T.17 S., R.28 E., on right bank opposite schoolhouse in Three Rivers, 0.25 mile downstream from North Fork Kaweah River.

Drainage area.--418 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 809.62 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,160 cfs Dec. 2 (gage height, 5.97 ft); minimum daily, 17 cfs Oct. 4.

1958-61: Maximum 3,400 cfs Feb. 16, 1959 (gage height, 7.36 ft), from rating curve extended above 530 cfs on basis of comparison with downstream peak discharge; minimum, 14 cfs Sept. 9, 10, 1959.

Flood of Dec. 23, 1955, reached a stage of 17.9 ft, from floodmarks.

Remarks.--Records good except those for period of no gage-height record, which are fair. Diversions for irrigation of about 200 acres above station. Power is developed on Middle and East Forks.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.7	16	3.5	174
1.9	23	4.0	268
2.1	34	4.5	380
2.4	53	5.0	530
2.7	78	5.5	770
3.0	109		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	26	*99	53	79	72	250	466	357	78	24	42
2	20	26	491	52	79	77	302	460	341	73	23	39
3	19	29	159	52	84	98	402	492	369	70	23	37
4	17	48	114	52	78	101	511	460	359	74	24	35
5	18	42	102	50	76	90	534	355	380	72	26	33
6	19	93	89	49	77	91	469	329	412	67	39	32
7	59	89	78	50	77	88	476	350	421	61	96	32
8	42	74	81	48	75	98	352	373	440	56	55	31
9	39	71	77	47	74	97	334	423	402	52	42	30
10	39	67	74	48	79	105	316	429	373	50	38	30
11	39	65	72	47	92	100	309	431	334	46	287	28
12	38	88	69	48	142	98	378	357	311	44	151	24
13	38	156	68	49	111	98	336	322	295	45	100	26
14	39	119	67	48	98	104	327	373	293	45	80	26
15	38	101	67	49	96	142	364	463	272	42	64	26
16	37	93	65	50	97	159	472	504	252	40	53	26
17	33	92	65	50	94	174	538	538	246	38	47	28
18	32	93	64	51	85	168	546	546	206	36	42	29
19	31	93	63	50	79	160	429	524	184	35	38	29
20	*29	87	62	50	80	165	355	508	171	33	41	29
21	29	85	63	50	78	186	311	520	159	32	39	23
22	29	82	65	50	80	205	316	566	146	30	66	26
23	27	77	65	49	79	240	276	566	136	29	96	26
24	28	75	65	49	*77	258	240	574	126	27	77	26
25	28	76	64	48	76	252	250	594	119	28	66	24
26	27	80	63	104	76	208	240	554	122	29	55	23
27	28	87	63	*124	74	208	*278	492	112	28	48	22
28	28	75	59	85	72	242	320	508	104	26	44	*21
29	28	82	*52	76	—	*205	341	*31	*91	25	41	22
30	26	80	58	82	—	203	364	341	85	24	42	21
31	26	—	59	82	—	230	—	313	—	*24	44	—
Total	952	2351	2702	1792	2564	4722	10936	14162	7618	1359	1911	846
Mean	30.7	78.4	87.2	57.8	84.4	152	365	457	254	43.8	61.6	28.2
Max.	59	156	491	124	142	258	546	594	440	78	287	42
Min.	17	26	52	47	72	72	240	313	85	24	23	21
Ac-ft	1,890	4,660	5,360	3,550	4,690	9,370	21,690	28,090	15,110	2,700	3,790	1,680

Calendar year 1960: Max 1,180 Min 16 Mean 227 Acre-feet 164,700

Water year 1960-61: Max 594 Min 17 Mean 142 Acre-feet 102,600

Peak discharge (base, 1,800 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-19.

TULARE LAKE BASIN

531

11-2101. South Fork Kaweah River at Three Rivers, Calif.

Location.--Lat 36°25'00", long 118°54'48", in SE¼ sec.26, T.17 S., R.28 E., on right bank 200 ft upstream from unnamed tributary, 0.5 mile upstream from mouth, and 1.8 miles southwest of Three Rivers.

Drainage area.--86.7 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 807.22 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 132 cfs Apr. 18 (gage height, 2.48 ft); no flow for parts of many days in September.
1958-61: Maximum discharge, 292 cfs May 11, 1960 (gage height, 3.05 ft); no flow at times in 1960, 1961.
Flood in December 1955 reached a stage of 9.5 ft, from floodmarks (discharge not determined).

Remarks.--Records good. Several small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

1.07	0.1	1.5	9.1
1.1	.2	1.7	21
1.2	.6	1.9	39
1.3	1.9	2.1	63
1.4	4.4	2.4	114

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	*1.3	1.1	4.4	8.1	6.6	26	86	43	2.2	0.2	0.1
2	.1	1.3	4.5	4.4	8.1	7.1	32	83	41	2.1	.1	.1
3	.1	1.4	2.1	4.4	8.1	8.1	39	86	38	2.1	.1	.1
4	.1	2.4	1.5	4.4	8.1	8.6	63	75	36	1.9	.1	.1
5	.1	3.1	1.2	4.4	7.6	8.1	66	59	32	2.2	.1	.1
6	.2	8.1	1.0	4.4	7.1	9.6	*55	54	31	2.2	.1	.1
7	.2	7.6	9.1	4.4	7.1	8.1	55	50	29	1.9	.1	.1
8	.2	5.3	8.1	4.4	7.1	8.1	42	56	26	1.6	.1	*.1
9	.1	4.4	*8.6	4.4	6.6	7.6	37	70	24	1.2	.1	.1
10	.2	4.4	8.1	4.4	6.6	7.1	37	74	22	.8	.1	.1
11	*.3	4.0	8.1	4.4	7.1	7.1	37	72	19	.6	.1	.1
12	.5	6.2	8.1	4.4	10	7.1	46	56	18	.5	.1	.1
13	1.0	12	7.6	4.4	8.6	6.6	42	50	16	*.5	.1	.1
14	1.4	10	6.6	4.4	8.1	7.1	39	63	15	.5	.1	.1
15	1.4	8.1	6.2	4.4	7.6	17	50	78	12	.4	.1	.1
16	1.4	6.6	6.2	4.4	7.6	17	68	86	*10	.3	.1	.1
17	1.4	6.6	6.2	4.4	7.6	18	92	90	9.1	.3	.1	.1
18	1.4	6.6	6.2	4.4	7.1	17	97	88	8.1	.2	.1	.1
19	1.3	6.6	5.8	4.4	6.6	15	69	86	7.1	.2	.1	.1
20	1.2	6.6	5.8	4.4	6.6	14	59	83	6.2	.2	.1	.1
21	1.2	6.2	5.8	4.4	6.2	15	48	95	5.7	.1	.1	.1
22	.9	6.6	5.8	4.4	6.2	17	49	90	4.0	.2	.1	.1
23	.8	6.2	5.8	4.4	6.2	21	38	85	3.6	.2	.1	.1
24	.9	6.2	5.8	*4.4	*6.2	24	31	75	3.4	.1	.1	.1
25	1.0	6.2	5.8	4.4	6.6	26	29	70	3.1	.1	.1	.1
26	1.2	8.6	5.8	1.5	6.6	22	28	66	2.8	.2	.1	.1
27	1.3	12	5.8	*1.6	6.6	24	31	60	2.6	.2	.1	.1
28	1.4	9.1	5.8	1.1	6.6	34	39	56	2.4	.2	.1	.1
29	1.6	8.6	*4.8	9.1	-	33	53	*51	2.2	.2	.1	.1
30	1.6	9.1	4.4	9.1	-	*2.6	70	48	2.2	.2	.1	.1
31	1.4	-	4.8	9.1	-	2.5	-	4.6	-	.2	.1	.1
Total	26.1	191.4	275.1	179.3	202.6	471.9	1,467	2,187	4,745	23.9	3.2	3.0
Mean	0.84	6.38	8.87	5.78	7.24	15.2	48.9	70.5	15.8	0.77	0.10	0.10
Max.	1.6	12	4.5	16	10	34	97	95	43	2.2	0.2	0.1
Min.	0.1	1.3	4.4	4.4	6.2	6.6	26	46	2.2	0.1	0.1	0.1
Ac-ft	52	380	546	356	185	336	2,910	4,340	941	47	6.3	6.0
Calendar year 1960 :	Max 208			Min 0			Mean 27.9			Acre-feet 20,280		
Water year 1960-61 :	Max 97			Min 0.1			Mean 15.1			Acre-feet 10,710		

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

TULARE LAKE BASIN

11-2105. Kaweah River near Three Rivers, Calif.

Location.--Lat 36°24', long 118°57', in SW¹/₄ sec.33, T.17 S., R.28 E., on left bank 2.5 miles downstream from South Fork and 3 miles southwest of Three Rivers Post Office.

Drainage area.--520 sq mi.

Records available.--April 1903 to September 1961 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 611.1 ft above mean sea level (river-profile survey). Prior to July 1, 1929, staff gage and July 1, 1929, to Jan 31, 1936, water-stage recorder, at site 2 miles upstream at different datum. Feb. 1, 1936, to Aug. 24, 1939, water-stage recorder at present site at datum 2.68 ft higher and Aug. 25, 1939, to July 9, 1951, at datum 1.68 ft higher.

Average discharge.--58 years, 554 cfs (401,100 acre-ft per year).

Extremes.--Maximum discharge during year 1,340 cfs Dec. 2 (gage height, 5.01 ft); minimum, 17 cfs Oct. 4.

1903-61: Maximum discharge, 80,700 cfs Dec. 23, 1955 (gage height, 22.24 ft), from rating curve extended above 3,500 cfs on basis of slope-area measurement of peak flow; minimum, 8.5 cfs Sept. 19, 1934.

Remarks.--Records good. Diversions for irrigation of about 460 acres above station. Power is developed on Middle and East Forks.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3 to Nov. 3)

2.3	16	3.3	220
2.5	32	3.6	370
2.7	59	4.0	590
3.0	126	4.5	920

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	26	90	67	95	83	290	548	395	80	27	46
2	20	26	575	65	92	85	345	548	390	76	28	40
3	*19	29	208	61	100	107	440	602	410	74	27	39
4	17	50	143	63	95	114	584	548	395	80	28	37
5	18	48	124	61	92	104	626	430	410	76	28	34
6	19	101	109	61	92	104	530	395	440	72	37	33
7	59	109	95	61	92	102	530	395	440	65	88	33
8	42	80	95	59	92	107	405	435	460	61	67	32
9	39	74	95	59	90	109	380	494	430	56	53	32
10	39	72	88	59	92	112	360	512	400	54	47	31
11	39	70	88	59	104	109	355	518	355	52	256	28
12	39	80	83	59	156	107	420	430	335	48	165	27
13	39	184	80	61	128	107	385	380	320	47	107	24
14	40	136	78	61	114	112	385	465	315	47	83	25
15	39	116	78	61	112	148	410	518	290	47	68	25
16	38	102	76	59	112	188	530	578	265	43	59	25
17	34	100	76	61	109	192	638	620	245	43	52	28
18	33	102	74	61	102	200	668	650	225	40	48	28
19	32	104	74	61	95	177	512	608	200	37	44	29
20	32	97	72	61	90	180	420	596	174	37	44	28
21	29	90	74	61	90	204	370	632	165	34	44	26
22	28	90	74	61	90	225	375	674	156	33	59	25
23	27	85	76	61	92	265	330	674	143	32	92	28
24	27	83	74	59	*90	300	285	680	133	31	80	26
25	27	83	74	59	88	290	295	692	124	31	68	25
26	28	90	74	97	88	245	285	656	126	32	61	23
27	28	104	74	*156	85	245	*320	566	121	32	54	22
28	29	88	72	104	83	290	360	578	112	30	50	*22
29	28	92	68	92	—	255	395	*482	*97	29	47	22
30	27	*90	*67	95	—	*235	430	400	90	27	*46	22
31	*26	—	68	95	—	265	—	360	—	*27	47	—
Total	963	2,601	3,196	2,160	2,760	5,366	12,658	16,664	8,161	14,733	2,004	865
Mean	31.1	86.7	103	69.7	98.6	173	422	538	27.2	47.5	64.6	28.8
Max.	59	184	575	156	156	300	668	692	460	80	256	46
Min.	17	26	67	58	83	83	285	360	90	27	27	22
Ac-ft	1,910	5,160	6,340	4,280	5,470	10,640	25,110	33,050	16,190	2,920	3,970	1,720

Calendar year 1960 : Max 1,560 Min 16 Mean 259 Acra-feet 188,200

Water year 1960-61 : Max 692 Min 17 Mean 161 Acra-feet 116,800

Peak discharge (base, 2,200 cfs).--No peak above base.

* Discharge measurement made on this day.

TULARE LAKE BASIN

533

11-2113. Dry Creek near Lemon Cove, Calif.

Location.--Lat 36°25'30", long 119°01'20", in NW¼ sec. 26, T.17 S., R.27 E., on left bank 400 ft downstream from Pogue Canyon, 1.3 miles upstream from mouth, and 2.8 miles north of Lemon Cove.

Drainage area.--80.4 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 515 ft (from topographic map).

Extremes.--Maximum discharge during year, 11 cfs Mar. 28 (gage height, 2.45 ft); no flow for most of time.
1959-61: Maximum discharge, 156 cfs Feb. 2, 1960 (gage height, 3.29 ft); no flow for most of each year.

Remarks.--Records good. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

2.22	0
2.3	1.0
2.4	6.4
2.5	18

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					(*)	0	2.8					
2						0	2.3					
3						0	1.9					
4						0	1.6					
5						0	1.6					
6						0	1.2					
7						0	1.2					
8						0	1.0					
9						0	.8					
10						0	.8					
11						0	.5					
12						0	.5					
13						0	.5					(*)
14						0	.5					
15						0	.5					
16			(*)			0	.3					
17						0	.2					
18						4.0	0					
19						4.0	0					
20						4.7	0					
21						4.0	0					
22						2.3	0					
23						1.9	0					
24						1.6	.1					
25						1.2	.5			(*)		
26						1.6	.3	(*)				
27						3.4	*.1					
28						7.4	0					
29						* 5.5	0			(*)		
30						4.0	0					
31	(*)					3.4						
Total	0	0	0	0	0	49.0	19.3	0	0	0	0	0
Mean	0	0	0	0	0	1.58	0.64	0	0	0	0	0
Max.	0	0	0	0	0	7.4	2.8	0	0	0	0	0
Min.	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	97	38	0	0	0	0	0
Calendar year 1960:			Max 63		Min 0		Mean 1.81		Acre-feet 1,320			
Water year 1960-61:			Max 7.4		Min 0		Mean 0.19		Acre-feet 135			

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

TULARE LAKE BASIN

11-2135. Kings River above North Fork, Calif.

Location.--Lat 36°51'45", long 119°07'25", in NE¼ sec.27, T.12 S., R.26 E., on left bank at Rogers Crossing, 0.9 mile upstream from North Fork and 2.9 miles south of Balch Camp.

Drainage area.--956 sq mi.

Records available.--October 1926 to December 1928, October 1931 to September 1961. Monthly figures only for some periods published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 1,003.5 ft above mean sea level (river-profile survey). March 1927 to December 1926, at site 0.5 mile downstream at different datum.

Average discharge.--32 years, 1,376 cfs (996,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,850 cfs May 25 (gage height, 4.31 ft); minimum, 93 cfs Oct. 1.

1926-28, 1931-61: Maximum discharge, 59,100 cfs Dec. 23, 1955 (gage height, 16.26 ft), from rating curve extended above 8,000 cfs on basis of slope-area measurement of peak flow; minimum, 79 cfs Oct. 13, 1934, Dec. 15, 1959.

Remarks.--Records excellent. No diversion or regulation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.5	83
.7	116
1.0	173
1.5	313
2.0	530
2.5	800
3.0	1,150
3.5	1,640
4.0	2,290
4.5	3,100

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	94	106	302	165	186	188	490	1,330	1,430	535	186	289
2	97	104	779	161	184	195	580	1,440	1,350	495	175	264
3	101	108	343	157	193	220	782	1,530	1,570	480	163	240
4	123	140	303	155	186	223	1,170	1,450	1,520	590	165	215
5	116	144	289	151	180	212	1,390	1,270	1,750	520	165	202
6	120	215	267	149	182	223	1,300	1,090	2,050	471	202	191
7	165	226	240	149	182	210	1,280	1,090	2,120	426	186	180
8	175	195	248	151	177	234	1,010	1,110	2,350	386	276	171
9	159	193	240	147	177	231	986	1,320	2,230	354	240	167
10	163	188	231	149	184	226	917	1,510	1,980	343	231	163
11	173	186	226	147	226	226	898	1,480	1,870	317	583	157
12	182	241	215	147	343	223	1,080	1,270	1,820	306	690	149
13	184	299	215	145	254	226	951	1,100	1,720	303	545	144
14	182	282	212	145	*242	240	965	1,200	1,700	293	444	138
15	173	282	205	143	234	299	1,080	1,460	1,650	276	358	134
16	157	279	200	143	234	303	1,400	1,710	1,610	264	328	136
17	155	279	198	140	223	358	1,720	1,380	1,520	251	289	149
18	149	276	195	138	210	320	1,840	2,150	1,460	242	264	144
19	145	276	191	138	202	331	1,400	1,960	1,370	231	237	138
20	144	260	188	138	205	343	1,170	1,680	1,280	226	254	136
21	140	242	186	140	198	354	986	1,880	1,210	215	279	132
22	136	240	188	138	198	382	944	2,180	1,100	208	362	130
23	132	234	188	136	198	458	839	2,420	1,030	198	782	129
24	130	228	186	134	195	475	758	2,410	965	191	951	127
25	129	228	184	*136	195	495	*788	*2,410	910	220	740	121
26	130	242	184	210	193	444	752	2,360	846	237	580	*116
27	130	240	*182	226	191	*466	770	2,150	*782	*248	471	114
28	*127	*226	180	184	186	458	806	2,250	740	234	404	111
29	118	237	169	177	—	412	898	2,020	674	220	350	116
30	109	237	171	186	—	422	1,010	1,580	600	208	317	120
31	106	—	171	186	—	426	—	1,320	—	195	310	—
Total	4,344	6,633	7,276	4,811	5,758	9,823	30,960	51,510	43,207	9,683	11,527	4,723
Mean	140	221	235	155	206	317	1,032	1,662	1,440	312	372	157
Max.	184	299	779	226	343	495	1,840	2,420	2,350	590	951	289
Min.	94	104	169	134	177	183	490	1,090	600	191	163	111
Ac-ft	8,620	13,160	14,430	9,540	11,420	19,480	61,410	102,200	85,700	19,210	22,860	9,370

Calendar year 1960: Max 4,160 Min 89 Mean 663 Acre-feet 481,000
 Water year 1960-61: Max 2,420 Min 94 Mean 521 Acre-feet 377,400

Peak discharge (base, 6,300 cfs).--No peak above base.

* Discharge measurement made on this day.

11-2140, North Fork Kings River below Meadow Brook, Calif.

Location.--Lat 37°04'53", long 118°51'43", in NE¼ sec.12, T.10 S., R.28 E., on left bank 800 ft downstream from Nichols Canyon, 0.6 mile downstream from Meadow Brook, 3.9 miles west of Blackcap Mountain, and 23 miles southeast of town of Huntington Lake.

Drainage area.--37.7 sq mi.

Records available.--October 1921 to September 1935, October 1956 to September 1961. Monthly discharge only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A. Records for Jan. 1-23, 1922, and Dec. 1-21, 1934, published in WSP 551 and 766, respectively, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 8,144.66 ft above mean sea level, unadjusted (levels by Pacific Gas & Electric Co.).

Average discharge.--19 years, 61.4 cfs (44,450 acre-ft per year).

Extremes.--Maximum discharge during year, 341 cfs May 22 (gage height, 3.89 ft); minimum, 0.8 cfs Oct. 1. 1921-35, 1956-61: Maximum discharge, 1,230 cfs May 22, 1958 (gage height, 5.21 ft); minimum recorded, 0.3 cfs Sept. 12-14, 1924.

Flood of Dec. 23, 1955, reached a stage of 5.85 ft, from floodmarks (discharge, 2,000 cfs).

Remarks.--Records excellent except those for periods of ice effect or doubtful gage-height record, which are fair. No regulation or diversion.

Cooperation.--Water-stage-recorder graph and five discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	0.8	2.3	32
1.6	1.3	2.6	56
1.7	2.2	3.0	105
1.8	4.0	3.5	208
2.0	12	4.0	385

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.6	10	5.1	b 6.0	b 11	4.4	154	* 136	14	1.6	8.0
2	.9	1.6	14	4.5	b 6.0	b 12	6.4	156	138	12	1.6	6.8
3	1.0	2.7	b 19	4.3	6.5	b 12	111	160	138	14	1.6	6.1
4	*1.0	5.1	b 16	4.3	6.5	b 13	138	136	127	15	1.6	5.1
5	1.1	5.1	b 15	4.3	6.5	13	150	107	140	14	7.7	4.8
6	2.6	7.2	b 14	4.0	6.8	13	142	98	160	12	25	4.3
7	3.5	9.3	b 13	4.0	6.8	13	114	109	169	10	29	3.8
8	1.8	12	b 12	3.8	6.8	13	96	112	158	8.8	15	3.3
9	1.9	12	b 12	3.8	7.6	13	93	142	144	8.0	11	3.1
10	3.1	11	b 11	b 3.8	9.3	13	86	156	123	6.8	9.3	2.7
11	3.1	9.7	b 10	b 3.8	11	12	99	140	110	6.5	55	2.6
12	3.3	8.4	b 10	b 3.8	14	13	104	114	102	5.8	51	2.3
13	3.1	6.5	b 10	4.0	12	b 16	98	107	98	5.4	34	2.1
14	2.7	b 8	b 9.5	b 4.0	11	b 19	98	154	93	5.1	25	1.9
15	2.3	b 10	b 9.0	b 4.0	11	20	134	191	87	4.8	17	1.8
16	2.2	b 12	b 8.0	4.3	b 10	22	175	208	81	4.3	14	1.8
17	2.1	b 13	b 7.5	4.5	b 10	22	186	222	74	4.3	11	6.5
18	2.1	b 13	b 7.3	4.5	9.3	21	160	222	66	3.8	84	5.1
19	1.9	b 13	6.8	4.8	8.8	22	123	194	58	3.3	7.6	4.0
20	1.8	12	6.8	4.8	8.8	23	96	182	52	3.1	7.2	3.3
21	1.7	b 12	b 7.0	4.8	9.7	28	80	211	48	2.7	8.4	3.1
22	1.7	11	b 7.2	4.5	13	38	72	235	43	2.4	27	2.9
23	1.7	9.7	b 7.5	4.3	11	43	65	239	38	2.1	43	2.9
24	1.7	b 9.0	b 7.5	4.3	11	31	67	235	34	2.3	36	2.7
25	1.7	b 8.5	8.0	4.5	11	31	66	227	35	4.8	27	2.6
26	1.7	8.0	b 7.2	4.5	10	30	63	191	32	3.1	20	2.4
27	1.7	9.7	b 6.6	b 4.8	9.7	28	66	182	28	* 2.7	15	2.3
28	1.7	12	6.1	b 5.0	9.7	28	76	177	24	2.4	13	2.6
29	1.7	12	5.8	b 5.5	-	31	93	156	20	2.1	10	2.7
30	1.6	9.7	5.4	b 5.5	-	*33	118	114	16	1.9	8.8	2.4
31	*1.6	-	5.4	b 6.0	-	39	-	116	-	1.8	9.3	-
Total	508	274.8	294.5	138.1	259.8	676	1077	5147	2572	1893	551.1	106.0
Mean	1.96	9.16	9.50	4.45	9.28	21.8	103	166	85.7	6.11	17.8	3.53
Max.	3.5	13	19	6.0	14	43	186	239	169	15	55	8.0
Min.	0.8	1.6	5.4	3.8	6.0	11	44	98	16	1.8	1.6	1.8
Ac-ft	121	545	584	274	515	1,340	6,100	10,210	5,100	375	1,090	210

Calendar year 1960: Max 380 Min 0.7 Mean 40.6 Acra-feet 29,490
 Water year 1960-61: Max 239 Min 0.8 Mean 36.6 Acra-feet 26,460

Peak discharge (base, 400 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Doubtful gage-height record Feb. 12, 13.

TULARE LAKE BASIN

11-2142. Fleming Creek near Blackcap Mountain, Calif.

Location.--Lat 37°05'55", long 118°51'40", in SE $\frac{1}{4}$ sec.36, T.9 S., R.28 E., on left bank 0.9 mile upstream from mouth, 4.2 miles west of Blackcap Mountain, and 23 miles southeast of town of Huntington Lake.

Drainage area.--15.0 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 8,590 ft (from topographic map).

Average discharge.--5 years, 27.6 cfs (19,980 acre-ft per year).

Extremes.--Maximum discharge during year, 155 cfs May 17 (gage height, 1.86 ft); maximum gage height, 1.96 ft Jan. 5 (ice jam); no flow Oct. 1.

1956-61: Maximum discharge, 452 cfs June 23, 1958 (gage height, 2.61 ft); maximum gage height, 3.18 ft Mar. 31, 1960 (ice jam); no flow Sept. 5-11, 1959, Aug. 21 to Oct. 1, 1960.

Flood of Dec. 23, 1955, reached a stage of 3.5 ft, from floodmarks (discharge, 800 cfs from rating curve extended above 160 cfs).

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion.

Cooperation.--Water-stage-recorder graph and seven discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage-height in feet, and discharge, in cubic feet per second)

0.4	0	0.8	12
.5	.4	1.1	36
.6	1.6	1.5	83
.7	5.6	1.7	116

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.3	6	2.5		3.1	20	75	53	4.5	0.2	1.9
2	1	.3	6	2.3			28	75	63	4.0	.1	1.6
3	1	.5	7	2.2			41	73	64	5.1	.2	1.2
4	* 1	.6	7.5		3.5		61	59	53	5.1	.2	1.1
5	1	.6	7.5			3.5	69	41	55	4.5	.8	.9
6	2	.9	7.5				69	34	58	3.1	2.2	.9
7	4	3.1	6.5				56	42	56	2.5	3.5	.8
8	4	2.8	6				47	49	52	2.2	3.5	.7
9	4	1.6	6	2.0	3.8		39	72	42	1.9	2.8	.6
10	4	1.1	6				34	82	36	1.6	3.1	.5
11	4	1.1	5.5			3.5	43	68	32	1.4	9.7	.5
12	4	2.0	5			4.0	38	47	31	1.4	13	.4
13	4	3.0				5	39	53	30	1.2	9.7	.4
14	4	3.5				6	43	65	28	1.1	6.3	.4
15	3	4.5	4.5		4.0	7	57	76	26	1.1	4.5	.4
16	3	5.0					82	89	26	.8	3.5	.4
17	3		4.3				89	108	25	.8	2.5	1.4
18	3		4.0	2.2		8	69	101	22	.7	1.9	1.2
19	3	6	3.8			9	48	82	20	.6	1.9	1.1
20	3						41	83	19	.6	1.6	1.1
21	3					10	36	101	16	.5	1.4	.9
22	3				3.7		35	111	15	.4	1.9	.9
23	3	5.5	3.5	2.5			33	111	13	.3	10	.9
24	3				3.5		31	104	12	.3	1.9	.8
25	3			* 2.6		12	* 31	97	14	.5	1.2	.7
26	3											
27	3	5		2.7	3.5		31	86	13	.4	6.9	.6
28	3			3.0	3.1		31	79	11	* .4	5.1	.6
29	3			3.0	3.1		37	73	9.7	.4	3.5	.6
30	3	6	3.2	3.0		13	44	69	7.6	.3	2.5	.6
31	* 3	6	3.0	3.3		* 14	58	47	6.3	.2	2.2	.6
			2.7	3.5		16		* 52		.2	2.2	
Total	81	109.4	147.0	73.1	103.7	238.1	1,380	2,304	908.6	481	137.9	24.7
Mean	0.26	3.65	4.74	2.36	3.70	7.68	46.0	74.3	30.3	1.55	4.45	0.82
Max.	0.4	-	7.5	3.5	-	16	89	111	64	5.1	19	1.9
Min.	0	0.3	2.7	-	3.1	3.1	20	34	6.3	0.2	0.1	0.4
Ac-ft	16	217	292	145	206	472	2,740	4,570	1,800	95	274	49
Calendar year 1960:	Max: 168			Min: 0			Mean: 16.7			Acres-feet: 12,130		
Water year 1960-61:	Max: 111			Min: 0			Mean: 15.0			Acres-feet: 10,880		

Peak discharge (base, 110 cfs)

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 12 to Feb. 25, Mar. 1-10, Mar. 13 to Apr. 2.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
4-16	7 p.m.	1.73	126	5-22	7 p.m.	1.85	153
5-17	7 p.m.	1.86	155				

11-2144. Post Corral Creek near Blackcap Mountain, Calif.

Location.--Lat 37°06'25", long 118°53'45", in NW¹ sec.35, T.9 S., R.28 E., on right bank 1.6 miles upstream from mouth, 6.2 miles west of Blackcap Mountain, and 20 miles southeast of town of Huntington Lake.

Drainage area.--27.9 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 8,145 ft, revised (from river-profile map).

Average discharge.--5 years, 48.4 cfs (35,040 acre-ft per year).

Extremes.--Maximum discharge during year, 237 cfs May 17 (gage height, 2.84 ft); minimum, 0.1 cfs Oct. 1.

1956-61: Maximum discharge, 1,270 cfs June 4, 1957 (gage height, 4.57 ft), from rating curve extended above 390 cfs; maximum gage height, 8.01 ft Apr. 16, 1958 (ice jam); no flow Dec. 30, 1959, to Jan. 1, 1960.

Flood of Dec. 23, 1955, reached a stage of 4.7 ft, from floodmarks (discharge, 1,400 cfs from rating curve extended above 390 cfs).

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion.

Cooperation.--Water-stage-recorder graph and seven discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	0.1	2.0	64
1.0	1.1	2.5	147
1.1	3.6	3.0	290
1.5	22		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.4	3.3		3.4	3.8	25	140	70	1.6	0.3	0.8
2	.2	.4	4.6		3.2	4.5	40	134	106	1.6	.3	.7
3	.2	.7	4.4	3.5	3.0	4.7	71	121	86	2.1	.3	.6
4	*.2	.8			3.0	4.7	87	101	70	3.3	.4	.4
5	.2	.7			3.0	5.0	90	80	70	2.6	1.3	.3
6	.6	1.1			3.2		98	68	63	2.1	2.6	.3
7	.7	1.6	4.0		3.4		90	76	57	1.6	1.1	.2
8	.6	1.8		3.2	3.6		74	103	48	1.3	.8	.2
9	.6	1.6			3.6	5.0	66	125	38	1.1	.7	.2
10	.7	1.0			4.0		59	134	33	1.1	.6	.2
11	.7	1.0			4.5		75	108	29	1.0	1.0	.2
12	.7	.8			4.5	5.5	76	80	26	1.0	1.0	.2
13	.6	1.0		3.1	4.2	7	66	80	23	.8	1.0	.2
14	.6	1.2			4.0	8	72	110	18	.8	.7	.2
15	.4	1.5			3.8	8	103	116	15	.8	.6	.2
16	.3	2.0			3.8	8	129	135	12	.8	.4	.2
17	.3	2.5			3.6		145	156	93	.7	.3	.8
18	.4	3.0		3.0	3.5	8.5	119	125	71	.7	.3	.7
19	.4	3.5			3.5		84	106	58	.6	.3	.4
20	.4	4.0	3.5		3.5		72	106	52	.6	.3	.2
21	.4	4.0		2.9	3.8	12	62	116	43	.4	7.0	1.6
22	.4	3.8		2.9	4.2	16	54	127	38	.4	12	1.3
23	.4	3.6		2.8	4.1	13	47	123	33	.4	36	1.0
24	.4	3.4		2.8	3.9	12	47	117	31	.4	12	.8
25	.4	3.2		* 2.7	3.9	11	* 44	101	31	.4	33	.7
26	.3	3.2		2.8	3.7	11	50	86	3.6	* .4	2.1	.6
27	.3	3.4		3.0	3.5	11	59	77	2.8	.4	1.6	.4
28	.3	3.6		3.1	3.5	12	74	69	2.6	.3	1.1	.6
29	.3	3.8		3.2	-	13	92	76	2.1	.3	.8	.7
30	.3	3.1		3.4		* 15	130	59	1.8	.3	.8	.7
31	*.3			3.5		17		* 68		.3	.8	
Total	12.8	65.7	113.8	97.1	102.9	266.2	2300	3223	822.6	30.2	91.8	37.1
Mean	0.41	2.19	3.67	3.13	3.68	8.59	76.7	104	27.4	0.97	2.96	1.24
Max.	0.7	4.0	4.6	3.5	4.5	17	145	156	106	3.3	36	8.8
Min.	0.2	0.4	3.3	2.7	3.0	3.8	25	59	1.8	0.3	0.3	0.2
Ac-ft	25	130	226	193	204	528	4,560	6,390	1,630	60	182	74

Calendar year 1960: Max 349 Min 0 Mean 32.8 Acres-feet 23,830
 Water year 1960-61: Max 156 Min 0.2 Mean 19.6 Acres-feet 14,200

Peak discharge (base, 400 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 13-27, Dec. 3 to Apr. 2.

TULARE LAKE BASIN

11-2146. Helms Creek below Courtright Dam, Calif.

Location.--Lat 37°04'40", long 118°58'05", in NW¼ sec.7, T.10 S., R.28 E., on left bank 500 ft downstream from Courtright Dam, 2.5 miles upstream from North Fork Kings River, and 17 miles southeast of town of Huntington Lake.

Drainage area.--39.7 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder and broad-crested weir with V-notch. Altitude of gage is 7,840 ft (from Pacific Gas & Electric Co. survey).

Extremes.--Maximum discharge during year, 767 cfs June 2 (gage height, 6.52 ft); minimum daily, 1.8 cfs Aug. 1. 1958-61: Maximum discharge, that of June 2, 1961; minimum daily, 0.9 cfs Oct. 30 to Nov. 6, 1958.

Remarks.--Records excellent except those for periods of indefinite stage-discharge relation, which are fair. Flow regulated since Oct. 17, 1958, by Courtright Reservoir (see p. 539). No diversions.

Cooperation.--Water-stage-recorder graph and 15 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

1.0	1.7	2.7	28
1.2	2.8	3.0	58
1.5	5.3	4.0	179
2.0	12	5.0	340
2.5	21	5.8	530
2.6	23	6.4	725

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	10	11	12	12	12	12	384	680	5.8	1.8	3.1
2	11	* 10	11	12	12	12	12	453	* 704	5.3	1.9	2.9
3	11	10	11	12	12	12	12	455	687	7.0	2.3	2.9
4	11	10	11	12	12	12	12	455	683	7.8	2.3	2.7
5	11	10	11	12	12	12	12	455	680	6.3	2.9	2.7
6	11	10	11	12	12	12	12	455	680	5.5	6.1	2.7
7	11	10	11	12	12	12	12	455	673	4.9	4.5	2.6
8	11	10	11	12	12	12	12	455	662	4.6	3.1	2.6
9	11	10	11	12	12	* 12	12	455	659	4.4	2.7	2.7
10	11	10	11	12	12	12	12	* 422	645	4.2	2.7	2.7
11	11	10	11	12	12	12	12	414	642	3.9	4.7	2.7
12	11	10	11	12	12	12	12	414	639	3.6	5.3	2.5
13	11	10	11	12	12	12	12	414	629	3.6	3.6	2.5
14	11	10	* 11	12	12	12	12	414	619	3.5	2.9	2.5
15	11	10	11	12	12	12	12	414	432	3.4	2.7	2.5
16	11	10	11	12	12	12	12	414	300	3.3	2.5	3.1
17	11	10	11	* 12	12	12	12	414	295	3.3	2.4	11
18	11	11	11	12	12	12	12	416	289	3.2	2.2	5.6
19	11	11	11	12	12	12	12	416	284	3.2	2.3	4.6
20	11	11	11	12	12	12	100	416	303	3.1	2.5	4.0
21	11	11	11	12	12	12	322	416	* 250	3.1	2.4	3.8
22	11	11	11	12	12	12	423	518	281	3.1	2.2	3.6
23	11	11	11	12	12	12	425	603	279	3.0	* 11	3.4
24	11	11	12	12	12	12	428	603	249	2.9	7.2	3.2
25	11	11	12	12	12	12	425	600	19	2.9	4.5	3.1
26	11	11	12	12	12	12	* 390	600	9.1	2.4	3.7	3.1
27	10	11	12	12	12	12	371	600	7.8	2.3	3.4	3.1
28	10	11	12	12	12	12	321	596	7.2	2.1	3.3	3.0
29	10	11	12	12	12	* 12	321	639	6.4	2.1	3.2	2.9
30	10	11	12	12	12	12	321	* 680	6.1	2.0	3.1	2.9
31	10	12	12	12	12	12	12	680	1.9	1.9	3.5	2.0
Total	336	313	349	372	336	372	4,075	11,125	12,299.6	117.7	128.7	100.7
Mean	10.8	10.4	11.3	12.0	12.0	12.0	136	488	410	3.80	4.15	3.36
Max.	11	11	12	12	12	12	428	680	704	7.8	2.2	11
Min.	10	10	11	12	12	12	12	384	6.1	1.9	1.8	2.5
Ac-ft	666	621	692	738	666	738	8,080	30,000	24,400	233	255	200

Calendar year 1960:

Max 12

Min 3.3

Mean 7.74

Ac-ft 5,620

Water year 1960-61:

Max 704

Min 1.8

Mean 92.9

Ac-ft 67,290

* Discharge measurement made on this day.

Note.--Stage-discharge relation indefinite Aug. 19-25, Sept. 22-30.

TULARE LAKE BASIN

539

Reservoirs in Tulare Lake basin, Calif.

11-2145.5. Courtright Reservoir.--Lat 37°04'40", long 118°58'05", in NW $\frac{1}{4}$ sec.7, T.10 S., R.28 E., at left end of dam on Helms Creek, 2.5 miles upstream from mouth, 4.6 miles east of Nelson Mountain, and 9.7 miles west of Blackcap Mountain. Drainage area, 39.7 sq mi. Records available, October 1958 to September 1961. Gage, water-stage recorder attached to surface follower. Datum of gage is at mean sea level (levels by Pacific Gas & Electric Co.). Maximum contents during year, 49,500 acre-ft Apr. 19, 20 (elevation, 8,124.0 ft); no contents June 26 to Sept. 30 (elevation, 7,900 ft), reservoir drained for repairs to dam. Maximum contents during period 1958-61, that of Apr. 19, 20, 1961; no contents June 26 to Sept. 30, 1961.

Reservoir is formed by rock-fill dam completed in 1958. Usable capacity, 129,900 acre-ft between elevations 7,902 ft (invert of tunnel) and 8,188 ft (crest of dam). Dead storage negligible. Record of contents furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

11-2148. Wishon Reservoir.--Lat 37°00'20", long 118°58'00", in NW $\frac{1}{4}$ sec.6., T.11 S., R.28 E., on right end of dam on North Fork Kings River, 1.2 miles north of Cliff Camp, 1.3 miles upstream from Cliff Camp gaging station, and 20 miles southeast of town of Big Creek. Drainage area, 177 sq mi. Records available, December 1957 to September 1961. Gage, water-stage recorder attached to surface follower. Datum of gage is at mean sea level (levels by Pacific Gas & Electric Co.). Maximum contents during year, 125,500 acre-ft June 19 (elevation, 6,546.9 ft); minimum, no contents Oct. 1 to Nov. 21 (elevation, 6,300.0 ft), reservoir drained for repairs to dam. Maximum contents during period 1957-61, 129,700 acre-ft July 29, 1958 (elevation, 6,551.1 ft); no contents Sept. 21 to Nov. 21, 1960.

Reservoir is formed by rock-fill dam completed in 1957. Capacity, 128,600 acre-ft between elevations 6,317 ft (bottom of slide gates) and 6,550 ft (operating crest of spillway gates). Dead storage negligible. Water is diverted to Haas powerhouse for power. Record of contents furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Month-end elevation and contents, water year October 1960 to September 1961

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Courtright Reservoir			Wishon Reservoir			
Sept. 30.....	8,119.8	46,000	-	6,300.0	0	-
Oct. 31.....	8,119.0	45,400	-600	6,300.0	0	0
Nov. 30.....	8,118.9	45,300	-100	6,341.0	544	+544
Dec. 31.....	8,118.6	45,000	-300	6,358.3	2,430	+1,890
Calendar year 1960.....	-	-	+18,000	-	-	-23,700
Jan. 31.....	8,118.1	44,600	-400	6,363.6	3,740	+1,310
Feb. 28.....	8,117.9	44,500	-100	6,371.8	6,380	+2,640
Mar. 31.....	8,118.5	45,000	+500	6,386.8	12,400	+6,020
Apr. 30.....	8,117.2	43,900	-1,100	6,446.8	43,500	+31,100
May 31.....	8,082.7	21,400	-22,500	6,524.6	104,000	+60,500
June 30.....	7,900	0	-21,400	6,541.7	119,600	+15,600
July 31.....	7,900	0	0	6,511.7	92,500	-27,100
Aug. 31.....	7,900	0	0	6,482.9	68,500	-24,000
Sept. 30.....	7,900	0	0	6,474.1	61,800	-6,700
Water year 1960-61.....	-	-	-46,000	-	-	+61,800

† Elevation at 12 p.m.

TULARE LAKE BASIN

11-2150. North Fork Kings River near Cliff Camp, Calif.

Location.--Lat 36°59'38", long 118°58'50", in NW 1/4 sec. 12, T. 11 S., R. 27 E., on right bank at Cliff Camp Bridge, 1 mile northwest of Cliff Camp, 1.2 miles downstream from Wishon Dam, and 2 miles downstream from Woodchuck Creek.

Drainage area.--181 sq mi.

Records available.--August 1921 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 6,143.95 ft above mean sea level, adjustment of 1912 (levels by San Joaquin Light and Power Corp). Prior to Nov. 24, 1922, at site 1 mile upstream at different datum.

Average discharge.--40 years, 352 cfs (254,800 acre-ft per year) adjusted for storage.

Extremes.--Maximum discharge during year, 67 cfs Nov. 15 (gage height, 3.59 ft); minimum daily, 6.0 cfs Apr. 11.

1921-57 (prior to regulation by Wishon Reservoir): Maximum discharge, 14,000 cfs Dec. 11, 1937 (gage height, 18.0 ft, from floodmarks), from rating curve extended above 4,200 cfs on basis of velocity-area studies; minimum, 0.6 cfs Dec. 30, 1930.

1957-61: Maximum discharge, 4,880 cfs May 28, 1958 (gage height, 11.75 ft); minimum daily, 0.8 cfs Dec. 14, 1957.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Wishon Reservoir since Dec. 5, 1957 and Courtright Reservoir since Oct. 17, 1958 (see preceding page). Water diverted for power from Wishon Reservoir by tunnel to Haas powerhouse since Dec. 10, 1958.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.5	4.5	3.2	30
2.7	8.0	3.5	57
2.9	13		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	14	a 17.0	7.6	9.2	7.6	7.6	8.4	11	7.8	8.0	7.6
2	17	*15	a 12	7.6	9.4	7.8	6.9	8.4	8.6	8.0	7.8	7.6
3	*17	22	a 9.6	7.8	9.2	8.4	6.9	8.4	8.2	8.2	7.8	7.6
4	16	a 26	a 9.4	8.0	8.4	8.6	6.7	8.4	7.8	8.2	7.8	7.6
5	16	a 24	a 8.8	8.0	8.2	8.4	8.4	8.2	7.6	8.0	7.8	7.6
6	22	a 35	a 8.0	8.0	8.2	8.8	7.6	9.2	7.6	7.8	7.6	7.6
7	22	a 32	a 7.8	8.0	8.0	9.0	7.6	12	7.6	8.0	7.5	7.5
8	21	a 35	a 7.8	8.0	7.8	9.4	6.7	11	7.6	7.8	7.3	7.5
9	19	a 33	a 7.6	8.0	8.2	9.4	6.6	9.0	7.6	7.8	7.3	7.5
10	18	a 30	a 7.6	8.0	8.4	* 8.8	6.4	7.8	7.6	7.8	7.3	7.6
11	18	29	a 7.8	8.0	24	7.8	6.0	7.8	7.8	7.8	7.5	7.5
12	18	a 43	a 7.8	8.0	14	7.5	6.9	7.8	8.0	7.8	7.3	7.5
13	18	a 40	a 8.0	8.0	10	7.6	8.2	7.8	8.2	7.8	7.1	7.3
14	17	a 47	a 8.0	8.0	7.8	7.6	7.8	7.6	8.4	7.6	7.1	7.3
15	16	55	* 8.0	8.0	7.5	9.4	7.5	7.6	8.4	7.6	6.9	7.3
16	15	a 50	8.0	8.0	7.6	11	7.3	7.6	8.4	7.6	6.9	7.8
17	a 15	a 54	8.0	8.0	7.1	12	7.3	7.6	8.4	7.6	7.1	8.2
18	a 15	a 54	8.0	* 8.0	6.7	9.0	7.5	7.6	8.2	7.5	7.8	7.6
19	15	a 50	8.0	7.6	6.6	9.4	8.2	7.8	8.4	8.4	8.0	7.6
20	15	43	8.0	7.6	6.6	9.8	8.2	8.4	* 8.4	8.4	7.6	7.8
21	15	a 30	8.0	7.6	7.1	8.2	8.2	8.0	8.4	8.2	7.8	8.4
22	15	a 20	8.2	7.6	6.9	7.5	11	7.8	8.4	8.2	7.6	8.4
23	15	a 6.6	7.8	7.6	6.9	11	11	8.0	8.4	8.2	* 7.8	8.4
24	15	7.1	7.3	7.6	7.1	12	13	8.0	8.4	8.2	7.8	8.4
25	15	7.6	7.1	7.6	7.8	11	15	8.0	8.4	* 8.2	7.8	8.4
26	15	a 8.4	7.1	9.6	7.8	9.4	14	8.2	8.4	8.4	7.8	8.4
27	15	a 8.8	7.3	9.0	7.6	11	* 13	8.2	8.2	8.4	7.6	8.4
28	15	a 8.6	7.3	8.8	7.6	11	10	8.4	8.2	8.2	7.6	8.4
29	14	a 7.8	7.1	8.6	—	9.8	8.6	8.8	8.0	8.2	7.8	8.2
30	14	a 8.0	7.3	8.6	—	9.0	8.4	9.0	7.8	8.2	7.8	8.2
31	14	—	7.6	9.2	—	* 8.4	—	11	—	8.0	7.6	—
Total	510	843.9	257.3	250.0	241.7	285.6	258.5	261.8	246.4	247.9	234.5	235.2
Mean	16.5	28.1	8.30	8.06	8.63	9.21	8.62	8.45	8.21	8.00	7.56	7.84
Max.	22	55	17	9.6	24	12	15	12	11	8.4	8.0	8.4
Min.	14	6.6	7.1	7.6	6.6	7.5	6.0	7.6	7.6	7.5	6.9	7.3
Ac-ft	1,010	1,670	510	496	479	566	523	519	489	492	465	467

Calendar year 1960 : Max 55 Min 5.6 Mean 16.9 Acra-feet 12,260
 Water year 1960-61 : Max 55 Min 6.0 Mean 10.6 Acra-feet 7,680

* Discharge measurement made on this day.

a No gage-height record.

TULARE LAKE BASIN

541

11-2158. Teakettle Creek at site No. 3, near Patterson Mountain, Calif.

Location.--Lat 36°57'40", long 119°01'35", in NE¼ sec.21, T.11 S., R.27 E., 1.6 miles east of Patterson Mountain, 1.8 miles upstream from mouth, and 2.9 miles north of Black Rock Reservoir.

Drainage area.--0.86 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder, 90° sharp-crested V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,701.4 ft above mean sea level (levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 6.23 cfs Dec. 1 (gage height, 5.447 ft); minimum daily, 0.08 cfs Sept. 6, 12-15. 1957-61: Maximum discharge, 18.4 cfs Feb. 16, 1958 (gage height, 6.24 ft); minimum daily, that of Sept. 6, 12-15.

Remarks.--Records excellent. No diversion or regulation above station.

Cooperation.--Records furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.13	0.17	1.86	0.24	0.27	0.38	0.84	0.77	0.52	0.19	0.11	0.09
2	.13	.17	.78	.24	.29	.39	1.00	.76	.51	.18	.10	.09
3	.12	.34	.39	.24	.29	.39	1.32	.74	.43	.22	.10	.09
4	.13	.31	.34	.24	.29	.36	1.51	.72	.39	.20	.11	.09
5	.13	.30	.31	.24	.29	.31	1.47	.68	.37	.19	.11	.09
6	.28	.32	.28	.24	.29	.35	1.43	.74	.36	.18	.10	.08
7	.19	.25	.28	.24	.28	.35	1.25	.83	.35	.17	.10	.09
8	.18	.26	.29	.24	.29	.36	1.16	.79	.34	.16	.10	.09
9	.21	.26	.29	.24	.33	.36	1.13	.69	.32	.16	.10	.09
10	.20	.25	.27	.25	.38	.37	1.05	.66	.31	.15	.11	.09
11	.20	.25	.27	.26	.78	.37	1.07	.63	.30	.15	.12	.09
12	.19	.31	.27	.25	.52	.39	1.03	.65	.29	.14	.12	.08
13	.18	.33	.27	.24	.42	.43	1.08	.63	.28	.14	.11	.08
14	.18	.31	.27	.25	.41	.45	.97	.60	.26	.14	.10	.08
15	.17	.28	.26	.25	.39	.43	1.00	.57	.25	.13	.10	.08
16	.17	.28	.26	.25	.38	.46	1.06	.55	.24	.14	.10	.19
17	.17	.28	.26	.25	.35	.39	1.06	.53	.24	.13	.10	.39
18	.16	.27	.26	.25	.32	.45	.99	.51	.24	.13	.09	.16
19	.16	.27	.26	.25	.30	.45	.89	.56	.24	.12	.10	.14
20	.16	.27	.27	.25	.37	.54	.80	.54	.23	.12	.10	.13
21	.16	.26	.28	.24	.38	.58	.75	.48	.22	.12	.10	.13
22	.16	.26	.29	.24	.37	.65	.76	.47	.22	.12	.09	.13
23	.17	.26	.29	.24	.35	.73	.69	.45	.21	.12	.09	.13
24	.17	.28	.29	.24	.36	.52	.69	.43	.21	.11	.09	.12
25	.17	.27	.28	.24	.36	.60	.74	.40	.21	.11	.10	.12
26	.17	.26	.28	.28	.34	.57	.86	.41	.21	.11	.09	.11
27	.18	.27	.28	.27	.33	.55	.86	.40	.20	.11	.10	.11
28	.17	.26	.27	.26	.35	.53	.86	.39	.20	.11	.10	.12
29	.17	.26	.25	.26	-	.54	.77	.45	.20	.11	.10	.12
30	.17	.26	.26	.28	-	.62	.77	.42	.19	.11	.09	.11
31	.17	-	.25	.28	-	.72	-	.51	-	.11	.09	-
Total	5.30	8.12	10.76	7.74	10.08	14.59	29.86	17.86	8.54	4.38	3.12	3.51
Mean	0.171	0.271	0.347	0.250	0.360	0.471	0.995	0.579	0.285	0.141	0.101	0.117
Max.	0.28	0.34	1.86	0.28	0.78	0.73	1.51	0.83	0.52	0.22	0.12	0.39
Min.	0.12	0.17	0.25	0.24	0.27	0.31	0.69	0.39	0.19	0.11	0.09	0.08
Ac-ft	10.5	16.1	21.3	15.4	20.0	28.9	59.2	35.6	16.9	8.7	6.2	7.0
Calendar year 1960:				Max 2.21	Min 0.12	Mean 0.494			Acres-feet 399			
Water year 1960-61:				Max 1.86	Min 0.08	Mean 0.340			Acres-feet 246			

TULARE LAKE BASIN

11-2158.1. Teakettle Creek tributary No. 7 near Patterson Mountain, Calif.

Location.--Lat 36°57'45", long 119°01'20", in NW¼NW¼ sec.22, T.11 S., R.27 E., 0.3 mile upstream from junction with Teakettle Creek, 1.9 miles east of Patterson Mountain, and 3.0 miles north of Black Rock Reservoir.

Drainage area.--0.09 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder and sharp-crested 90° V-notch weir. Altitude of gage is 6,800 ft (from topographic map).

Extremes.--Maximum discharge during year, 0.33 cfs Dec. 1 (gage height, 4.441 ft); minimum daily, 0.01 cfs for many days.
1957-61: Maximum discharge, 5.01 cfs Dec. 16, 1957 (gage height, 5.33 ft); minimum daily, 0.01 cfs for many days in each year.

Remarks.--Records excellent except those for periods of no gage-height record, which are poor. No regulation or diversion above station. Flow bypassing weir, measured at 0.003 cfs May 9, 0.004 cfs July 9, and 0.002 cfs July 14, 1960, is not included in daily figures.

Cooperation.--Records furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0.09	0.02	0.03	0.03	0.17	0.08	0.04	0.02	0.01	0.01
2			.04	.02	.03	.03	.16	.08	.04	.02	.01	.01
3			.03	.02	.03	.03	.15	.08	.04	.02	.01	.01
4			.03	.02	.03	.03	.14	.08	.04	.02	.01	.01
5			.03	.02	.03	.03	.13	.08	.04	.02	.01	.01
6			.02	.02	.03	.03	.12	.08	.04	.02	.01	.01
7		a 0.01	.02	.02	.03	.03	.11	.08	.04	.02	.01	.01
8			.02	.02	.03	.03	.10	.07	.04	.02	.01	.01
9			.02	.02	.03	.03	.10	.07	.04	a.02	.01	.01
10			.02	.02	.04	.03	.09	.06	.04	a.02	.01	.01
11			.02	.02	.07	.03	.08	.06	.03	a.02	.01	.01
12			.02	.02	.04	.03	.08	.06	.03	a.02	.01	.01
13			.02	.02	.03	.04	.08	.06	.03	a.02	.01	.01
14			.02	.02	.03	.04	.08	.05	.03	a.02	.01	.01
15			.02	.02	.03	.04	.07	.05	.03	.02	.01	.01
16	a 0.01	.01	.02	.02	.03	.03	.07	.05	.03	.02	.01	.01
17		.01	.02	.02	.03	.04	.07	.05	.03	.02	.01	.01
18		.01	.02	.02	.04	.04	.07	.05	.03	.02	.01	.01
19		.01	.02	.02	.03	.04	.06	.05	.03	.02	.01	.01
20		.01	.02	.02	.03	.04	.06	.05	.03	.01	.01	.01
21		.01	.02	.02	.03	.06	.06	.05	.03	.01	.01	.01
22		.01	.02	.02	.03	.06	.06	.04	.03	.02	.01	.01
23		.01	.02	.02	.03	.09	.06	.04	.03	.01	.01	.01
24		.01	.02	.02	.03	.10	.06	.04	.02	.01	.01	.01
25		.01	.02	.02	.03	.09	.06	.04	.02	.01	.01	.01
26		.02	.02	.02	.03	.08	.07	.04	.02	.01	.01	.01
27		.01	.02	.02	.03	.08	.08	.04	.02	.01	.01	.01
28		.01	.02	.02	.03	.08	.08	.04	.02	.01	.01	.01
29		.01	.02	.02	-	.08	.08	.04	.02	.01	.01	.01
30		.01	.02	.02	-	.10	.08	.04	.02	.01	.01	.01
31		-	.02	.03	-	.14	-	.04	-	.01	.01	-
Total	0.31	0.31	0.74	0.63	0.91	1.63	2.68	1.74	0.93	0.51	0.31	0.30
Mean	0.010	0.010	0.024	0.020	0.032	0.053	0.089	0.056	0.031	0.016	0.010	0.010
Max.	-	0.02	0.09	0.03	0.07	0.14	0.17	0.08	0.04	0.02	0.01	0.01
Min.	-	-	0.02	0.02	0.03	0.03	0.06	0.04	0.02	0.01	0.01	0.01
Ac-ft	0.6	0.6	1.5	1.2	1.8	3.2	5.3	3.5	1.8	1.0	0.6	0.6
Calendar year 1960 :			Max 0.38	Min 0.01	Mean 0.060	Acra-feet 43.9						
Water year 1960-61 :			Max 0.17	Min 0.01	Mean 0.030	Acra-feet 21.7						

a No gage-height record.

11-2158.2. Teakettle Creek tributary No. 2 near Patterson Mountain, Calif.

Location.--Lat 36°57'35", long 119°02'00", in SE 1/4 sec. 21, T.11 S., R.27 E., 0.8 mile upstream from junction with Teakettle Creek, 1.2 miles east of Patterson Mountain, and 2.8 miles north of Black Rock Reservoir.

Drainage area.--0.85 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder, sharp-crested 90° V-notch weir, and sharp-crested Cipolletti weir. Datum of gage is 6,903.4 ft above mean sea level (levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 3.61 cfs Dec. 1 (gage height, 3.162 ft); minimum, 0.04 cfs Sept. 12. 1957-61: Maximum discharge, 13.6 cfs May 30, 1958 (gage height, 3.98 ft); minimum, 0.04 cfs Dec. 5, 1957, Sept. 12, 1961.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. No regulation or diversion above station.

Cooperation.--Records furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.09	0.10	1.18	0.15	0.18	0.25	0.58	0.79	0.55	0.15	0.08	0.06
2	.09	.10	.63	.15	.19	.25	.72	.81	.53	.15	.07	.06
3	.09	.21	.28	.15	.18	.25	.95	.77	.45	.19	.08	.06
4	a.10	.18	.23	.16	.18	.22	1.05	.75	.41	.17	.08	.05
5	a.11	.19	.21	.15	.18	.20	1.00	.70	.39	.16	.08	.05
6	a.12	.23	.19	.15	.19	.23	.98	.70	.38	.15	.08	.05
7	a.12	.17	.19	.15	.18	.23	.81	.82	.36	.14	.08	.05
8	.13	.17	.18	.15	.18	.23	.80	.81	.34	.13	.07	.06
9	.14	.16	.18	.15	.20	.23	.80	.74	.33	.13	.07	.06
10	.14	.16	.17	.15	.22	.23	.74	.77	.30	.12	.08	.06
11	.14	.16	.18	.16	.50	.24	.83	.73	.30	.12	.09	.05
12	.14	.16	.17	.16	.35	.26	.75	.68	.28	.12	.08	.05
13	.14	.21	.18	.16	.27	.30	.76	.71	.27	.11	.07	.05
14	.14	.20	.17	.16	.25	.32	.76	.72	.25	.10	.07	.05
15	.13	.20	.17	.16	.24	.28	.85	.73	.24	.10	.07	.05
16	.12	.18	.17	.16	.24	.32	.96	.72	.22	.10	.07	.14
17	.12	.20	.17	.16	.22	.28	.99	.71	.22	a.10	.06	.32
18	.12	.19	.17	.16	.20	.28	.91	.69	.21	a.10	.06	.12
19	.11	.18	.17	.16	.21	.29	.79	.70	.20	a.09	.07	.10
20	.11	.17	.17	.16	.21	.35	.71	.66	.20	a.09	.07	.09
21	.11	.17	.18	.15	.22	.39	.68	.61	.19	.09	.06	.09
22	.11	.16	.17	.15	.23	.44	.65	.59	.18	.09	.06	.09
23	.10	.16	.17	.15	.22	.47	.58	.57	.18	.09	.06	.09
24	.10	.17	.17	.15	.22	.32	.60	.54	.17	.09	.06	.09
25	.10	.17	.17	.16	.22	.36	.63	.49	.17	.08	.06	.08
26	.10	.16	.17	.17	.21	.36	.70	.48	.17	.08	.06	.08
27	.11	.18	.17	.18	.21	.33	.72	.46	.16	.08	.06	.08
28	.10	.17	.16	.17	.22	.32	.72	.44	.16	.08	.06	.09
29	.10	.17	.17	.16		.33	.75	.50	.16	.08	.06	.09
30	.10	.17	.16	.18		.39	.79	.46	.15	.08	.06	.08
31	.10		.16	.18		.48		.54		.08	.06	
Total	5.53	5.20	7.01	4.91	6.32	9.43	23.56	20.39	8.12	5.44	2.14	2.44
Mean	0.114	0.173	0.226	0.158	0.226	0.304	0.785	0.658	0.271	0.111	0.069	0.081
Max.	0.14	0.23	1.18	0.18	0.50	0.48	1.05	0.82	0.55	0.19	0.09	0.32
Min.	0.09	0.10	0.16	0.15	0.18	0.20	0.58	0.44	0.15	0.08	0.06	0.05
Ac-ft	7.0	10.3	13.9	9.7	12.5	18.7	46.7	40.4	15.1	6.8	4.2	4.8
Calendar year 1960 :				Max 1.88	Min 0.08	Mean 0.373	Acres-feet 271					
Water year 1960-61 :				Max 1.18	Min 0.05	Mean 0.264	Acres-feet 191					

a No gage-height record.

TULARE LAKE BASIN

11-2158.3. Teakettle Creek tributary No. 2A near Patterson Mountain, Calif.

Location.--Lat 36°57'25", long 119°01'50", in NW 1/4 sec. 21, T. 11 S., R. 27 E., 0.1 mile upstream from junction with Teakettle Creek tributary No. 2, 1.3 miles east of Patterson Mountain, and 2.6 miles north of Black Rock Reservoir.

Drainage area.--0.27 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder and 90° sharp-crested V-notch weir. Datum of gage is 6,920 ft above mean sea level (levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 1.99 cfs Dec. 1 (gage height, 4.914 ft); minimum daily, 0.01 cfs for many days.
1957-61: Maximum discharge, 5.54 cfs May 22, 1958 (gage height, 5.38 ft); minimum daily, 0.01 cfs for many days in 1960-61.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. No regulation or diversion above station.

Cooperation.--Records furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.01	0.02	0.54	0.04	0.05	0.07	0.26	0.19	0.12	0.02	0.01	0.01
2	.01	.02	.22	.04	.06	.07	.31	.19	.10	.02	.01	.01
3	.01	.05	.10	.04	.06	.08	.44	.17	.08	.03	.01	.01
4	.02	.05	.08	.04	.06	.07	.47	.16	.06	.02	.01	.01
5	.02	.06	.07	.04	.06	.06	.42	.15	.05	.02	.01	.01
6	a.04	.07	.06	.04	.06	.07	.39	.18	.05	.02	.01	.01
7	a.03	.05	.06	.04	.05	.07	.35	.23	.05	.02	.01	.01
8	a.02	.05	.05	.04	.06	.07	.30	.18	.05	.02	.01	.01
9	a.03	.04	.05	.04	.06	.08	.29	.16	.04	.02	.01	.01
10	a.03	.04	.05	.04	.08	.08	.26	.15	.04	.02	.01	.01
11	a.02	.04	.05	.04	.21	.07	.28	.14	.04	a.02	.01	.01
12	a.02	.06	.05	.04	.13	.08	.25	.14	.04	a.01	.01	.01
13	a.02	.07	.05	.04	.10	.09	.28	.14	.03	.01	.01	.01
14	a.02	.05	.05	.04	.09	.10	.24	.13	.03	.01	.01	.01
15	a.02	.05	.05	.04	.08	.10	.26	.12	.03	.01	.01	.01
16	.02	.05	.05	.04	.08	.10	.27	.11	.03	.01	.01	.03
17	.02	.05	.05	.04	.07	.10	.27	.10	.03	a.01	.01	.06
18	.02	.05	.05	.04	.07	.10	.24	.10	.03	a.01	.01	.03
19	.02	.05	.05	.04	.07	.11	.20	.12	.03	a.01	.01	.02
20	.02	.05	.05	.04	.07	.14	.17	.11	.03	a.01	.01	.02
21	.02	.05	.05	.04	.07	.16	.16	.09	.02	.01	.01	.02
22	.02	.04	.05	.04	.07	.18	.17	.08	.02	.01	.01	.02
23	.02	.04	.05	.04	.06	.20	.17	.08	.02	.01	.01	.02
24	.02	.05	.05	.04	.07	.14	.17	.07	.02	.01	.01	.02
25	.02	.05	.05	.04	.07	.13	.22	.06	.02	.01	.01	.02
26	.02	.05	.05	.05	.07	.13	.27	.06	.02	.01	.01	.02
27	.02	.05	.05	.05	.06	.12	.23	.06	.02	.01	.01	.02
28	.02	.04	.04	.04	.06	.12	.20	.06	.02	.01	.01	.02
29	.02	.04	.04	.04	-	.13	.20	.08	.02	.01	.01	.02
30	.02	.04	.04	.05	-----	.17	.18	.07	.02	.01	.01	.02
31	.02	-----	.04	.05	-----	.22	-----	.11	-----	.01	.01	-----
Total	0.64	1.42	2.29	1.28	2.10	3.41	7.92	3.79	1.16	0.43	0.31	0.51
Mean	0.021	0.047	0.074	0.041	0.075	0.110	0.264	0.122	0.039	0.014	0.010	0.017
Max.	0.04	0.07	0.54	0.05	0.21	0.22	0.47	0.23	0.12	0.03	0.01	0.06
Min.	0.01	0.02	0.04	0.04	0.05	0.06	0.16	0.06	0.02	0.01	0.01	0.01
Ac-ft	1.3	2.8	4.5	2.5	4.2	6.8	15.7	7.5	2.3	0.9	0.6	1.0
Calendar year 1960: Max 0.65 Min 0.01 Mean 0.124 Acre-feet 89.7												
Water year 1960-61: Max 0.54 Min 0.01 Mean 0.069 Acre-feet 50.1												

a No gage-height record.

TULARE LAKE BASIN

545

11-2158.4. Teakettle Creek tributary No. 1 near Patterson Mountain, Calif.

Location.--Lat 36°57'00", long 119°01'10", in NW¼ sec. 27, T.11 S., R.27 E., 0.2 mile upstream from confluence with Teakettle Creek, 2.1 miles north of Black Rock Reservoir, and 2.2 miles east of Patterson Mountain.

Drainage area.--0.77 sq mi.

Records available.--October 1927 to September 1961.

Gage.--Water-stage recorder, 90° sharp-crested V-notch weir, and sharp-crested Cippolletti weir. Datum of gage is 6,403.7 ft above mean sea level (levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 6.93 cfs Dec. 1 (gage height, 5.511 ft); minimum daily, 0.06 cfs Sept. 12, 13. 1957-61: Maximum discharge, 13.7 cfs May 22, 1958 (gage height, 5.99 ft); minimum daily, that of Sept. 13, 1961.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. No regulation or diversion above station.

Cooperation.--Records furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a.0.10	0.12	1.76	0.20	0.24	0.30	0.67	0.68	0.47	a.0.17	0.10	0.07
2	a.1.0	.13	.78	.20	.26	.33	.89	.66	.45	a.1.8	.09	.08
3	a.1.0	.25	b.3.4	.21	.25	.35	1.20	.64	.40	a.2.0	.09	.07
4	a.1.0	.27	b.2.8	.21	.24	.32	1.33	.61	.35	a.1.9	.10	.07
5	a.1.0	.20	b.2.5	.20	.24	.28	1.22	.58	.33	a.1.8	.10	.07
6	a.2.2	.26	b.2.2	.20	.24	.32	1.10	.66	.32	a.1.7	.09	.07
7	.16	.20	b.2.4	.20	.24	.31	.98	.78	.32	.16	.09	.07
8	.15	.19	.24	.20	.24	.30	.90	.69	.31	.16	.10	.07
9	.16	.18	.23	.21	.25	.31	.88	.61	.30	.16	.08	.07
10	.16	.17	.23	.21	.29	.31	.83	.58	.29	.15	.10	.07
11	.16	.17	.22	.21	.83	.31	.85	.55	.28	.15	.11	.07
12	.16	.41	.22	.21	.54	.32	.83	.55	.27	a.1.4	.09	.06
13	.15	.25	.22	.20	.40	.36	.85	.55	.26	a.1.4	.08	.06
14	a.1.4	.23	.22	.20	.36	.38	.79	.52	.24	a.1.3	.08	.07
15	a.1.3	.20	.22	.20	.34	.37	.80	.50	.24	.13	.08	.07
16	.13	.20	.21	.20	.34	.37	.84	.48	.23	.13	.08	.12
17	.13	.20	.21	.20	.31	.35	.84	.46	.23	.13	.08	.13
18	.12	.20	.21	.20	.29	.34	.78	.43	.22	.12	.08	.17
19	.12	.20	.22	.20	.28	.35	.69	.47	.22	.12	.08	.14
20	.12	.19	.22	.20	.28	.40	.64	.48	.21	.12	.08	.13
21	.12	.19	.22	.20	.28	.44	.61	.43	.20	.12	.08	.13
22	.12	.19	.22	.20	.29	.50	.64	.41	.20	.11	.08	.13
23	.11	.18	.22	.20	.29	.61	.63	.40	.19	.11	.08	.13
24	.11	.19	.22	.20	.28	.46	.61	.39	a.1.9	.11	.07	.12
25	.11	.19	.22	.20	.29	.48	.69	.36	a.1.9	.11	.08	.12
26	.11	.18	.22	.29	.29	.48	.74	.36	a.1.9	.10	.08	.11
27	.12	.22	.22	.24	.28	.44	.74	.36	a.1.9	.10	.08	.10
28	.11	.20	.21	.23	.28	.42	.71	.35	a.1.8	.10	.08	.11
29	.12	.20	b.2.0	.22	-	.42	.70	.40	a.1.8	.10	.08	.11
30	.12	.20	.21	.24	-	.46	.69	.37	a.1.8	.10	.08	.10
31	.12	.21	.24	.24	-	.54	-	.46	-	.10	.07	-
Total	3.98	6.16	9.11	6.52	8.74	11.93	24.67	15.77	7.83	4.19	2.64	3.07
Mean	0.128	0.205	0.294	0.210	0.312	0.385	0.822	0.509	0.261	0.135	0.085	0.102
Max.	0.16	0.41	1.76	0.29	0.83	0.61	1.33	0.78	0.47	0.20	0.11	0.31
Min.	0.10	0.12	0.21	0.20	0.24	0.28	0.61	0.35	0.18	0.10	0.07	0.06
Ac-ft	7.9	12.2	18.1	12.9	17.3	23.7	48.9	31.3	15.5	8.3	5.2	6.1
Calendar year 1960: Max 2.20 Min 0.10 Mean 0.470 Acra-feet 341												
Water year 1960-61: Max 1.76 Min 0.06 Mean 0.287 Acra-feet 207												

a No gage-height record.

b Stage-discharge relation affected by ice.

TULARE LAKE BASIN

11-2165. North Fork Kings River above Dinkey Creek, Calif.

Location.--Lat 36°54'10", long 119°07'15", in NW¼ sec.10, T.12 S., R.26 E., on left bank 100 ft downstream from bridge at Balch Camp, 200 ft upstream from Dinkey Creek, and 9.3 miles east of Trimmer.

Drainage area.--250 sq mi (revised).

Records available.--October 1919 to September 1930, March 1960 to September 1961. Records for water year 1920 incomplete, yearly estimate and monthly discharge only for some months, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 1,240 ft (from river-profile map). October 1919 to Sept. 30, 1930, at datum 1.00 ft higher.

Average discharge.--11 years (1919-30), 387 cfs (280,200 acre-ft per year).

Extremes.--1960: Maximum discharge during period March to September, 890 cfs Aug. 18 (gage height, 4.62 ft); minimum daily, 21 cfs Sept. 20.

1960-61: Maximum discharge during water year, 905 cfs July 2 (gage height, 4.65 ft); minimum daily, 7.3 cfs Jan. 6.

1919-30 (prior to regulation by Wishon and Courtright Reservoirs): Maximum discharge, 6,080 cfs June 4, 1922 (gage height, 13.18 ft, present datum); minimum, about 4 cfs Aug. 29 to Sept. 1, 1924.

Remarks.--Records good. Flow regulated by Courtright and Wishon Reservoirs (see p. 539), Black Rock Reservoir (capacity, 1,000 acre-ft), Balch afterbay (capacity, 125 acre-ft), and Haas and Balch powerplants. No diversion.

Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.1	5.6	2.0	53	3.5	385
1.3	10	2.4	101	4.0	590
1.5	18	2.9	200	5.0	1,100
1.7	28				

Discharge, in cubic feet per second, March to September 1960

Discharge, in cubic feet per second, March to September 1960												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-	120	171	103	426	658	830
2						-	126	198	303	70	658	500
3						-	67	177	*476	58	667	504
4						-	176	81	152	191	849	481
5						-	100	133	59	421	855	510
6						-	223	154	393	649	855	584
7						-	113	163	324	653	855	716
8						-	128	131	302	653	855	292
9						-	130	228	407	653	855	579
10						-	119	198	368	649	855	705
11						-	149	175	46	653	855	338
12						-	* 90	208	194	653	855	561
13						-	113	217	390	658	855	835
14						-	103	149	313	658	855	840
15						-	130	175	420	658	855	544
16						-	45	184	373	658	855	412
17						-	81	123	215	658	855	223
18						-	156	130	46	658	*855	128
19						-	105	182	77	658	855	29
20						-	105	239	275	658	855	21
21						-	156	83	333	658	732	62
22						-	169	98	323	658	820	32
23						-	69	182	347	653	741	28
24						136	93	33	339	653	845	28
25						65	127	105	368	653	845	22
26						128	139	154	179	658	850	23
27						184	131	177	301	658	850	25
28						203	119	109	339	658	790	25
29						145	131	92	335	658	845	22
30						152	162	106	419	658	840	25
31						*71		174		658	815	
Total						-	3,675	4,729	8,519	18,216	25,485	9,924
Mean						-	123	153	284	588	822	331
Max.						-	223	239	476	658	855	840
Min.						-	45	33	46	58	658	21
Ac-ft						-	7,290	9,380	16,900	36,130	50,550	19,680
Calendar year				Max	Min		Mean		Acre-feet			
Water year				Max	Min		Mean		Acre-feet			

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2168. Rock Creek at Dinkey Creek, Calif.

Location.--Lat 37°05'25", long 119°09'40", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.5, T.10 S., R.26 E., on right bank 0.4 mile northwest of town of Dinkey Creek and 0.5 mile upstream from mouth.

Drainage area.--7.6 sq mi.

Records available.--July 1960 to September 1961.

Gage.--Water-stage recorder and low-flow concrete control. Altitude of gage is 6,150 ft (from topographic map).

Extremes.--1960: Maximum discharge during period July to September, 0.2 cfs July 22-24 (gage height, 1.29 ft); no flow for many days.
1960-61: Maximum discharge during water year, 302 cfs Dec. 1 (gage height, 5.29 ft), from rating curve extended above 70 cfs; no flow many days in October, August, September.

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversions or regulation above station.

Discharge, in cubic feet per second, 1960

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	*3.1	0.1	9	-	0.1	0	17	-	0	0.1	25	0.1	0	0.1
2	-	.1	.1	10	-	.1	0	18	-	0	.1	26	.1	0	.1
3	-	.1	.1	11	-	.1	0	19	-	0	.1	27	.1	0	0
4	-	.1	.1	12	-	.1	*0	20	-	0	.1	28	.1	0	0
5	-	.1	.1	13	-	0	.1	21	-	0	.1	29	.1	.1	0
6	-	.1	0	14	-	0	.1	22	0.2	0	.1	30	.2	.1	0
7	-	.1	0	15	-	0	.1	23	.2	0	.1	31	.1	.1	-
8	-	.1	0	16	-	0	.1	24	.2	0	.1				
Total														1.5	1.9
Mean														0.05	0.06
Max.														0.1	0.1
Min.														0	0
Runoff in acre-feet														3.0	3.8

* Discharge measurement or observation of no flow made on this day.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	7.0	2.0	4.8	8.9	28	16	7.6	0.5	0.1	0
2	.1	.1	4.3	1.9	4.6	11	34	14	7.4	.5	.1	0
3	.1	.4	14	1.8	4.8	12	44	13	5.9	.8	.1	0
4	.1	.6	8.9	1.8	5.3	9.7	*5.0	12	4.8	.8	.1	0
5	.1	.4	6.9	1.8	5.6	8.3	5.0	10	4.4	.6	.2	0
6	.4	.8	5.6	1.7	6.0	7.6	44	11	3.9	.6	.2	0
7	.3	.5	5.0	1.6	5.6	7.8	37	20	3.8	.5	.1	0
8	.2	.5	4.6	1.6	5.6	7.7	32	18	3.4	.4	.1	0
9	.2	.6	4.0	1.6	6.7	7.9	31	*14	3.0	.4	.1	0
10	.2	.5	3.8	1.6	9.5	7.6	29	13	2.7	.4	0	0
11	.2	.4	3.4	*1.6	31	7.6	29	12	2.3	.4	*0	0
12	.2	1.3	3.4	1.8	24	8.3	28	10	*2.3	.3	.2	0
13	.2	1.2	*3.4	1.8	14	11	26	9.5	2.1	*.3	.2	0
14	.2	1.2	3.3	1.9	12	14	25	8.9	1.8	.3	.2	0
15	.2	1.0	2.9	2.1	10	14	26	8.7	1.7	.3	.1	0
16	.1	1.2	2.7	2.2	8.9	13	27	7.9	1.6	.2	.1	.2
17	.1	1.4	2.7	2.3	7.9	12	25	7.4	1.4	.2	.1	.5
18	.1	1.4	2.8	2.4	7.0	11	*22	7.0	1.2	.2	.1	.4
19	.2	1.6	2.7	2.6	6.4	12	18	7.9	1.2	.2	.1	.4
20	.1	1.6	2.8	2.6	6.5	17	15	7.6	1.0	.2	.1	.3
21	.1	1.8	3.3	2.6	7.4	21	13	6.2	.9	.1	.1	.3
22	.1	1.8	4.0	2.4	8.1	24	14	5.9	.9	.1	.1	** .2
23	.1	1.5	4.2	2.4	7.7	30	12	5.6	.8	.1	.1	.1
24	.1	1.8	4.2	2.4	7.7	21	13	5.2	.7	.1	.1	0
25	.1	2.4	3.9	2.6	8.1	18	18	4.7	.7	.1	.1	0
26	.1	1.4	3.7	4.3	7.4	15	21	4.4	.6	.1	0	0
27	.1	2.1	3.7	4.4	6.9	14	20	4.4	.6	.1	0	0
28	.1	1.8	2.9	4.0	7.4	13	19	4.2	.6	.1	0	0
29	.1	1.9	2.7	3.9		14	18	5.2	.6	.1	0	.1
30	.1	1.8	2.4	4.0		18	17	4.4	.6	.1	0	.1
31	.1		2.2	4.8		23		6.5		.1	0	
Total	4.4	35.1	233.1	76.5	246.9	419.4	785	284.6	70.5	9.2	2.8	2.6
Mean	0.14	1.17	7.52	2.47	8.82	13.5	26.2	9.18	2.35	0.30	0.09	0.09
Max.	0.4	2.4	70	4.8	31	30	50	20	7.6	0.8	0.2	0.5
Min.	0	0.1	2.2	1.6	4.6	7.6	12	4.2	0.6	0.1	0	0
Ac-ft	8.7	70	462	152	490	832	1,560	564	140	18	5.6	3.2

Calendar year 1960: Max - Min 0 Mean - Acre-feet -
Water year 1960-61: Max 70 Min 0 Mean 5.95 Acre-feet 4,310

Peak discharge (base, 70 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	6p.m.	5.29	302	4-4	5:30p.m.	4.12	80

* Discharge measurement made on this day.

** Field estimate made on this day.

Note.--No gage-height record Aug. 12 to Sept. 22.

TULARE LAKE BASIN

549

11-2184. North Fork Kings River below Dinkey Creek, Calif.

Location.--Lat 36°52'50", long 119°07'40", in NW¼ sec.22, T.12 S., R.26 E., on right bank 1.1 miles upstream from mouth, 1.7 miles south of Balch Camp, 2.1 miles downstream from Dinkey Creek, and 9 miles east of Trimmer.

Drainage area.--387 sq mi.

Records available.--March 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,035 ft (from river-profile map).

Extremes.--1960: Maximum discharge during period March to September, 1,350 cfs May 8 (gage height, 5.81 ft); minimum daily, 24 cfs Sept. 20.

1960-61: Maximum discharge during water year, 2,680 cfs Dec. 1 (gage height, 7.64 ft), from rating curve extended above 900 cfs; minimum daily, 21 cfs Oct. 24, 25, 28.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Courtright and Wishon Reservoirs (see p. 539), Black Rock Reservoir (capacity, 1,000 acre-ft), Balch afterbay (capacity, 125 acre-ft), and Haas and Balch powerplants. No diversion.

Cooperation.--Water-stage-recorder graph and 13 discharge measurements furnished by Pacific Gas & Electric Co. in cooperation with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.6	18	3.0	280
1.0	35	4.0	550
1.5	65	5.0	940
2.0	115		

Discharge, in cubic feet per second, March to September 1960												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-	375	622	314	452	656	852
2						-	460	717	492	95	656	593
3						-	483	648	592	73	660	498
4						-	655	473	343	221	860	511
5						-	602	463	209	431	876	530
6						-	738	577	537	660	880	565
7						-	648	656	453	656	880	798
8						-	635	662	410	656	880	292
9						-	655	809	499	660	880	539
10						-	611	799	459	652	876	788
11						-	612	774	141	652	880	369
12						-	*396	816	276	652	880	555
13						-	437	755	477	656	880	864
14						-	498	612	393	656	880	868
15						-	510	664	484	656	880	554
16						-	427	648	431	656	876	439
17						-	458	516	269	652	876	250
18						-	537	479	93	652	*880	167
19						-	497	565	100	652	876	38
20						-	548	570	354	652	876	24
21						-	637	365	381	652	744	65
22						-	619	413	362	652	832	39
23						-	377	447	376	644	756	35
24						387	379	251	371	648	868	34
25						395	407	301	408	644	872	30
26						499	419	386	214	656	872	29
27						596	437	437	336	648	872	28
28						604	399	360	367	652	808	31
29						445	404	314	362	652	872	28
30						*448	488	325	436	656	872	33
31						*308	-----	*378	-----	656	840	-----
Total						-	15,348	16,802	10,939	18,252	26,096	10,446
Mean						-	512	542	365	589	842	348
Max.						-	738	816	592	660	880	868
Min.						-	375	251	93	73	656	24
Ac-ft						-	30,440	33,330	21,700	36,200	51,760	20,720
Calendar year						Max	Min	Mean		Acre-feet		
Water year						Max	Min	Mean		Acre-feet		

* Discharge measurement made on this day.

TULARE LAKE BASIN

11-2184. North Fork Kings River below Dinkey Creek, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	24	442	45	76	103	326	360	237	615	589	371
2	28	26	713	42	87	127	322	366	238	530	685	30
3	31	36	168	59	75	132	398	452	214	561	578	26
4	27	64	94	68	73	98	542	317	187	507	601	25
5	*37	49	127	41	62	78	527	*316	189	273	579	97
6	36	189	94	31	81	133	454	309	196	259	534	154
7	47	109	61	33	75	85	460	318	268	39	539	140
8	39	40	70	32	62	*124	353	375	573	35	579	184
9	36	35	59	32	89	112	350	345	626	33	599	36
10	35	32	57	52	95	114	359	385	188	460	658	25
11	36	51	55	44	277	114	342	312	101	a580	622	162
12	41	260	50	42	261	80	383	306	607	a680	582	159
13	33	119	*68	50	174	124	380	241	638	a550	411	167
14	37	134	57	44	124	176	370	277	654	a420	604	172
15	34	146	53	43	110	147	364	368	671	a400	471	172
16	27	*173	50	*61	120	183	440	314	649	a50	347	23
17	104	140	49	71	97	142	477	323	252	a350	338	37
18	47	138	48	68	96	126	421	365	90	a600	379	156
19	27	92	46	45	89	130	355	365	512	a600	28	239
20	25	115	45	43	101	202	399	272	572	a560	36	156
21	24	53	45	44	83	224	525	272	511	*a620	311	163
22	23	84	52	41	102	243	242	331	427	590	360	232
23	22	53	79	40	118	269	341	245	486	592	*370	33
24	21	44	59	39	117	270	193	316	194	573	380	22
25	21	44	55	41	86	268	206	243	107	593	364	164
26	23	54	53	94	76	206	218	242	594	590	37	148
27	22	46	57	94	117	*221	242	221	593	580	25	173
28	21	47	61	77	73	220	252	189	583	598	335	176
29	25	52	56	59	—	207	262	*174	603	541	386	137
30	25	47	54	78	—	218	308	172	569	531	372	63
31	23	—	52	113	—	240	—	289	—	465	370	—
Total	1,004	2,496	1,029	1,666	2,996	5,116	10,811	9,380	12,329	14,375	13,069	18,422
Mean	32.4	83.2	97.7	53.7	107	165	360	303	411	464	422	128
Max.	104	260	713	113	277	270	542	452	671	680	685	371
Min.	21	24	45	31	62	78	193	172	90	33	25	22
Ac-ft	1,990	4,950	6,010	3,300	5,940	10,150	21,440	18,600	24,450	28,510	25,920	7,620
Calendar year 1960: Max - Min - Mean - Acra-feet -												
Water year 1960-61: Max 713 Min 21 Mean 219 Acra-feet 158,900												

* Discharge measurement made on this day.
 a No gage-height record.

11-2185. Kings River below North Fork, Calif.

Location.--Lat 36°52'30", long 119°08'30", in NE¼ sec. 21, T.12 S., R.26 E., on right bank 0.8 mile downstream from North Fork, 2.4 miles southwest of Balch Camp, and 8.5 miles southeast of Trimmer.

Drainage area.--1,350 sq mi, approximately.

Records available.--October 1951 to September 1961. Prior to January 1952 monthly discharge only, published in WSP-1735.

Gage.--Water-stage recorder. Datum of gage is 942.42 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--10 years, 1,914 cfs (1,386,000 acre-ft per year, adjusted for storage).

Extremes.--Maximum discharge during year, 3,620 cfs Dec. 2 (gage height, 6.39 ft); minimum, 125 cfs Oct. 1, 2.

1951-61: Maximum discharge, 85,200 cfs Dec. 23, 1955 (gage height, 23.08 ft), from rating curve extended above 18,000 cfs on basis of slope-area measurement of peak flow; minimum, 99 cfs Dec. 15, 1959.

Flood of Nov. 19, 1950, reached a stage of 21.6 ft, from floodmarks (discharge, 74,200 cfs).

Remarks.--Records excellent. Flow regulated by Courtright and Wishon Reservoirs (see p.539). This station measures inflow to Pine Flat Reservoir.

Cooperation.--Twelve discharge measurements furnished by Kings River Water Association.

Rating table, (gage height, in feet, and discharge, in cubic feet per second)

2.1	117
2.5	211
3.0	385
3.5	625
4.0	940
5.0	1,830
6.0	3,060

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	129	724	200	259	282	812	1,720	1,730	1,130	768	679
2	131	*129	1,590	189	266	318	891	1,880	1,620	1,010	792	304
3	133	141	528	195	266	345	1,210	2,050	1,820	1,020	728	269
4	157	203	409	211	253	326	1,770	1,830	1,750	1,080	728	246
5	152	192	415	*182	243	296	1,700	1,590	1,940	706	722	299
6	*164	387	361	166	259	349	1,710	1,460	2,220	695	715	*345
7	217	360	304	169	256	296	1,780	1,410	2,430	438	835	313
8	228	237	*318	169	243	353	1,410	1,510	2,890	401	831	343
9	206	231	300	166	259	349	1,410	1,690	2,840	373	*826	225
10	206	223	286	187	279	337	1,330	*1,910	2,170	819	870	189
11	217	243	279	176	502	341	1,270	1,810	1,980	866	1,210	310
12	228	494	262	179	646	307	*1,530	1,600	2,410	*968	1,280	299
13	228	468	269	182	434	345	1,390	1,350	2,340	828	948	312
14	223	417	262	182	*369	416	1,410	1,490	*2,330	700	1,060	300
15	211	442	256	176	*345	438	1,510	1,870	2,280	641	846	308
16	192	455	243	190	357	485	1,940	2,050	2,210	326	684	159
17	251	443	237	208	322	*505	2,290	2,280	1,770	607	653	179
18	200	409	237	206	315	448	2,360	2,500	1,550	831	*635	292
19	176	361	228	179	286	461	1,870	2,340	1,930	803	266	365
20	166	365	228	176	300	535	1,650	1,960	1,830	787	290	303
21	162	311	226	176	282	570	1,580	2,150	1,820	829	592	291
22	157	334	231	174	307	625	1,230	2,500	1,510	797	737	354
23	152	296	250	174	311	710	1,230	2,620	1,470	790	1,170	172
24	150	279	237	*172	311	728	985	2,710	1,150	760	1,390	146
25	148	279	231	172	282	760	*1,040	*2,670	978	801	1,130	267
26	152	304	226	293	269	652	985	2,610	1,380	809	625	*247
27	*150	293	*223	330	307	*677	1,020	2,390	*1,350	812	500	282
28	146	*279	237	269	259	664	1,090	2,410	1,300	*810	763	279
29	141	296	214	240	—	614	1,190	2,210	1,240	754	756	246
30	133	290	211	259	—	620	1,350	1,800	1,160	707	690	196
31	129	—	211	300	—	625	—	1,710	—	660	693	—
Total	5,437	9,290	10,233	6,247	8,787	14,777	42,943	62,080	55,398	23,558	24,733	8,519
Mean	175	310	330	202	314	477	1,431	2,003	1,847	760	798	284
Max.	251	494	1,590	330	646	760	2,360	2,710	2,890	1,130	1,390	679
Min.	129	129	214	166	243	282	812	1,350	978	326	266	146
Ac-ft	10,780	18,430	20,300	12,390	17,430	29,310	85,180	123,100	109,900	46,730	49,060	16,900
Mean†	166	317	356	216	360	583	1,936	2,620	1,761	308	408	171
Ac-ft†	10,180	18,870	21,890	13,300	19,970	35,830	115,200	161,100	104,800	18,930	25,060	10,200
Calendar year 1960:	Max 4,890	Min 114	Mean 981	Ac-ft 712,100	Mean† 973	Ac-ft† 706,500						
Water year 1960-61:	Max 2,890	Min 129	Mean 745	Ac-ft 539,500	Mean† 767	Ac-ft† 555,300						

* Discharge measurement made on this day.

† Adjusted for change in contents in Wishon and Courtright Reservoirs.

11-2200. Big Creek above Pine Flat Reservoir, Calif.

Location.--Lat 36°55'05", long 119°14'45", in NE¼ sec.4, T.12 S., R.25 E., on right bank 2.4 miles upstream from mouth and 2.7 miles northeast of Trimmer.

Drainage area.--69.2 sq mi.

Records available.--October 1953 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 962.04 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--8 years, 40.5 cfs (29,320 acre-ft per year).

Extremes.--Maximum discharge during year, 724 cfs Dec. 1 (gage height, 4.39 ft), from rating curve extended above 310 cfs on basis of slope-area measurement at gage height 9.21 ft; no flow for many days.

1953-61: Maximum discharge, 10,400 cfs Dec. 23, 1955 (gage height, 9.21 ft), from rating curve extended above 220 cfs on basis of slope-area measurement of peak flow; no flow at times in 1955, 1959-61.

Remarks.--Records good. This station measures inflow to Pine Flat Reservoir. No regulation or diversion above station.

Cooperation.--Nine discharge measurements furnished by Kings River Water Association.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 3, Jan. 5-7,
May 7-17, June 26 to July 10)

.72	0	1.5	15
.8	.2	1.7	24
.9	.6	2.0	45
1.0	1.3	2.5	94
1.1	2.4	3.0	174
1.2	4.2	3.5	326
1.3	6.9		

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.8	7.9	4.9	9.4	7.2	22	7.9	6.6	0.2	(*)	(*)
2	0	*.9	1.93	4.4	9.4	7.2	20	7.6	6.6	.1		
3	* 0	1.0	3.8	4.4	11	7.9	18	7.2	6.0	.1	(*)	
4	0	2.5	22	4.4	10	8.2	17	6.6	4.6	.2		
5	0	4.6	15	*4.2	9.4	8.6	16	6.3	3.8	.5		
6	0	6.9	12	4.2	9.0	9.8	15	7.2	3.6	.4		
7	0	7.6	10	4.2	8.2	9.4	14	17	3.2	.3		
8	0	4.6	*9.0	4.9	7.9	8.2	13	13	3.2	.2		
9	0	3.0	8.6	4.4	7.6	8.2	12	8.2	2.8	.2		
10	* 0	2.6	8.2	4.6	7.6	7.6	11	*7.2	2.6	*0	(*)	
11	0	2.6	8.2	4.6	8.6	7.2	10	6.3	2.6	0		(*)
12	0	18	*7.6	4.4	28	6.9	*9.8	6.0	2.5	0		
13	0	35	6.9	4.4	20	6.3	10	6.0	2.2	0	(*)	(*)
14	0	28	6.6	4.4	15	6.3	9.4	6.0	*2.0	0		
15	.1	16	6.6	4.6	*13	16	9.0	5.4	1.6	0		
16	.5	11	6.3	4.6	13	20	8.2	4.9	1.4	0		
17	.6	8.6	6.0	4.6	11	*20	7.9	4.6	1.2	0		
18	.6	7.2	6.0	4.6	11	21	7.9	4.4	1.0	0		(*)
19	.6	6.6	6.0	4.6	9.8	14	7.9	4.6	.9	0		
20	.6	6.6	5.7	4.4	9.4	14	7.9	6.3	.8	0		
21	.7	6.3	5.7	4.4	9.0	15	7.6	6.3	.7	0		
22	.7	6.0	7.2	4.6	8.6	15	14	5.4	.6	0		
23	.7	6.0	6.0	4.6	8.2	15	16	5.2	.5	0		
24	.7	5.7	5.7	*4.4	8.2	18	13	4.9	.3	0		
25	.7	5.4	5.7	*4.4	7.9	4.4	*12	4.6	.3	* 0		
26	.7	6.9	5.4	19	7.6	31	13	*4.4	.3	0		(*)
27	*.8	13	5.4	30	7.6	27	13	4.2	*.3	* 0		
28	.8	10	5.2	15	7.6	*37	11	4.2	.2	0		
29	.9	7.9	4.9	11	—	27	9.8	4.4	.2	0		
30	.9	*7.2	5.2	10	—	25	8.6	4.9	.2	0		
31	.8	—	5.0	9.4	—	24	—	4.6	—	0		
Total	11.4	248.5	522.1	206.6	293.0	492.0	364.0	195.8	62.8	2.2	0	0
Mean	0.37	8.28	16.8	6.66	10.5	15.9	12.1	6.32	2.09	0.07	0	0
Max.	0.9	35	193	30	28	44	22	17	6.6	0.5	0	0
Min.	0	0.8	4.9	4.2	7.6	6.3	7.6	4.2	0.2	0	0	0
Ac-ft	23	493	1,040	410	581	976	722	388	125	4.4	0	0
Calendar year 1960: Max 403 Min 0 Mean 16.2 Acra-feet 11,760												
Water year 1960-61: Max 193 Min 0 Mean 6.57 Acra-feet 4,760												

Peak discharge (base, 500 cfs).--Dec. 1 (12 p.m.) 724 cfs (4.39 ft).

* Discharge measurement or observation of no flow made on this day.

TULARE LAKE BASIN

553

11-2205. Sycamore Creek above Pine Flat Reservoir, Calif.

Location--Lat 36°55'15", long 119°18'30", in NW¼ sec. 1, T.12 S., R.24 E., on right bank 0.1 mile downstream from Little Dry Creek, 1.7 miles northwest of Trimmer, and 4.8 miles upstream from mouth.

Drainage area--56.5 sq mi.

Records available--April 1953 to September 1961.

Gage--Water-stage recorder and concrete control. Datum of gage is 1,141.96 ft above mean sea level (levels by Corps of Engineers).

Average discharge--8 years, 19.1 cfs (13,830 acre-ft per year).

Extremes--Maximum discharge during year, 343 cfs Dec. 1 (gage height, 2.67 ft); no flow for several months.

1953-61: Maximum discharge, 6,760 cfs Dec. 24, 1955 (gage height, 9.78 ft), from rating curve extended above 2,900 cfs on basis of slope-area measurement of peak flow; no flow for several months each year.

Remarks--Records good. This station measures inflow to Pine Flat Reservoir. No regulation or diversion above station.

Cooperation--Four discharge measurements furnished by Kings River Water Association.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.6	0	1.0	10
.7	.6	1.2	28
.8	1.5	1.4	53
.9	4.6	1.6	84

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		* 0	4.4	0.6	2.0	1.1	2.8	1.0	0.1		(*)	(*)
2			8.1	.6	1.1	1.1	2.5	1.0	.1			
3		0	1.2	.6	2.0	1.2	2.2	1.0	.1			
4		* 0	4.0	.6	2.0	1.4	2.0	.9	.1			
5		0	2.0	.6	1.8	1.5	1.8	.8	0			
6		0	1.5	.6	1.8	1.8	1.6	1.1	0			
7		0	1.1	.6	1.6	1.8	1.5	6.6	0			
8		0	1.0	.6	1.6	1.5	1.5	2.5	* 0			
9		0	1.0	.6	1.6	1.4	1.2	1.4	0			
10		0	.9	.6	1.5	1.4	1.1	*1.0	0		(*)	
11		0	.8	.6	1.8	1.2	1.1	.9	0			
12		0	.6	.6	5.6	1.1	*1.1	.8	0			
13		0	.6	.7	2.8	1.2	1.1	.8	0			(*)
14		1.6	.6	.7	2.2	1.1	1.0	.7	0			
15		.2	.6	.7	* 2.0	1.4	1.0	.6	0			
16		0	.6	.7	1.6	7.5	1.0	.5	0			
17		0	.6	.7	1.6	*1.3	1.0	.3	0			
18		0	.6	.7	1.5	9.6	1.0	.3	0			
19		0	.6	.7	1.5	4.6	1.0	.3	0			
20		0	.6	.6	1.4	3.2	1.0	.6	0			
21		0	.6	.6	1.4	2.8	1.0	.7	0			
22		0	.6	.6	1.4	2.8	5.0	.6	0			
23		0	.6	.6	1.4	2.5	5.0	.4	0			
24		0	.6	.6	1.4	4.0	3.2	.3	0			
25		0	.6	*.6	1.4	2.4	*2.2	.2	0	(*)		
26												(*)
27		2.1	.6	2.5	1.2	9.6	1.5	*.1	0			
28		6.1	.6	2.0	1.2	7.2	1.4	.1	* 0	(*)		
29		1.1	.6	6.1	1.1	*1.0	1.4	.1	0			
30		.5	*.6	2.8	-	5.6	1.1	.1	0			
31		*.3	.6	2.0	4.0	1.0	1.0	.1	* 0			
Total	0	11.9	161.3	73.6	51.2	146.4	51.3	25.9	0.4	0	0	0
Mean	0	0.40	5.20	2.37	1.65	4.72	1.71	0.84	0.01	0	0	0
Max.	0	6.1	81	25	5.6	24	5.0	6.6	0.1	0	0	0
Min.	0	0	0.6	0.6	1.1	1.1	1.0	0.1	0	0	0	0
Ac-ft	0	24	320	146	102	290	102	51	0.8	0	0	0

Calendar year 1960 : Max 242 Min 0 Mean 5.74 Acre-feet 4,170

Water year 1960-61 : Max 81 Min 0 Mean 1.43 Acre-feet 1,040

Peak discharge (base, 300 cfs)--Dec. 1 (11:30 p.m.) 343 cfs (2.67 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record June 1-29.

TULARE LAKE BASIN

11-2210. Pine Flat Reservoir near Piedra, Calif.

Location.--Lat 36°49'55", long 119°15'25", in NE¼ sec.2, T.13 S., R.24 E., near center of Pine Flat Dam on Kings River, 1.9 miles upstream from Mill Creek, 3.5 miles northeast of Piedra, and 16 miles northeast of Sanger.

Drainage area.--1,542 sq mi

Records available.--October 1951 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Apr. 8, 1952, non-recording mercury gage on dam at same datum.

Extremes.--Maximum contents during year, 412,300 acre-ft June 17, 19, 20 (elevation, 827.98 ft); minimum, 110,200 acre-ft Sept. 30 (elevation, 718.23 ft).

1951-61: Maximum contents, 1,000,300 acre-ft June 28, 1958 (elevation, 951.31 ft); minimum, less than 13 acre-ft during many months in 1951-54.

Remarks.--Reservoir is formed by gravity-type concrete dam; regulation of discharge from reservoir began Dec. 4, 1951. Capacity, 1,013,400 acre-ft between elevation 565.5 ft (bottom of lower tier of river outlets) and 93.5 ft (top of spillway gates) above mean sea level. Reservoir is used for flood control and conservation storage. Water is released down Kings River to diversion dam of Kings River Water Association. Figures given herein represent total contents, all of which is available for release.

Cooperation.--Records furnished by Corps of Engineers and reviewed by Geological Survey.

Capacity table (elevation, in feet, and contents, in acre-ft)

715	104,400	780	255,400
720	113,400	800	316,200
740	154,000	820	383,600
760	201,400	840	457,800

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	231.700	237.300	257.100	272.100	279.400	290.200	296.300	344.000	398.400	352.400	200.000	141.100
2	231.600	237.400	261.200	272.300	279.800	289.600	297.700	345.500	398.200	344.100	197.200	139.000
3	231.600	237.700	262.200	272.500	280.200	289.100	299.900	347.300	398.400	335.600	194.100	137.800
4	231.500	237.900	263.000	272.700	280.600	288.500	303.200	348.700	398.400	326.700	191.000	136.700
5	231.500	238.400	263.600	272.900	280.900	287.900	307.000	349.500	398.700	317.200	187.800	135.500
6	231.500	239.000	264.300	273.100	281.200	287.400	310.400	350.400	399.600	307.500	184.800	134.500
7	231.600	239.800	264.800	273.200	281.600	286.800	313.700	350.900	401.000	297.700	181.900	133.400
8	231.900	240.300	265.200	273.400	281.900	286.200	316.200	351.700	403.100	287.900	179.000	132.400
9	232.200	240.700	265.700	273.600	282.200	285.900	318.700	352.700	405.300	280.400	176.300	131.300
10	232.400	241.000	266.000	273.700	282.600	285.600	321.100	354.300	406.100	276.400	173.900	129.900
11	232.700	241.500	266.300	273.800	283.300	285.400	323.300	355.600	406.600	272.600	172.100	128.700
12	233.000	242.700	266.700	273.900	284.600	285.100	326.000	356.500	407.800	268.800	170.600	127.500
13	233.300	243.900	267.100	274.000	285.400	284.800	328.000	357.100	408.900	264.500	168.600	126.300
14	233.600	244.800	267.400	274.200	286.000	284.600	329.300	357.800	410.100	260.100	166.700	125.200
15	234.000	245.600	267.700	274.300	286.600	284.800	330.300	359.400	411.200	255.300	164.700	124.000
16	234.200	246.500	268.000	274.500	287.100	284.900	332.000	361.300	412.100	250.000	162.800	122.800
17	234.400	247.500	268.300	274.700	287.700	285.200	334.400	363.800	412.300	245.000	161.400	121.400
18	234.800	248.200	268.500	274.900	288.200	285.200	337.000	366.700	412.000	240.600	159.800	120.200
19	235.000	248.900	268.800	275.100	288.700	285.500	338.700	369.400	412.300	236.500	157.600	119.100
20	235.200	249.700	269.000	275.200	289.100	285.900	340.000	371.200	412.300	232.500	155.300	118.000
21	235.400	250.300	269.200	275.400	289.500	286.400	341.000	373.400	410.300	228.900	153.500	116.900
22	235.600	250.900	269.500	275.500	289.900	287.100	341.700	376.300	407.300	225.600	152.400	115.900
23	235.800	251.500	269.800	275.600	290.300	287.900	342.300	379.500	403.500	222.900	151.000	115.000
24	236.000	252.100	270.100	275.800	290.700	289.100	342.200	382.700	398.800	220.000	151.000	113.800
25	236.100	252.600	270.400	275.900	291.000	290.100	342.400	385.900	393.900	217.800	151.600	112.800
26	236.300	253.400	270.600	276.700	291.200	290.900	342.400	389.000	389.200	215.300	150.000	112.000
27	236.500	254.000	270.900	277.400	290.900	291.800	342.200	391.600	384.400	212.300	148.100	111.400
28	236.700	254.600	271.200	277.800	290.600	292.600	342.200	394.300	376.700	210.500	146.700	111.000
29	236.900	255.200	271.400	278.200	290.400	293.400	342.400	396.600	368.800	208.000	145.300	110.500
30	237.000	255.700	271.700	278.500	290.400	294.100	342.900	397.800	360.700	205.500	143.900	110.200
31	237.200	256.000	271.900	279.000	290.400	294.900	342.900	398.400	352.700	202.700	142.500	109.000
(†)	773.50	780.10	785.64	788.02	791.83	793.25	808.17	824.14	813.43	760.50	734.66	718.23
(*)	+5,400	+18,500	+16,200	+7,100	+11,600	+4,300	+48,000	+55,500	-37,700	-158,000	-60,200	-32,300
(††)	1,140	409	254	254	370	634	1,201	1,662	2,644	2,548	1,797	1,210

Calendar year 1960 † -49,700

Water year 1960-61 (*) -121,600

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

†† Evaporation, in acre-feet, furnished by Corps of Engineers.

TULARE LAKE BASIN

555

11-2215. Kings River below Pine Flat Dam, Calif.

Location.--lat 36°49'50", long 119°20'05", in NW 1/4 sec. 2, T.13 S., R.24 E., on right bank 3,200 ft downstream from Pine Flat Dam and 2.9 miles northeast of Piedra.

Drainage area.--1,542 sq mi.

Records available.--October 1953 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 556.97 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1956, at site 0.2 mile downstream at datum 3.48 ft lower.

Average discharge.--8 years, 1,852 cfs (1,341,000 acre-ft per year), adjusted for storage and evaporation.

Extremes.--Maximum discharge during year, 5,900 cfs July 6 (gage height, 7.09 ft); minimum, 18 cfs Nov. 27-30.
1953-61: Maximum discharge, 12,700 cfs May 3, 1958 (gage height, 9.35 ft) minimum daily, 7.5 cfs Jan. 17, 1955.

Remarks.--Records excellent. Flow completely regulated by Pine Flat Reservoir (see preceding page) and Wishon and Courtright Reservoirs (see p. 539).

Cooperation.--Seventeen discharge measurements furnished by Kings River Water Association.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.3	15	3.0	605
.5	30	4.0	1,160
1.0	84	5.0	2,150
1.5	162	6.0	3,640
2.0	252	7.0	5,680

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	52	57	102	102	*468	165	1120	1660	5150	2100	1390
2	152	51	59	102	102	578	159	1090	1690	5110	2230	1390
3	148	52	53	102	102	646	132	1100	1690	5220	2320	822
4	142	51	83	102	102	650	131	1120	1700	5480	2320	806
5	139	42	84	102	102	650	140	1140	1700	5480	2300	806
6	135	42	97	102	104	*610	142	1140	*1720	5500	2300	*806
7	134	41	97	*102	104	*605	145	1140	1720	5350	*2300	826
8	57	33	97	102	106	*618	147	1140	1710	5260	2270	833
9	56	30	104	102	106	528	148	1120	1710	4110	2220	833
10	57	30	107	116	102	492	147	1120	1710	2700	2090	833
11	56	30	107	118	101	488	*147	1120	1710	2740	2110	*833
12	*52	32	107	118	101	488	145	1110	1710	2840	2020	833
13	51	30	107	118	*100	488	347	1080	1700	2940	1970	833
14	51	21	112	118	98	488	675	1070	1700	2980	2050	888
15	51	19	112	118	97	488	952	1060	1710	2930	1910	888
16	50	*19	112	118	92	488	988	1020	1690	3040	1610	866
17	50	20	112	118	92	*484	994	1000	1670	2940	1350	833
18	51	20	112	118	92	456	1000	1010	1660	2990	1380	833
19	52	20	112	*118	72	361	*1000	1010	1690	2870	*1400	838
20	52	19	118	*112	*90	*357	1000	1010	1820	2780	1400	838
21	52	19	118	112	94	354	988	1000	2590	*2640	1400	866
22	52	19	118	112	120	306	982	1010	3010	2430	1240	795
23	52	19	104	112	148	306	988	1010	3300	2200	1280	725
24	*52	19	102	110	142	*309	*988	*1010	*3420	2130	1350	690
25	52	19	102	110	143	303	988	1010	3420	2040	1390	680
26	52	20	102	110	184	303	*994	1010	*3640	2070	1440	*641
27	52	18	102	88	468	306	1080	1010	3660	*2080	1440	548
28	52	18	102	104	468	*306	1080	1010	4980	2070	1400	512
29	52	18	*102	102	-	306	1080	1020	5130	2040	1390	472
30	52	*18	102	102	-	306	1080	1060	5150	2020	1380	387
31	52	-	102	102	-	256	-	1360	-	2070	1390	-
Total	2253	841	3105	3372	3734	13792	18952	33230	72370	102200	54750	24144
Mean	72.7	28.0	100	109	133	445	632	1,072	2,412	3,297	1,766	805
Max.	152	52	118	118	468	650	1,080	1,360	5,150	5,500	2,320	1,390
Min.	50	18	53	88	72	256	131	1,000	1,660	2,020	1,240	387
Ac-ft	4,470	1,670	6,160	6,690	7,410	27,360	37,590	65,910	143,500	202,700	108,600	47,890
tMean	169	353	394	243	395	631	1,963	2,620	1,736	316	426	170
tAc-ft	10,410	21,020	24,210	14,950	21,920	38,810	116,800	161,100	403,300	19,450	26,200	10,100
Calendar year 1960: Max	5,550	Min	18	Mean	1,070	tMean	1,016	Ac-ft	777,200	tAc-ft	737,900	
Water year 1960-61: Max	5,500	Min	18	Mean	912	tMean	785	Ac-ft	660,000	tAc-ft	568,300	

* Discharge measurement made on this day.

† Adjusted for change in storage in Wishon, Courtright, and Pine Flat Reservoirs, and evaporation from Pine Flat Reservoir.

TULARE LAKE BASIN

11-2217. Mill Creek near Piedra, Calif.

Location.--Lat 36°49'05", long 119°20'25", in NE 1/4 sec. 10, T.13 S., R.24 E., on left bank 150 ft upstream from road bridge, 0.7 mile upstream from mouth, and 2.3 miles east of Piedra.

Drainage area.--120 sq mi.

Records available.--October 1957 to September 1961 in reports of Geological Survey. November 1938 to September 1957 in reports of Kings River Water Association.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 550 ft (from topographic map). Prior to July 14, 1958, at site 150 ft upstream at same datum.

Extremes.--Maximum discharge during year, 25 cfs Jan. 27 (gage height, 2.74 ft); no flow for several months.

1957-61: Maximum discharge, 5,000 cfs Mar. 22, 1958 (gage height, 7.29 ft), from rating curve extended above 760 cfs; no flow for several months in each year.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Cooperation.--Six discharge measurements furnished by Kings River Water Association.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Apr. 23, 24)

2.26	0	2.5	5.5
2.3	.4	2.6	12
2.4	1.8	2.8	31

Discharge, in cubic feet per second, water year October 1960 to September 1961											
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1		(*)	* 0	1.0	4.5	3.3	6.5	3.3	0.1		(*)
2			2.7	1.0	4.5	3.3	5.5	3.3	.1		(*)
3			5.5	1.0	4.5	3.3	5.0	3.7	.1		
4			1.8	1.0	4.1	3.3	4.5	3.3	0		
5			1.0	1.0	3.7	3.3	5.0	3.3	0	(*)	(*)
6			.6	1.0	3.7	3.7	4.1	3.7	0		
7			*.5	1.1	3.3	3.3	4.1	5.5	0		
8			.3	1.1	3.3	2.9	3.7	4.5	0		
9			.3	1.1	2.9	* 2.6	3.7	3.7	0		
10			.2	1.1	2.9	2.3	3.3	2.0	0	(*)	
11			.2	1.1	3.3	2.3	* 3.3	1.8	0		
12			.2	1.1	4.5	2.3	2.9	1.4	0		
13			.3	1.1	* 7.0	2.0	2.6	1.3	0		
14			.4	1.1	6.0	2.3	2.6	1.0	0		(*)
15			.4	1.3	5.0	3.7	2.3	.8	0		
16		(*)	.5	1.3	* 4.5	5.5	2.3	.7	0		
17			.5	1.3	4.5	* 7.0	1.8	.6	0	(*)	
18			.6	1.3	4.1	7.0	1.4	.4	0		
19			.6	1.3	4.1	7.0	1.3	.4	0		(*)
20			.6	1.3	3.7	5.5	1.1	.5	0		
21			.6	1.3	3.7	5.0	1.0	.5	0		
22			.7	1.3	3.7	4.5	2.0	.4	0		
23			.8	1.3	3.3	4.1	4.1	.5	0		
24			.8	1.3	3.3	4.5	* 4.1	*.5	0		
25			.8	1.3	3.3	10	3.3	a.5	0		
26			.8	6.3	3.3	12	* 3.3	a.4	* 0		(*)
27			.8	23	3.3	9.4	2.9	a.4	0	(*)	(*)
28			* 1.0	12	3.3	* 9.4	2.6	a.3	0		
29			1.0	7.5	-	9.4	2.6	a.3	0		
30			1.0	* 6.5	-	8.0	2.6	a.2	* 0		
31			1.0	5.0	-	6.5	-	a.1	-		
Total	0	0	26.5	89.4	111.3	158.7	95.5	49.3	0.3	0	0
Mean	0	0	0.85	2.88	3.98	5.12	3.18	1.59	0.01	0	0
Max.	0	0	5.5	23	7.0	12	6.5	5.5	0.1	0	0
Min.	0	0	0	1.0	2.9	2.0	1.0	0.1	0	0	0
Ac-ft	0	0	53	177	221	315	189	98	0.6	0	0

Calendar year 1960 : Max 90 Min 0 Mean 4.05 Acre-feet 2,920

Water year 1960-61 : Max 23 Min 0 Mean 1.45 Acre-feet 1,050

Peak discharge (base, 250 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

TULARE LAKE BASIN

557

11-2245. Los Gatos Creek above Munez Canyon, near Coalinga, Calif.

Location--Lat 36°12'55", long 120°28'10", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 5, T.20 S., R.14 E., on right bank 50 ft downstream from highway bridge, 1.1 miles upstream from Munez Canyon, 3.0 miles downstream from White Creek, and 8 miles northwest of Coalinga.

Drainage area--95.5 sq mi.

Records available--May 1945 to September 1961. Prior to October 1949 monthly discharge only, published in WSP 1315-A.

Gage--Water-stage recorder. Altitude of gage is 1,100 ft (from topographic map). Prior to Aug. 2, 1959, at site 100 ft downstream at same datum.

Average discharge--16 years, 2.86 cfs (2,070 acre-ft per year); median of yearly mean discharges, 0.7 cfs (510 acre-ft per year).

Extremes--Maximum discharge during year, 117 cfs Dec. 1 (gage height, 3.39 ft), from rating curve extended above 8 cfs on basis of 1959 high water rating; no flow for several months.

1949-61: Maximum discharge, 2,560 cfs Apr. 3, 1958 (gage height, 6.51 ft), from rating curve extended above 180 cfs on basis of contracted-opening measurement at peak flow; no flow for several months in each year.

Remarks--Records fair. Minor diversions for irrigation and stock ponds.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.5	0
2.53	.1
2.6	.5
2.7	1.9
2.8	5.3
2.9	12
3.0	23

Discharge, in cubic feet per second, water year October 1960 to September 1961

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			17	0								
2			6.1	0								
3			0	0				(*)				
4			0	0								
5	(*)		0	0						(*)		
6			0	0								
7			0	0								(*)
8			0	0								
9			0	0								
10			0	0								
11			0	0			(*)					
12			0	0								
13			0	0		(*)						
14		(*)	0	0								
15			0	0								
16			0	0								
17			0	*	0							
18			0	0								
19			0	0								
20			0	0								
21			0	0								
22			0	0								
23			0	0								
24			0	0								
25			0	0								
26			0	*1.7								
27			0	.7								
28		(*)	0	0								
29			0	0								
30			0	0								
31			0	0								
Total	0	0	23.1	2.4	0	0	0	0	0	0	0	0
Mean	0	0	0.75	0.08	0	0	0	0	0	0	0	0
Max.	0	0	17	1.7	0	0	0	0	0	0	0	0
Min.	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	46	4.8	0	0	0	0	0	0	0	0
Calendar year 1960 :			Max	32	Min	0	Mean	0.35	Acre-feet		256	
Water year 1960-61 :			Max	17	Min	0	Mean	0.07	Acre-feet		51	
Peak discharge (base, 40 cfs).--Dec. 1 (7 p.m.) 117 cfs (3.39 ft).												

* Observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-2260. North Fork San Joaquin River below Iron Creek, Calif.

Location.--Lat 37°36'50", long 119°14'00", in SE $\frac{1}{4}$ sec. 4, T.4 S., R.25 E., on right bank 0.8 mile downstream from Iron Creek and 27 miles northeast of town of Bass Lake.

Drainage area.--38.0 sq mi.

Records available.--October 1920 to September 1928 (fragmentary prior to July 1921), October 1951 to September 1958 (no winter records), October 1958 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 6,800 ft (from topographic map). Prior to May 22, 1922, staff gages at approximately same site at different datums.

Average discharge.--10 years (1921-28, 1958-60), 100 cfs (72,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,990 cfs Aug. 21 (gage height, 7.84 ft); minimum, 4.2 cfs Oct. 6, Nov. 3.
1920-28, 1951-61: Maximum discharge recorded, 3,860 cfs July 24, 1956 (gage height, 8.15 ft), from rating curve extended above 1,100 cfs; minimum, 0.4 cfs Nov. 13, 1955.

Remarks.--Records good except those for periods of ice effect, which are fair. No storage or diversion.

Cooperation.--Water-stage-recorder graph and seven discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.5	3.4	4.5	60
3.6	6.0	5.0	138
4.0	21	5.5	285
4.2	33	6.0	535

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			25	12	18	20	84	174	97	44	18	16
2	5.5	4.4	32	11	16	22	154	152	124	45	18	15
3	5.5	4.4	32	11	16	22	154	152	124	45	18	15
4	5.2	8.7	29	11	16	23	257	179	138	83	19	14
5	5.0	11	27	11	16	23	305	150	179	100	19	12
6	* 4.7	12	25	10	20	21	293	109	257	64	46	12
7												
8	135	17	23	10	22	20	234	87	278	46	64	12
9	68	18	21	10	19	22	161	105	289	40	35	11
10	30	18	21	9	19	23	128	136	282	39	* 27	9.7
11	21	18	21	9	23	22	126	174	240	40	22	9.4
12	18	19	20	10	37	20	100	143	220	41	21	8.4
13												
14	20	18	19	11	55	22	126	100	202	43	30	8.1
15	20	16	18	12	35	23	124	80	190	40	41	7.8
16	18	16	18	11	26	28	97	100	208	35	35	7.2
17	14	16	18	13	26	34	116	171	217	* 32	26	6.9
18	11	18	16	14	26	32	169	227	* 214	30	21	6.9
19												
20	10	20	15	14	24	29	230	224	205	29	19	17
21	9.4	25	15	15	20	30	230	224	196	28	19	4.5
22	8.7	29	14	15	17	27	174	230	179	27	14	4.9
23	8.1	26	14	15	19	28	105	199	171	26	16	4.3
24	7.8	28	15	16	20	35	76	234	166	26	16	3.5
25												
26	7.8	30	17	14	25	45	61	301	145	25	254	28
27	7.2	26	19	13	29	63	56	317	124	24	154	22
28	6.9	22	20	13	23	90	54	317	122	24	118	17
29	6.6	23	20	13	23	49	59	* 330	114	25	66	15
30	6.3	24	18	13	22	40	68	309	100	25	40	13
31												
32	5.8	22	18	16	20	33	76	224	89	24	29	12
33	5.2	21	17	19	18	32	94	211	92	23	24	11
34	5.2	22	14	16	18	28	122	208	71	23	21	18
35	5.0	22	14	18	—	30	143	171	52	22	18	18
36	4.7	22	14	19	—	44	154	107	44	20	16	15
37	4.7	13	20	20	—	55	—	107	—	18	16	15
Total	490.3	576.5	590	413	652	1,024	4,176	5,800	5,005	1,111	1,282	514.4
Mean	15.8	19.2	19.0	13.3	23.3	33.0	139	187	176	35.8	41.4	17.1
Max.	135	30	32	20	55	90	305	330	289	100	254	49
Min.	4.7	4.4	13	9	16	20	54	80	44	18	14	6.9
Ac-ft	572	1,140	1,170	419	1,290	2,032	8,280	11,500	9,930	2,200	2,540	1,032

Calendar year 1960:

Max 628

Min -

Mean 83.3

Acre-feet 60,470

Water year 1960-61:

Max 330

Min 4.4

Mean 59.3

Acre-feet 42,890

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 12-17, 26-30, Dec. 28 to Jan. 13, Jan. 28, 29, Feb. 3, 4, 13, 17-19.

11-2265. San Joaquin River at Miller Crossing, Calif.

Location--Lat 37°30'35", long 119°11'50", in NE 1/4 sec. 11, T.5 S., R.25 E., on right bank 2.4 miles downstream from North Fork San Joaquin River, 4.6 miles east of Clover Meadow ranger station, and 23 miles northeast of town of Bass Lake.

Drainage area--254 sq mi.

Records available--October 1921 to September 1928, October 1951 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as Middle Fork San Joaquin River at Miller Bridge.

Gage--Water-stage recorder. Altitude of gage is 4,570 ft (from topographic map). Prior to Mar. 24, 1922, staff gage at same site and datum.

Average discharge--17 years, 558 cfs (404,000 acre-ft per year).

Extremes--Maximum discharge during year, 1,650 cfs May 24 (gage height, 13.80 ft); minimum, 35 cfs Oct. 1.

1921-28, 1951-61: Maximum discharge, 16,600 cfs Dec. 23, 1955 (gage height, 21.28 ft), from rating curve extended above 5,100 cfs on basis of contracted-opening measurement of peak flow; minimum recorded, 21 cfs Dec. 14, 1959.

Remarks--Records good. No storage or diversion.

Cooperation--Water-stage-recorder graph and eight discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

(Stage-discharge relation affected by ice Jan. 4, 5)

8.9	32	11.0	290
9.3	54	12.0	590
9.5	67	13.0	1,090
10.0	119	14.0	1,810
10.5	194		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	36	38	313	71	101	119	367	815	650	244	82	76
2	37	38	254	64	105	132	511	785	666	236	80	71
3	36	46	173	63	101	136	800	860	690	286	82	65
4	*37	55	165	63	101	137	1,020	795	785	382	83	59
5	37	58	146	61	102	129	1,020	650	1,000	305	100	57
6	149	77	123	61	111	123	895	573	1,160	254	192	*55
7	198	73	115	61	105	132	755	626	1,220	223	189	52
8	118	69	120	57	107	143	606	674	1,230	207	144	50
9	90	70	113	56	111	144	610	805	1,130	198	120	49
10	86	71	109	57	161	132	531	*800	1,040	192	*109	46
11	85	72	104	58	328	136	562	666	970	192	133	43
12	89	114	100	63	232	134	646	559	*895	*186	194	42
13	82	81	98	62	188	153	517	559	900	175	164	41
14	73	136	96	68	165	178	545	725	922	167	129	40
15	61	149	92	74	165	198	678	905	875	153	113	39
16	58	140	88	73	159	178	890	994	845	144	102	41
17	55	134	88	74	139	208	988	1,070	820	140	94	143
18	53	134	86	76	130	186	905	1,130	775	137	86	129
19	52	123	82	77	119	184	885	988	720	133	84	127
20	50	114	81	79	125	207	534	1,000	682	129	88	111
21	49	118	88	75	132	226	466	1,220	638	120	195	98
22	48	106	95	71	153	270	430	1,350	576	111	288	88
23	47	101	95	71	130	436	421	1,320	531	109	358	78
24	46	101	98	72	133	318	412	1,350	514	110	249	69
25	44	106	93	74	133	278	433	1,390	469	122	175	64
26	43	93	93	109	120	252	448	1,220	424	115	140	59
27	42	96	92	102	111	254	496	1,080	421	110	118	56
28	41	107	82	96	114	225	573	1,100	373	106	105	65
29	40	116	80	98	-----	225	658	1,010	300	101	92	89
30	39	105	80	100	-----	246	698	750	264	94	85	74
31	38	-----	76	109	-----	308	-----	698	-----	88	80	-----
TOTAL	1,959	2,841	3,518	2,295	3,881	6,127	19,300	28,467	22,485	5,269	4,252	2,076
MEAN	63.2	94.7	113	74.0	139	198	643	918	750	170	137	69.2
MAX	198	149	313	109	328	436	1,020	1,390	1,230	382	358	143
MIN	36	38	76	56	101	119	367	559	264	88	80	39
AC-FT	3,890	5,640	6,980	4,550	7,700	12,150	38,280	56,460	44,600	10,450	8,430	4,120

CALENDAR YEAR 1960: MAX 2,110 MIN - MEAN 339 AC-FT 246,100
 WATER YEAR 1960-61: MAX 1,390 MIN 36 MEAN 281 AC-FT 279,200

Peak discharge (base, 2,000 cfs)--No peak above base.

* Discharge measurement made on this day.

11-2285. Granite Creek near Cattle Mountain, Calif.

Location--Lat 37°31'35", long 119°15'30", in NE 1/4 sec. 5, T. 5 S., R. 25 E., on right bank 0.7 mile downstream from confluence of East and West Forks of Granite Creek, 1.6 miles northwest of Cattle Mountain, and 21 miles northeast of town of Bass Lake.

Drainage area--47.8 sq mi.

Records available--October 1921 to September 1928, May 1952 to September 1961 (no winter records). Monthly discharge only for some periods, published in WSP 1315-A.

Gage--Water-stage-recorder. Altitude of gage is 6,800 ft (from topographic map). Prior to May 14, 1922, staff gage at same site at different datum.

Average discharge--7 years (1921-28), 110 cfs (79,640 acre-ft per year).

Extremes--Maximum discharge recorded during year, 652 cfs Apr. 4, 16 (gage height, 7.37 ft); minimum daily, 0.2 cfs Aug. 2-5, Sept. 8-16.

1921-28, 1952-61: Maximum discharge recorded, 2,210 cfs June 27, 1922 (gage height 8.83 ft); no flow at times in 1924, 1926.

Remarks--Records good except those for period of ice effect, which are fair. No regulation or diversion.

Cooperation--Water-stage-recorder graph and 11 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.8	0	4.3	6.0	5.5	96
3.9	.3	4.5	12	6.0	170
4.0	.9	4.7	22	6.5	280
4.1	1.9	5.0	42	7.0	460
4.2	3.6				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	0.6					116	253	129	5.5	0.3	1.1
2	.6	.6					189	236	175	4.6	2	.9
3	.5	1.1					334	286	175	7.2	2	.7
4	*.5	1.8					420	234	159	17	2	.5
5	.4	2.1					*395	164	165	14	2	.5
6	6.3	4.1					325	141	168	9.4	.7	.4
7	4.8	5.0					243	156	159	6.6	.8	*.3
8	2.1	*5.0					196	182	148	5.3	.6	.2
9	1.6	5.8					206	236	126	4.1	*.5	.2
10	1.6	6.0					185	214	117	3.4	.4	.2
11	1.6	6.3		† 9.7			234	162	105	3.1	.3	.2
12	1.4	6.3					225	*132	85	*2.8	2.4	.2
13	1.5	1.3					162	154	*88	2.6	6.0	.2
14	1.4						178	241	85	2.4	2.9	.2
15	1.3						262	280	76	2.1	1.8	.2
16	1.1						375	268	70	1.9	1.3	.2
17	.9						395	265	58	1.9	.9	1.4
18	.9						286	*271	51	1.8	.7	6.0
19	.8						173	234	42	1.7	.5	4.1
20	.8					56	128	227	37	1.5	.5	3.1
21	.8	b 12				72	106	271	31	1.3	.4	2.2
22	.7					*99	92	256	26	1.1	3.5	1.8
23	.7					132	92	232	22	.8	37	1.6
24	.7					82	90	232	20	.8	14	1.4
25	.7					66	96	210	16	.8	6.3	1.1
26	.7					55	116	173	14	1.2	3.6	.8
27	.7					52	151	151	11	.8	2.6	.7
28	.7					46	187	151	10	.7	2.1	1.1
29	.7					46	212	156	8.4	.6	1.6	1.4
30	.7					57	227	109	6.9	.5	1.3	1.1
31	.6					84		104		.4	1.1	
Total	38.5	261.7					5396	5381	2383.3	1079	148.0	34.0
Mean	1.24	8.72					213	206	79.4	3.48	4.77	1.13
Max.	6.3						420	286	175	17	37	6.0
Min.	0.4	0.6					90	104	6.9	0.4	0.2	0.2
Ac-ft	76	519					12,690	12,660	4,730	214	294	67

Calendar year 1960

Water year 1960-61

Max

Max

Min

Min

Mean

Mean

Acres-feet

Acres-feet

* Discharge measurement made on this day.

† Result of discharge measurement.

b Stage-discharge relation affected by ice.

11-2295. Ward tunnel at intake, Calif.

Location.--Lat 37°16', long 118°58', in NW¹/₄ sec.1, T.8 S., R.27 E., in gatehouse at entrance to tunnel.Records available.--April 1925 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1936, published as Florence Lake tunnel at intake.Gage.--Water-stage recorder, concrete control, and Venturi meter. Datum of gage is 7,213.89 ft above mean sea level (levels by Southern California Edison Co.).Average discharge.--36 years, 266 cfs (192,600 acre-ft per year).Extremes.--1925-61: Maximum daily discharge, 1,990 cfs Apr. 30, 1926; no flow at times.Remarks.--Records excellent. Ward tunnel diverts from Florence Lake, a reservoir on South Fork San Joaquin River, to Huntington Lake for use in Big Creek powerplants.Cooperation.--Water-stage-recorder graph, two discharge measurements, and rating table for Venturi meter furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	16	48	21	27	35	93	251	330	539	554	96
2	16	* 16	68	20	30	38	113	282	330	535	544	89
3	18	18	60	20	30	41	182	302	333	533	579	83
4	17	23	64	19	30	42	261	324	333	530	514	70
5	16	24	62	18	30	42	308	327	333	528	373	72
6	16	31	51	17	31	42	307	316	286	524	257	63
7	23	32	46	18	30	39	* 280	300	237	489	236	61
8	28	31	46	18	30	45	222	288	241	462	178	54
9	13	31	46	18	32	44	204	301	216	457	137	53
10	.5	31	43	18	36	41	177	326	191	452	120	49
11	.4	30	41	18	52	40	163	340	191	450	206	48
12	.4	36	38	18	48	39	194	339	257	445	276	44
13	.4	31	37	18	44	41	184	209	289	438	254	39
14	.4	46	36	18	45	46	190	.9	290	433	210	38
15	.4	57	34	18	45	51	204	296	290	502	170	39
16	.4	57	32	18	42	49	272	405	292	493	145	21
17	.4	52	32	18	39	59	327	349	294	486	123	.3
18	.4	52	31	18	34	55	316	310	300	484	107	.4
19	.4	47	30	18	35	58	255	346	300	478	100	.4
20	.4	44	30	18	37	62	276	352	361	516	94	.3
21	.4	43	30	18	37	63	251	361	381	533	124	.3
22	.4	38	30	18	39	72	221	355	413	524	175	.3
23	.4	39	30	18	36	88	190	290	428	516	247	85
24	.4	39	29	18	37	82	158	257	431	558	283	125
25	.4	38	27	18	37	78	167	262	431	568	249	102
26	.4	33	27	20	36	77	156	265	431	558	272	95
27	70	31	26	22	34	79	154	268	462	593	196	37
28	175	36	24	22	34	75	162	253	480	633	154	.3
29	107	42	24	24	—	70	187	253	480	614	121	.4
30	34	39	24	26	—	75	212	272	504	607	121	.4
31	19	23	23	27	—	84	293	293	—	562	113	—
Total	575.9	1083	1169	598	1017	1752	6386	9092.9	10135	16040	7232	1368.1
Mean	18.6	36.1	37.7	19.3	36.3	56.5	213	293	338	517	233	45.6
Max.	175	57	68	27	52	88	327	405	504	633	579	125
Min.	0.4	16	23	17	27	35	93	0.9	191	433	94	0.3
Ac-ft	1,140	2,150	2,320	1,190	2,020	3,480	12,670	18,040	20,100	31,810	14,340	2,710
Calendar year 1960:			Max 595	Min 0.4	Mean 176			Acra-feet 128,000				
Water year 1960-61:			Max 633	Min 0.3	Mean 155			Acra-feet 112,000				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2296. Florence Lake near Big Creek, Calif.

Location.--Lat 37°16', long 118°58', in NW¼ sec.1, T.8 S., R.27 E., in gatehouse of Ward tunnel intake, near dam on South Fork San Joaquin River, 16 miles northeast of town of Big Creek.

Drainage area.--171 sq mi.

Records available.--November 1925 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

Extremes.--Maximum contents during year, 31,300 acre-ft June 23, 25; maximum elevation, 7,289.09 ft June 25; minimum contents, 229 acre-ft Jan. 20 (elevation, 7,224.37 ft).

1925-61: Maximum contents, 66,000 acre-ft July 3, 1932 (elevation, 7,329.14 ft); no available contents Oct. 2-4, 1926, Nov. 30 to Dec. 2, 1927.

Note.--Prior to 1960 maximum and minimum daily contents were published.

Remarks.--Lake is formed by multiple-arch concrete dam; storage began in April 1925. Usable capacity, 64,400 acre-ft between elevations 7,220.9 (throat of Venturi tube in Ward tunnel intake) and 7,327.5 ft (top of spillway drum gates) above mean sea level. Additional storage of 158 acre-ft is not available for diversion. Water is diverted through Ward tunnel to Huntington Lake and used for power development in Big Creek plants. Figures given herein represent usable contents.

Cooperation.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-feet)

7,224	201	7,250	6,650
7,225	281	7,260	11,600
7,230	887	7,270	17,800
7,235	1,770	7,280	24,600
7,240	2,980	7,290	32,000
7,245	4,670		

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	235	231	311	240	249	255	327	718	14,500	28,900	4,050	348
2	237	231	282	239	249	261	377	838	14,900	28,200	3,010	334
3	235	239	268	238	248	263	490	989	15,400	27,500	2,010	322
4	234	242	293	237	249	263	592	1,100	15,900	26,900	1,080	322
5	233	243	284	236	249	263	628	1,040	16,600	26,300	659	309
6	235	257	273	235	249	263	603	937	17,800	25,500	515	306
7	255	251	272	235	248	268	542	849	19,200	24,900	464	298
8	253	252	272	236	248	267	475	839	20,600	24,200	397	298
9	272	253	269	237	251	265	451	996	21,900	23,600	367	293
10	333	252	267	237	258	263	415	1,150	23,000	23,000	389	290
11	391	250	264	238	280	262	426	1,200	24,100	22,300	542	285
12	451	261	263	237	267	262	470	1,100	25,000	21,700	560	280
13	506	254	261	236	267	266	471	1,180	25,800	21,000	499	280
14	554	278	258	237	266	269	465	1,870	26,600	20,400	441	276
15	586	276	257	235	264	275	533	2,170	27,400	19,600	400	271
16	623	279	255	236	263	281	650	2,370	28,200	18,900	374	305
17	662	279	254	235	260	281	732	2,880	29,000	18,100	359	434
18	696	277	254	235	258	281	798	3,650	29,800	17,300	346	548
19	726	271	253	234	261	281	814	4,170	30,400	16,500	343	645
20	755	270	251	235	258	282	704	4,520	30,800	15,700	362	735
21	784	267	252	234	258	289	572	5,200	31,100	14,800	400	811
22	814	266	252	233	259	301	477	6,020	31,200	13,900	550	886
23	842	263	252	233	257	315	413	6,850	31,300	13,000	715	788
24	869	263	252	234	257	302	414	8,050	31,200	12,100	756	599
25	895	259	250	234	257	304	403	9,290	31,300	11,100	685	456
26	923	253	249	235	255	303	391	10,300	31,100	10,200	510	310
27	812	255	246	242	254	303	390	11,300	30,900	9,240	429	293
28	482	264	246	241	254	298	409	12,400	30,500	8,170	388	369
29	281	266	246	244	-----	295	455	13,300	30,100	7,140	380	444
30	245	263	245	245	-----	302	429	13,700	29,500	6,110	367	510
31	234	-----	242	249	-----	314	-----	14,200	-----	5,110	351	-----
(†)	7,224.43	7,224.77	7,224.52	7,224.60	7,224.66	7,225.34	7,226.43	7,264.33	7,286.77	7,246.18	7,225.71	7,227.12
(‡)	-1	+29	-21	+7	+5	+60	+115	+13,770	+15,300	-24,390	-4,760	+159

Calendar year 1960..... ‡ 0

Water year 1960-61..... ‡ +275

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

11-2300. South Fork San Joaquin River near Florence Lake, Calif.

Location.--Lat 37°16'20", long 118°57'50", in SE $\frac{1}{4}$ sec. 36, T.7 S., R.27 E., on left bank just downstream from spillway of Florence Lake Dam and 6 miles upstream from Bear Creek.

Drainage area.--171 sq mi.

Records available.--October 1921 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1925, published as "near Lake Florence."

Gage.--Water-stage recorder with thermograph attachment, Parshall flume and concrete control. Altitude of gage is 7,200 ft (from topographic map).

Average discharge.--40 years, 302 cfs (218,600 acre-ft per year), combined flow of South Fork San Joaquin River and Ward tunnel at intake.

Extremes.--Maximum discharge during year, 15 cfs Aug. 6 (gage height, 9.43 ft); minimum daily, 2.8 cfs many days during several months.

1921-61: Maximum discharge, 4,320 cfs June 6, 1940 (gage height, 15.38 ft); no flow at times.

Remarks.--Records good. Flow regulated by Florence Lake beginning in 1925 (see preceding page) and by diversion into Ward tunnel (see p. 56J).

Cooperation.--Water-stage-recorder graph and two discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage-height, in feet, and discharge, in cubic feet per second)

8.3	2.4
8.4	3.2
8.5	4.0
8.8	7.0

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.8	3.6	3.6	2.8	2.8	2.8	2.8	3.4	5.9	6.4	4.9	4.1
2	4.8	2.8	3.1	2.8	2.8	2.8	2.9	4.2	5.9	6.3	4.8	4.0
3	4.8	3.3	3.0	2.8	2.8	2.8	2.9	4.2	5.8	6.5	4.6	4.0
4	4.8	2.9	2.9	2.8	2.8	2.8	2.9	4.3	5.8	6.3	4.5	4.0
5	4.8	2.9	2.9	2.8	2.8	2.8	2.9	4.3	5.9	6.3	4.5	4.0
6	4.9	3.1	2.8	2.8	2.8	2.8	2.9	4.3	5.9	6.3	4.4	4.0
7	4.9	2.9	2.8	2.8	2.8	2.8	2.9	4.3	5.9	6.2	4.1	3.9
8	4.9	2.9	2.8	2.8	2.8	2.8	2.9	4.2	6.0	6.2	4.0	3.9
9	5.0	2.8	2.8	2.8	2.9	2.8	2.9	4.2	6.1	6.2	4.0	3.9
10	5.0	2.8	2.8	2.8	2.8	2.8	2.8	4.3	6.1	6.1	4.1	3.9
11	5.0	2.9	2.8	2.8	3.1	2.8	2.8	4.3	6.2	6.1	4.1	3.9
12	5.1	3.0	2.8	2.8	2.8	2.8	2.9	4.3	6.2	6.1	4.1	3.9
13	5.1	3.0	2.8	2.8	2.8	2.8	2.9	4.3	6.2	6.0	4.0	3.9
14	5.1	3.0	2.8	2.8	2.8	2.8	2.9	4.4	6.3	6.0	4.0	3.9
15	5.1	3.0	2.8	2.8	2.8	2.9	2.9	4.5	6.3	5.9	4.0	3.9
16	5.1	3.0	2.8	2.8	2.8	2.8	2.9	4.6	6.4	5.9	3.9	4.0
17	5.2	2.9	2.8	2.8	2.8	2.8	3.0	4.6	6.4	5.8	3.9	4.1
18	5.2	3.0	2.8	2.8	2.8	2.8	3.0	4.7	6.4	5.8	3.8	4.1
19	5.2	2.9	2.8	2.8	2.8	2.8	3.0	4.9	6.5	5.8	3.8	4.1
20	5.2	2.9	2.8	2.8	2.8	2.8	3.0	4.9	6.5	5.7	3.8	4.2
21	5.2	2.9	2.8	2.8	2.8	2.8	2.9	4.9	6.5	5.7	4.0	4.2
22	5.2	2.9	2.8	2.8	2.8	2.8	3.0	5.0	6.5	5.7	4.9	4.3
23	5.2	2.9	2.8	2.8	2.8	2.9	3.0	5.1	6.5	5.6	4.8	4.3
24	5.3	2.9	2.8	2.8	2.8	2.9	2.9	5.3	6.5	5.6	4.7	4.2
25	5.3	2.8	2.8	2.8	2.8	3.0	2.9	5.3	6.7	5.6	4.7	4.1
26	5.3	2.9	2.8	2.9	2.8	2.9	2.9	5.4	6.5	5.5	4.5	4.0
27	5.2	2.9	2.8	2.9	2.8	2.9	2.9	5.5	6.5	5.5	4.1	3.9
28	5.2	2.9	2.8	2.8	2.8	2.9	2.8	5.6	6.4	5.4	4.1	3.9
29	5.0	2.9	2.8	2.8	-----	2.9	2.8	5.7	6.4	5.3	4.1	4.0
30	4.9	2.9	2.8	2.8	-----	2.8	2.8	5.7	6.4	5.2	4.1	4.0
31	4.9	-----	2.8	2.8	-----	2.8	-----	6.0	-----	5.1	4.1	-----
TOTAL	156.7	88.2	88.3	87.0	78.8	87.7	87.0	146.7	187.6	182.1	131.4	120.6
MEAN	5.05	2.94	2.85	2.81	2.81	2.83	2.90	4.73	6.25	5.87	4.24	4.02
MAX	5.3	3.6	3.6	2.9	3.1	3.0	3.0	6.0	6.7	6.5	4.9	4.3
MIN	4.8	2.8	2.8	2.8	2.8	2.8	2.8	3.4	5.8	5.1	3.8	3.9
AC-FT	311	175	175	173	156	174	173	291	372	361	261	239
CALENDAR YEAR	1960: MAX 7.4			MIN 2.8			MEAN 4.43			AC-FT 3,220		
WATER YEAR 1960-61:	MAX 6.7			MIN 2.8			MEAN 3.95			AC-FT 2,860		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2300. South Fork San Joaquin River near Florence Lake, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	54	54	46	45	39	37	34	34	36	35	37	36	43	40	49	47	48	48	52	51	59	58	62	59
2	54	54	46	45	37	37	34	34	35	33	39	38	44	40	49	45	48	47	51	51	59	59	62	59
3	54	54	46	46	37	36	34	34	35	33	40	38	44	41	49	46	48	46	52	51	59	59	62	59
4	54	54	45	45	37	36	34	34	35	34	40	39	44	41	49	45	48	46	52	51	59	59	62	55
5	54	54	45	44	37	36	34	33	36	34	39	38	45	42	47	45	48	46	54	51	61	59	62	59
6	54	54	44	42	36	35	34	34	36	34	39	38	45	42	46	45	49	47	54	52	61	60	62	59
7	54	54	42	42	35	34	34	34	36	34	38	37	46	42	48	44	48	47	54	52	61	60	61	59
8	53	53	42	42	35	34	34	34	36	34	38	37	45	41	48	44	48	47	54	52	61	60	61	60
9	53	53	42	40	35	34	34	34	36	35	39	36	45	42	47	44	48	47	54	53	61	60	61	59
10	51	49	41	40	35	34	34	34	36	33	40	38	47	42	48	44	48	47	54	53	61	61	60	57
11	49	48	44	40	35	34	34	34	36	33	39	38	47	42	48	44	48	47	55	53	61	61	60	57
12	48	48	44	42	35	34	34	34	36	34	40	38	46	44	46	44	49	48	53	53	61	59	59	57
13	48	48	42	40	35	34	35	34	35	34	40	38	47	42	48	44	49	48	54	53	59	58	60	57
14	48	47	40	39	35	34	35	34	35	34	41	38	48	43	47	44	50	49	55	53	59	58	60	57
15	47	47	40	39	35	34	35	34	35	34	40	38	49	44	48	44	50	49	55	53	60	58	60	58
16	47	47	40	39	35	34	35	35	36	33	39	38	48	45	48	44	50	49	55	55	61	59	59	58
17	47	47	40	39	35	34	35	35	36	34	40	38	49	46	47	45	50	49	55	55	61	60	59	57
18	47	47	41	39	35	34	35	35	35	34	41	38	50	46	47	45	50	49	56	55	61	60	58	56
19	47	47	39	39	35	34	35	35	36	33	41	38	48	45	47	45	50	49	57	55	61	61	57	56
20	47	47	39	39	36	34	35	34	36	34	42	39	48	44	49	45	50	50	57	55	61	61	56	54
21	46	46	39	39	37	35	35	34	36	35	42	39	47	44	49	45	51	50	57	56	64	61	55	54
22	46	46	39	39	36	35	35	35	36	35	41	39	46	44	49	46	50	50	57	56	63	62	56	54
23	46	46	38	38	36	35	36	35	36	35	41	40	43	42	49	46	51	50	57	56	62	61	56	54
24	46	46	39	38	35	35	36	35	36	35	40	39	46	42	49	46	51	50	57	57	61	61	56	54
25	46	46	39	38	35	35	36	35	36	34	40	40	45	42	49	47	52	51	57	57	61	61	56	54
26	46	46	41	37	35	34	38	36	37	35	40	38	47	44	48	48	52	51	57	57	61	60	56	54
27	46	46	40	38	34	34	37	37	37	35	39	38	47	44	49	48	51	51	57	57	60	59	56	55
28	46	46	38	37	34	34	37	36	37	35	41	38	49	44	49	48	51	51	58	57	62	60	57	55
29	46	46	38	37	34	34	36	35	-	-	42	38	50	45	49	48	51	50	58	57	61	59	57	55
30	46	46	37	36	34	34	36	35	-	-	42	39	50	45	47	47	51	50	58	57	60	59	56	55
31	46	46	---	---	34	34	36	35	-	-	42	39	-	-	48	47	---	---	58	57	61	59	---	---
Avg	49	49	41	40	35	35	35	35	36	34	40	38	47	43	48	45	50	49	55	54	61	60	59	57

11-2305. Bear Creek near Lake Thomas A. Edison, Calif.

Location.--Lat 37°20'20", long 118°58'20", in SW 1/4 sec. 12, T.7 S., R.27 E. (unsurveyed), on right bank 0.2 mile upstream from diversion dam, 1.7 miles upstream from mouth, 2.1 miles south of Lake Thomas A. Edison, and 2.4 miles northeast of Mono Hot Springs

Drainage area.--53.5 sq mi.

Records available.--October 1921 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

Gage.--Water-stage recorder. Altitude of gage is 7,400 ft (from topographic map).

Average discharge.--40 years, 86.2 cfs (62,410 acre-ft per year).

Extremes.--Maximum discharge during year, 394 cfs June 16 (gage height, 5.02 ft); minimum, 3.0 cfs Oct. 15.
1921-61: Maximum discharge, 1,680 cfs July 26, 1956 (gage height, 7.12 ft); minimum recorded, 1.2 cfs Sept. 29 to Oct. 5, 1924.

Remarks.--Records good except those for periods of ice effect, which are fair. No storage or diversion above station.

Cooperation.--Water-stage-recorder graph and 15 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 17-20)

2.9	2.0	3.8	71
3.0	4.0	4.0	100
3.1	7.0	4.5	205
3.2	11	5.0	385
3.4	25		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.6	3.8	14	8.2	*11	11	41	100	138	57	15	19
2	3.8	*3.8	14	7.8	11	12	57	100	153	53	14	18
3	*3.6	5.2	16	7.8	11	12	84	110	160	65	14	16
4	4.0	6.1	21	7.4	11	12	105	106	157	74	*13	13
5	4.0	6.1	22	*7.4	11	12	103	*84	*187	62	16	12
6	4.0	9.0	17	7.4	11	13	*91	75	229	54	37	12
7	5.2	9.0	*16	7.4	11	14	78	82	281	47	46	10
8	4.9	9.4	15	7.4	11	*15	65	93	313	43	38	9.4
9	4.6	9.4	14	7.4	12	13	65	113	281	38	32	9.0
10	5.2	9.4	14	7.4	14	12	56	111	*232	*37	33	8.6
11	6.4	8.6	13	7.4	15	12	59	100	226	36	63	7.8
12	7.0	9.4	12	7.4	14	12	70	81	214	35	70	7.4
13	6.7	9.0	12	7.4	15	13	59	72	226	34	66	6.7
14	5.8	16	12	7.4	14	15	61	102	235	31	52	6.4
15	4.6	20	12	7.4	14	14	75	132	229	29	44	6.1
16	4.6	18	11	7.4	13	16	105	151	249	27	36	6.1
17	5.2	17	11	7.4	12	16	118	160	246	26	30	12
18	4.9	17	11	7.4	11	18	106	157	226	25	26	15
19	4.6	15	10	7.4	12	19	77	149	211	24	24	16
20	4.3	14	10	7.4	12	20	63	138	172	23	23	*15
21	4.3	14	10	7.4	12	23	53	192	172	21	23	15
22	4.0	13	11	7.4	12	26	44	229	153	19	25	16
23	4.0	13	11	7.4	12	34	47	242	138	19	33	16
24	4.0	12	11	7.4	11	25	48	267	129	19	32	15
25	4.0	12	10	7.4	11	23	47	267	120	21	28	14
26	4.0	11	10	7.8	10	23	*43	232	105	20	25	13
27	3.8	12	10	8.2	10	23	45	214	103	24	23	12
28	3.8	14	9.4	8.2	9.8	23	53	223	91	21	21	13
29	3.8	14	9.0	8.6	-----	29	67	189	77	19	19	18
30	3.8	13	8.6	9.4	-----	27	77	140	*66	17	19	16
31	3.8	-----	8.6	10	-----	38	-----	132	-----	15	20	-----
TOTAL	140.3	343.2	385.6	238.8	333.8	569	2,057	4,543	5,519	1,035	960	373.5
MEAN	4.53	11.4	12.4	7.70	11.9	18.4	68.6	147	184	33.4	31.0	12.5
MAX	7.0	20	22	19	15	38	118	267	313	74	70	19
MIN	3.6	3.8	8.6	7.4	9.8	11	41	72	66	15	13	6.1
AC-FT	278	681	765	474	662	1,130	4,080	9,010	10,950	2,050	1,900	741

CALENDAR YEAR 1960: MAX 335 MIN 3.6 MEAN 49.5 AC-FT 35,940
WATER YEAR 1960-61: MAX 313 MIN 3.6 MEAN 49.2 AC-FT 32,720

Peak discharge (base, 440 cfs)--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 13 to Feb. 14, Feb. 17-19, Mar. 7, 8, 16, 18.

SAN JOAQUIN RIVER BASIN

11-2310. Lake Thomas A. Edison near Big Creek, Calif.

Location.--Lat 37°22'10", long 118°59'15", in sec.26, T.6 S., R.27 E., (unsurveyed), in outlet works of dam on Mono Creek at lower end of Vermilion Valley, 18.1 miles northeast of town of Big Creek.

Drainage area.--88.9 sq mi.

Records available.--October 1954 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.).

Extremes.--Maximum contents during year, 53,700 acre-ft July 7 (elevation, 7,599.94 ft); minimum, 18,600 acre-ft Feb. 19-23; minimum elevation, 7,570.50 ft Feb. 20.

1954-61: Maximum contents, 125,900 acre-ft Aug. 18, 1958 (elevation, 7,642.95 ft); minimum since appreciable storage was attained, 14,500 acre-ft May 2, 1958 (elevation, 7,566.03 ft).

Note.--Prior to 1960, maximum and minimum daily contents were published.

Remarks.--Lake is formed by earth-fill dam; dam completed and storage began on Oct. 12, 1954. Usable capacity, 125,000 acre-ft between elevations 7,508.9 (invert of outlet works) and 7,642.5 ft (top of gates in service spillway) above mean sea level. Water is released for diversion to Ward tunnel via Mono Creek diversion works. Figures given herein represent usable contents.

Cooperation.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-ft)

7,570	18,100	7,590	40,500
7,580	28,500	7,600	53,800

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44.0	38.7	28.3	22.9	19.9	18.8	20.3	26.6	39.7	52.9	52.0	50.8
2	43.5	38.1	28.2	22.8	19.9	18.8	20.4	26.8	40.1	53.0	51.9	50.7
3	43.2	37.5	27.9	22.7	19.8	18.8	20.6	27.2	40.5	53.2	51.8	50.6
4	42.8	37.0	27.7	22.5	19.7	18.8	20.8	27.5	40.9	53.4	51.8	50.5
5	42.3	36.6	27.5	22.4	19.6	18.9	21.0	27.7	41.4	53.5	51.7	50.4
6	42.0	36.3	27.2	22.3	19.5	18.9	21.3	28.0	42.0	53.6	51.7	50.3
7	41.6	35.8	26.9	22.2	19.5	18.9	21.5	28.2	42.7	53.6	51.8	50.2
8	41.5	35.4	26.7	22.1	19.4	19.0	21.8	28.5	43.5	53.4	51.7	50.1
9	41.5	34.9	26.5	22.0	19.3	19.0	22.0	28.8	44.2	53.3	51.7	50.0
10	41.5	34.5	26.3	21.9	19.3	19.0	22.1	29.1	44.8	53.1	51.6	49.8
11	41.4	34.0	26.0	21.8	19.2	19.0	22.3	29.4	45.3	52.9	51.6	49.8
12	41.4	33.7	25.8	21.6	19.2	19.1	22.5	29.7	45.9	52.7	51.7	49.6
13	41.4	33.3	25.6	21.5	19.1	19.1	22.7	29.9	46.5	52.5	51.7	49.5
14	41.4	32.9	25.4	21.4	19.0	19.1	22.9	30.2	47.1	52.3	51.7	49.4
15	41.3	32.5	25.1	21.3	19.0	19.2	23.1	30.5	47.6	52.3	51.6	49.3
16	41.3	32.0	24.9	21.2	18.9	19.3	23.4	31.0	48.1	52.3	51.6	49.3
17	41.3	31.6	24.7	21.1	18.8	19.3	23.8	31.4	48.7	52.3	51.5	49.3
18	41.3	31.3	24.5	21.0	18.7	19.4	24.1	32.0	49.2	52.3	51.4	49.3
19	41.2	31.0	24.3	20.9	18.6	19.4	24.4	32.4	49.7	52.3	51.4	49.3
20	41.2	30.8	24.2	20.8	18.6	19.4	24.6	32.9	50.1	52.2	51.3	49.4
21	41.2	30.6	24.1	20.7	18.6	19.5	24.8	33.4	50.5	52.2	51.3	49.4
22	41.2	30.3	24.0	20.6	18.6	19.6	25.0	34.1	50.9	52.2	51.3	49.4
23	41.2	30.1	23.8	20.5	18.6	19.7	25.1	34.7	51.3	52.2	51.3	49.4
24	41.2	29.9	23.8	20.4	18.7	19.8	25.3	35.4	51.6	52.2	51.3	49.4
25	41.2	29.6	23.7	20.4	18.7	19.8	25.4	36.1	51.8	52.2	51.3	49.4
26	41.1	29.4	23.6	20.4	18.7	19.9	25.5	36.7	52.1	52.2	51.2	49.4
27	40.6	29.2	23.5	20.3	18.7	20.0	25.7	37.3	52.3	52.1	51.2	49.4
28	40.3	28.9	23.4	20.2	18.7	20.0	25.8	37.9	52.5	52.0	51.1	49.4
29	40.2	28.7	23.3	20.1	-	20.0	26.0	38.4	52.6	52.0	51.0	49.4
30	39.8	28.4	23.1	20.0	-----	20.1	26.3	38.8	52.8	52.0	50.9	49.4
31	39.4	-----	23.0	20.0	-----	20.2	-----	39.3	-----	52.0	50.9	-----
(+)	7,589.13	7,579.90	7,574.90	7,571.90	7,570.62	7,572.10	7,577.95	7,589.08	7,599.28	7,598.73	7,597.91	7,596.85
(*)	-4,900	-11,000	-5,400	-3,000	-1,300	+1,500	+6,100	+13,000	+13,500	-800	-1,100	-1,500

Calendar year 1960..... * -27,900

Water year 1960-61..... * +5,100

+ Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

567

11-2315. Mono Creek below Lake Thomas A. Edison, Calif.

Location.--Lat 37°21'40", long 118°59'25", in SW¹/₄ sec.35, T.6 S., R.27E. (unsurveyed), on left bank 0.6 mile upstream from diversion dam, 1 mile downstream from Lake Thomas A. Edison, and 1.9 miles northeast of Mono Hot Springs.

Drainage area.--92.0 sq mi.

Records available.--October 1921 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1954, published as "near Vermilion Valley."

Gage.--Water-stage recorder. Altitude of gage is 7,400 ft (from topographic map).

Average discharge.--40 years, 146 cfs (105,700 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 440 cfs Oct. 26, 27 (gage height, 6.41 ft); minimum daily, 9.9 cfs Sept. 18.
1921-61: Maximum discharge, 1,760 cfs June 2, 1938 (gage height, 8.62 ft); minimum daily, 0.3 cfs Nov. 11, 12, 1954.

Remarks.--Records good. Flow regulated by Lake Thomas A. Edison beginning Oct. 12, 1954 (see preceding page). No diversion.

Cooperation.--Water-stage-recorder graph and 14 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.8	5.5	5.5	96
4.9	10	5.9	208
5.0	18	6.2	325
5.2	40	6.5	470

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	201	*325	149	83	*70	*16	16	13	14	13	14	59
2	201	*352	149	83	70	16	16	13	14	13	84	59
3	*201	357	149	83	70	16	15	13	14	14	*57	59
4	201	241	149	83	70	16	15	13	14	14	34	59
5	198	241	146	*83	70	16	15	*13	*14	14	70	59
6	195	241	146	83	70	16	16	13	14	14	61	59
7	195	241	146	83	70	16	15	13	14	*72	61	*59
8	63	241	143	83	70	16	15	13	14	138	61	59
9	70	241	143	83	70	15	15	13	14	138	61	59
10	20	241	143	80	70	15	15	13	27	138	61	59
11	20	238	143	80	70	15	14	13	21	138	63	59
12	19	238	*141	80	70	15	*14	13	12	138	63	59
13	16	238	141	80	70	15	15	13	12	138	63	59
14	14	238	141	80	70	15	15	13	11	125	63	59
15	14	238	143	80	70	15	15	13	11	64	63	59
16	14	238	143	80	70	15	15	13	11	34	61	27
17	14	234	143	80	70	15	15	13	12	34	61	10
18	14	192	143	80	70	16	15	14	12	34	61	9.9
19	14	149	113	80	68	16	15	14	13	34	59	10
20	14	149	85	68	36	16	15	14	13	34	61	10
21	14	149	85	70	16	16	15	13	13	34	61	10
22	14	149	85	70	16	16	15	13	13	34	61	10
23	14	149	75	70	16	16	14	13	13	34	61	10
24	14	149	83	70	16	16	13	13	13	34	61	10
25	14	149	83	70	16	16	13	13	13	36	61	10
26	*55	149	83	70	16	16	13	13	13	36	61	10
27	271	149	83	70	16	16	13	13	13	42	59	10
28	155	149	83	70	16	16	13	13	13	61	59	10
29	62	149	83	70	-----	16	13	13	13	14	59	10
30	219	149	83	70	-----	16	13	13	13	13	59	10
31	227	-----	83	70	-----	16	-----	14	-----	13	59	-----
TOTAL	2,707	6,363	3,668	2,385	1,492	487	436	407	411	1,692	1,843	1,051.9
MEAN	87.3	212	118	76.9	53.3	15.7	14.5	13.1	13.7	54.6	59.5	35.1
MAX	271	357	149	83	70	16	16	14	27	138	84	59
MIN	14	149	43	68	16	15	13	13	11	13	14	9.9
AC-FT	5,370	12,620	7,280	4,730	2,960	966	865	807	815	3,360	3,660	2,090
CALENDAR YEAR 1960:	MAX 430			MIN 14		MEAN 120		AC-FT 87,310				
WATER YEAR 1960-61:	MAX 357			MIN 9.9		MEAN 62.9		AC-FT 45,520				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2325. Jackass Creek near Jackass Meadow, Calif.

Location.--Lat 37°29'20", long 119°18'10", in SW 1/4 sec. 13, T.5 S., R.24 E., on left bank 1.6 miles east of Jackass Meadow, 10 miles up-stream from West Fork, and 18 miles northeast of town of Bass Lake.

Drainage area.--12.8 sq mi.

Records available.--October 1921 to September 1928, November 1951 to September 1961 (no winter records). Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 6,900 ft (from topographic map). Prior to May 5, 1922, staff gage at same site and datum.

Average discharge.--7 years (1921-28), 20.7 cfs (14,990 acre-ft per year).

Extremes.--Maximum discharge recorded during year, 85 cfs Apr. 3 (gage height 6.91 ft); no flow for many days.
1921-28, 1951-61: Maximum discharge recorded, 786 cfs Dec. 23, 1955 (gage height, 11.37 ft); no flow at times.

Remarks.--Records good except those for periods of ice effect, which are fair. No storage or diversion.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

5.0	0	5.5	8.0	4.95	0	5.5	6.8
5.1	.8	5.6	11	5.0	.1	5.7	12
5.2	2.1	5.8	18	5.1	.7	5.9	19
5.3	3.6	6.0	28	5.2	1.8	6.1	28
5.4	5.5	6.2	38	5.3	3.2	6.3	39
				5.4	4.9	6.7	68

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1				b 5.0	28	47	22	0.1		
2	0	1				b 6.5	38	45	23	.1		(*)
3	0	1				b 7.5	57	47	17	.4		
4	0	0				8.9	66	43	14	1.6		
5	0	0				7.5	66	35	13	1.1		
6	* 0	0				7.0	* 59	34	* 13	.6		
7	0	0				b 7.5	52	47	13	.3		(*)
8	0	* 0				b 8.0	43	47	11	.1		
9	0	0				7.8	45	42	9.6	.1		
10	0	0				b 8.0	43	38	8.3	.1		
11	0	0				b 8.5	50	32	7.5	0		
12	0	1		† 1.6		b 9.0	49	28	7.0	* 0		
13	0	1				11	44	* 27	5.7	0		
14	0	1				* 14	45	31	5.5	0		
15	0	1				14	54	34	5.1	0		
16	0	1				b 13	65	32	4.4	0		
17	0	1				b 12	66	32	3.7	0		
18	0	1				b 12	59	34	3.4	0		
19	0	1				b 15	43	32	2.9	0		
20	0	1				18	34	28	2.4	0		
21	0	1				21	30	30	2.1	0		
22	0	1				* 26	25	28	1.6	0		
23	0	1				36	28	26	1.5	0		
24	0	.6				23	32	24	1.0	0		
25	0	1.6				b 20	32	22	.9	0		
26	0	1.6				b 18	36	20	.8	0		
27	.1	1.4				15	39	16	.6	0		
28	.1	b 1.4				b 13	44	15	.4	0		
29	.1	b 1.4				b 12	47	19	.3	0		
30	.1	b 1.4				b 12	47	15	.1	0		
31	.1					b 22		19		0		
Total	0.5	10.9	-	-	-	418.2	1,368	969	200.8	4.5	0	0
Mean	0.02	0.36	-	-	-	13.5	45.6	31.3	6.69	0.15	0	0
Max.	0.1	1.6	-	-	-	36	66	47	23	1.6	0	0
Min.	0	0	-	-	-	5.0	25	15	0.1	0	0	0
Ac-ft	1.0	22	-	-	-	829	2,710	1,920	398	8.9	0	0
Calendar year 1960 :			Max	Min	Mean	Acres-feet						
Water year 1960-61 :			Max	Min	Mean	Acres-feet						

* Discharge measurement or observation of no flow made on this day.

† Result of discharge measurement.

b Stage-discharge relation affected by ice.

11-2345. Chiquito Creek near Arnold Meadow, Calif.

Location.--Lat 37°24'45", long 119°22'50", in NE $\frac{1}{4}$ sec.18, T.6 S., R.24 E., on right bank 0.5 mile downstream from Beasore Creek, 0.6 mile southwest of Arnold Meadow, and 12 miles northeast of town of Bass Lake.

Drainage area.--59.6 sq mi.

Records available.--September 1921 to September 1928, November 1951 to September 1961 (no winter records 1952-54, 1956). Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 4,800 ft (from topographic map). Prior to Apr. 30, 1922, staff gage at same site and datum.

Average discharge.--13 years (1921-28, 1954-55, 1956-61), 77.4 cfs (56,040 acre-ft per year).

Extremes.--Maximum discharge during year, 238 cfs Apr. 4 (gage height, 6.12 ft); minimum, 1.2 cfs Sept. 7, 9.
1921-28, 1951-61: Maximum discharge, 8,630 cfs Dec. 23, 1955 (gage height, 16.38 ft); minimum, that of Sept. 7, 9, 1961.

Remarks.--Records good. No storage or diversion.

Cooperation.--Water-stage-recorder graph and 16 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

4.5	1.0	5.0	27
4.6	3.4	5.2	50
4.7	6.8	5.5	100
4.8	11	6.0	206
4.9	19		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.8	4.3	6.5	813	27	34	89	111	68	8.9	3.1	2.1
2	3.1	4.3	8.4	812	28	38	113	104	74	8.4	3.1	*2.1
3	3.1	5.3	4.2	811	28	38	152	111	70	11	3.1	2.1
4	3.4	11	3.4	813	26	37	182	*96	56	15	2.8	2.1
5	3.1	9.4	2.9	814	26	33	175	91	52	12	2.8	1.8
6	8.4	15	825	815	29	32	160	91	52	10	3.7	1.6
7	*14	*13	825	815	27	33	139	111	*47	8.9	4.0	1.6
8	6.0	10	822	815	28	35	119	113	46	8.4	3.1	1.6
9	5.6	9.8	821	816	29	36	123	106	42	7.6	2.6	1.8
10	5.6	9.8	820	16	36	33	111	100	41	7.2	2.3	1.8
11	5.6	10	19	17	65	35	*115	86	37	6.4	*3.4	1.8
12	5.6	816	19	18	61	35	133	79	34	*6.4	11	1.6
13	5.3	18	*20	18	*45	*38	117	74	32	6.4	5.6	1.6
14	5.0	17	19	18	37	44	115	80	31	6.0	4.0	1.6
15	5.0	17	18	19	37	46	*131	91	27	5.6	3.4	1.6
16	4.6	17	17	19	38	44	152	87	26	5.3	3.1	1.8
17	4.3	19	17	*19	34	42	150	82	23	5.3	2.8	3.7
18	4.3	20	17	20	32	38	139	82	22	5.0	2.6	4.6
19	4.3	18	17	20	30	42	113	*84	20	5.0	2.6	4.0
20	4.3	17	17	20	30	49	95	77	18	4.6	2.6	3.4
21	4.3	18	19	20	33	59	86	77	17	4.6	2.8	3.1
22	4.3	17	20	19	35	65	89	75	15	4.3	2.6	2.8
23	4.3	16	21	19	33	91	89	72	14	4.3	2.3	2.8
24	4.3	15	21	19	33	74	82	70	13	4.0	2.3	2.8
25	4.3	17	20	20	34	62	87	68	12	3.7	2.1	2.6
26	4.3	16	20	30	32	55	93	62	11	3.7	2.1	2.6
27	4.3	816	20	28	31	55	*98	55	11	3.7	2.1	2.3
28	4.3	817	817	24	31	52	106	55	10	3.4	2.3	2.6
29	4.3	17	816	25	-----	52	111	59	9.8	3.4	2.3	5.0
30	4.3	16	816	25	-----	68	108	52	9.4	3.1	2.1	4.0
31	4.3	-----	815	27	-----	74	-----	61	-----	3.1	2.1	-----
TOTAL	150.7	425.9	752	584	955	1,469	3,572	2,562	940.2	194.7	96.8	74.9
MEAN	4.86	14.2	24.3	18.8	34.1	47.4	119	82.6	31.3	6.28	3.12	2.50
MAX	14	20	84	90	65	91	182	113	74	15	11	5.0
MIN	2.8	4.3	15	11	26	32	82	52	9.4	3.1	2.1	1.6
AC-FT	299	845	1,490	1,160	1,890	2,910	7,080	5,080	1,860	386	192	149

CALENDAR YEAR 1960: MAX 266 MEAN 2.6 AC-FT 36,180
WATER YEAR 1960-61: MAX 182 MIN 1.6 MEAN 32.3 AC-FT 23,340

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

B Stage-discharge relation affected by ice.

SAN JOAQUIN RIVER BASIN

11-2347. Mammoth Pool Reservoir near Big Creek, Calif.

Location.--Lat 37°19'45", long 119°19'15", in SW¼ sec.11, T.7 S., R.24 E., in gatehouse of power tunnel intake near dam on San Joaquin River, 10 miles northwest of town of Big Creek.

Drainage area.--1,002 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.)

Extremes.--Maximum contents during year, 35,800 acre-ft June 12 (elevation, 3,228.53 ft); minimum, 10,900 acre-ft Jan. 14 (elevation, 3,168.98 ft).

1959-61: Maximum contents, 102,200 acre-ft July 11, 1960 (elevation, 3,313.00 ft); minimum since appreciable storage was attained, that of Jan. 14, 1961.

Remarks.--Reservoir is formed by an earth-filled dam; storage began Oct. 8, 1959. Usable capacity, 119,900 acre-ft between elevations 3,100.00 (invert of power tunnel) and 3,330.00 ft (crest of spillway) above mean sea level. Additional storage of 2,780 acre-ft is not available for release. Water is diverted through tunnel for power development; water is returned to river 8.5 miles downstream from dam. Figures given herein represent usable contents.

Cooperation.--Records of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-ft)

3,169	10,900	3,220	31,100
3,180	14,100	3,230	36,700
3,200	21,400		

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32,000	23,800	22,600	13,800	14,600	12,400	11,500	12,700	31,100	35,000	34,500	30,600
2	32,000	23,700	23,600	13,600	14,600	12,300	11,100	12,800	31,100	35,100	34,500	30,700
3	31,400	23,800	22,000	13,300	14,600	12,200	11,400	13,200	31,100	35,200	34,200	30,800
4	30,900	23,600	21,000	13,100	14,500	12,700	11,700	13,900	31,100	35,200	34,400	30,700
5	30,200	23,700	20,700	12,900	14,400	13,000	12,100	13,900	31,500	35,100	33,300	30,200
6	29,300	23,400	20,400	12,600	14,300	12,500	12,200	13,800	32,300	35,100	33,300	30,100
7	29,500	23,700	19,900	12,300	14,000	12,300	12,200	13,900	33,200	35,100	32,600	30,200
8	29,600	23,700	19,400	12,300	13,500	12,300	12,200	14,100	34,100	35,100	32,000	30,300
9	29,800	23,600	19,100	12,100	13,200	12,100	12,200	14,600	34,700	35,100	31,700	30,400
10	29,700	23,500	19,000	11,800	13,100	11,700	12,100	15,200	35,100	35,000	31,600	30,500
11	29,600	23,500	19,300	11,700	13,400	12,000	12,000	15,400	35,400	35,100	31,500	30,400
12	29,500	23,300	13,700	11,400	14,000	12,300	12,200	15,100	35,300	35,300	31,800	30,000
13	29,300	23,100	13,300	11,000	13,900	12,100	12,100	14,700	35,300	35,500	32,200	29,600
14	29,000	23,000	17,700	11,100	13,900	12,100	11,900	14,700	35,300	35,500	32,400	29,300
15	29,100	23,000	17,100	11,300	13,900	12,100	11,900	15,600	35,200	35,500	32,500	29,100
16	29,000	22,900	17,000	11,600	13,900	12,000	12,200	16,500	35,100	35,500	32,100	28,800
17	28,400	22,600	17,000	11,900	13,800	12,300	12,800	17,600	35,100	35,300	31,600	28,500
18	27,800	22,300	17,300	12,200	13,400	12,700	13,600	18,800	35,100	35,000	31,000	28,300
19	27,400	22,500	16,600	12,500	13,500	13,300	13,500	19,800	35,100	34,300	31,100	28,200
20	26,800	22,500	16,100	12,700	12,900	13,500	13,000	20,600	35,100	34,000	31,300	27,900
21	26,200	22,400	15,800	13,000	12,400	13,400	12,900	22,100	35,100	34,000	30,300	27,400
22	25,900	22,300	15,700	13,300	12,400	13,100	13,000	23,600	35,100	34,200	30,500	26,900
23	25,700	22,200	15,500	13,600	12,300	12,800	12,900	25,100	34,900	34,400	31,000	26,400
24	25,100	22,000	15,400	13,800	12,400	13,300	12,900	26,700	34,800	34,300	31,100	25,800
25	24,700	22,000	15,200	14,100	12,400	14,400	12,800	28,300	34,600	34,300	31,100	25,200
26	24,200	21,900	15,100	14,700	12,400	14,900	12,800	29,600	34,600	34,400	31,400	24,900
27	23,900	21,800	14,900	15,100	12,400	14,200	12,700	30,200	34,500	34,200	31,600	24,700
28	23,900	21,700	14,600	15,500	12,400	13,300	12,700	31,100	34,600	34,200	31,100	24,200
29	23,800	21,600	14,400	15,600	—	12,700	12,600	31,600	34,700	34,400	30,600	24,100
30	23,800	21,600	14,200	15,300	—	12,400	12,400	31,600	34,800	34,500	30,400	24,000
31	23,800	—	14,000	14,900	—	12,000	—	31,300	—	34,400	30,500	—
(+)	3,205.52	3,200.55	3,179.90	3,182.57	3,174.43	3,173.08	3,174.55	3,220.42	3,226.74	3,226.03	3,218.87	3,205.81
(#)	-8,800	-2,200	-7,600	+900	-2,500	-400	+400	+18,900	+3,500	-400	-3,900	-6,500

Calendar year 1960..... \$ +400

Water year 1960-61..... \$ -8,600

† Elevation in feet, at end of month.

Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

571

11-2350. San Joaquin River above Big Creek, Calif.

Location.--Lat 37°14'15", long 119°19'50", in NE¼ sec.15, T.8 S., R.24 E., on left bank 0.8 mile upstream from Ross Creek and 2.3 miles upstream from Big Creek.

Drainage area.--1,050 sq mi.

Records available.--September 1912 to September 1915, March 1922 to September 1961. Published as "near Shaver" 1912-15.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 2,400 ft (from topographic map). Prior to 1922, at site 2.2 miles downstream at different datum.

Average discharge.--34 years (1925-59, period since diversion began through Ward tunnel and prior to regulation by Mammoth Pool Reservoir), 1,330 cfs (962,900 acre-ft per year).

Extremes.--Maximum discharge during year, 735 cfs Dec. 1 (gage height, 8.15 ft); minimum daily, 13 cfs Sept. 7.

1912-15, 1922-61: Maximum discharge, 63,000 cfs Dec. 23, 1955 (gage height, 24.75 ft), from rating curve extended above 14,000 cfs on basis of computation of peak flow over dam; minimum daily, 3.9 cfs Nov. 28-30, 1959.

Remarks.--Records fair. Flow partly regulated by Florence Lake (see p. 562) and diversions through Ward tunnel (see p. 561) beginning in 1925, Lake Thomas A. Edison beginning in 1954 (see p. 566), and Mammoth Pool Reservoir beginning in 1960 (see p. 570).

Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.3	12	5.5	84
4.4	15	6.0	134
4.6	23	6.5	213
5.0	45		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	18	16	167	19	24	19	25	24	25	14	16	15
2	18	15	176	19	25	19	24	23	22	14	16	15
3	18	16	52	19	26	20	23	*23	20	15	*16	15
4	18	19	47	19	23	20	22	23	19	17	16	15
5	18	17	*31	*19	22	21	21	23	19	*15	15	15
6	19	29	28	19	21	24	20	28	*18	14	15	*15
7	*19	22	27	19	21	26	*20	32	19	14	15	13
8	19	17	26	19	21	21	19	28	18	14	15	15
9	19	*17	24	19	*20	20	19	25	18	14	15	15
10	20	17	23	19	20	*20	18	24	18	14	14	15
11	16	18	23	19	38	20	18	24	18	14	15	15
12	15	56	31	19	47	19	18	24	18	14	16	15
13	18	56	26	19	31	19	19	24	18	14	16	15
14	18	45	22	22	27	18	18	23	17	14	16	16
15	17	29	21	22	24	29	17	23	17	14	16	16
16	17	24	21	21	26	25	16	22	17	14	16	17
17	18	23	20	21	24	32	15	22	16	14	16	21
18	17	21	20	20	22	25	17	22	16	14	16	17
19	17	21	20	20	21	23	17	23	16	15	16	17
20	16	19	20	20	20	23	18	24	16	15	16	17
21	16	18	21	20	20	23	17	22	16	15	16	17
22	16	17	21	20	19	22	31	21	16	15	16	17
23	16	17	21	20	19	32	31	21	16	15	16	17
24	17	19	21	20	19	34	28	21	15	15	15	17
25	17	20	21	20	19	51	28	21	15	15	15	17
26	17	29	21	58	19	34	27	21	16	15	15	17
27	17	28	20	41	19	36	27	20	16	15	15	17
28	17	25	19	30	19	35	26	19	15	15	15	17
29	17	25	19	27	-----	29	25	20	15	15	15	17
30	17	25	19	24	-----	27	24	20	15	15	15	16
31	17	-----	20	23	-----	27	-----	24	-----	16	15	-----
TOTAL	539	720	1,038	696	656	793	648	714	520	453	480	483
MEAN	17.4	24.0	33.5	22.5	23.4	25.6	21.6	23.0	17.3	14.6	15.5	16.1
MAX	20	56	176	58	47	51	31	32	25	17	16	21
MIN	15	15	19	19	19	18	15	19	15	14	14	13
AC-FT	1,070	1,430	2,060	1,380	1,300	1,570	1,290	1,420	1,030	899	952	958

CALENDAR YEAR 1960: MAX 284 MIN 8.5 MEAN 29.4 AC-FT 21,390
 WATER YEAR 1960-61: MAX 176 MIN 13 MEAN 21.2 AC-FT 15,360

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2350. San Joaquin River above Big Creek, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1							-	-	53	48	50	47	55	54	62	56	56	56	77	64	77	66	76	66
2							-	-	53	46	50	49	56	55	62	55	62	56	75	66	76	66	74	66
3							-	-	53	53	51	49	58	56	64	57	68	57	74	70	76	68	72	64
4							-	-	53	46	49	48	60	56	62	53	70	59	77	69	75	70	72	61
5							-	-	47	45	51	47	62	56	62	53	70	60	76	66	77	70	72	63
6							43	42	47	46	51	46	62	56	56	55	72	61	76	64	81	72	72	60
7							44	42	47	46	47	45	60	57	56	54	73	63	76	64	82	73	70	59
8							43	42	49	47	49	46	59	54	62	54	74	64	78	65	82	72	67	58
9							43	42	50	48	51	47	60	54	62	54	72	62	78	66	81	70	67	59
10							44	43	51	49	51	47	60	54	62	57	74	63	82	69	77	71	68	59
11							44	43	54	50	52	48	61	55	62	56	71	63	81	70	78	71	68	59
12							44	43	50	48	52	48	58	55	58	54	75	63	76	70	78	69	70	60
13							44	43	52	48	54	50	57	52	62	54	76	65	81	70	79	69	68	58
14							44	44	53	53	54	51	59	53	62	55	78	67	82	69	78	68	68	58
15							44	44	53	53	53	51	61	54	64	56	79	67	80	68	77	66	67	58
16							44	43	53	53	52	50	63	56	64	57	80	68	81	69	76	66	66	64
17							44	44	53	53	52	49	61	57	68	58	80	69	82	70	76	65	66	64
18							44	43	53	45	52	51	62	58	69	59	79	68	81	70	76	65	66	59
19							44	43	46	44	53	52	58	55	64	59	80	68	82	71	76	69	66	58
20							44	44	47	44	54	52	57	52	63	47	80	69	81	70	78	70	66	60
21							44	43	48	45	55	53	56	50	68	58	82	70	78	68	80	71	67	60
22							44	43	50	47	56	52	54	51	69	59	80	71	79	69	80	72	66	59
23							44	44	49	46	55	53	54	51	68	59	82	70	81	70	80	72	66	59
24							45	44	49	47	53	50	55	47	68	58	81	69	80	70	79	70	67	58
25							46	45	49	48	50	49	58	51	70	59	80	71	80	70	78	69	67	60
26																								
27							50	46	49	47	50	49	58	52	70	62	81	71	80	70	76	67	67	59
28							48	46	48	46	49	49	58	52	70	59	80	70	81	70	70	65	66	60
29							52	48	49	46	52	49	62	53	63	58	78	67	80	69	73	64	66	62
30							52	52	-	-	53	51	63	54	64	59	76	64	79	68	75	65	68	61
31							52	46	-----	-----	54	53	63	54	64	55	76	64	78	67	75	66	67	59
31							53	46	-----	-----	54	53	-----	-----	60	57	-----	-----	77	66	75	66	-----	-----
Avg							-	-	50	48	52	49	59	54	64	56	76	65	79	68	77	68	68	60

SAN JOAQUIN RIVER BASIN

573

11-2355. Ward tunnel at outlet, Calif.

Location.--Lat 37°15'15", long 119°09'35", in SW¹/₄ sec.5, T.8 S., R.26 E., at tunnel outlet at east end of Huntington Lake, 6 miles northeast of Big Creek.

Records available.--October 1927 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder until May 23, 1956, none thereafter. Datum of gage was 6,999.00 ft above mean sea level (levels by Southern California Edison Co.).

Average discharge.--34 years, 452 cfs (327,200 acre-ft per year).

Extremes.--1927-61: Maximum daily discharge, 2,080 cfs June 21, 1935; no flow, Sept. 18, 20, 29, 1961.

Remarks.--Records fair. Daily discharge computed as the sum of Ward tunnel at intake, Mono-Bear conduit, Camp Creek conduit, and corrected for change in contents of Portal Forebay. Tunnel diverts from Florence Lake to Huntington Lake, receives diversions from Bear and Mono Creeks and at times from several other small tributaries of South Fork San Joaquin River. See record for Ward tunnel at intake, page 561.

Cooperation.--Discharge of Camp Creek conduit and contents of Portal Forebay furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	220	344	198	119	108	62	203	386	499	609	582	172	
2	200	372	250	118	118	66	114	340	517	600	640	151	
3	241	381	219	118	111	70	297	451	527	612	648	163	
4	214	212	240	91	111	77	366	466	527	619	559	140	
5	216	272	217	115	104	70	409	442	562	604	458	127	
6	242	289	227	95	119	72	431	420	556	592	354	146	
7	212	283	214	108	118	70	387	410	560	607	383	141	
8	122	275	198	115	106	76	313	410	603	642	315	120	
9	4	301	203	108	114	72	295	448	524	632	246	121	
10	6	282	194	106	126	68	344	474	469	626	207	121	
11	4	284	203	113	138	68	249	473	454	623	337	113	
12	6	294	197	106	138	66	298	448	498	617	306	108	
13	1	274	184	106	130	70	276	419	559	609	382	97	
14	10	296	189	106	136	83	272	74	531	588	324	113	
15	2	310	195	112	124	66	306	438	542	594	388	102	
16	11	314	167	106	114	87	334	584	562	552	218	111	
17	21	304	186	105	122	83	536	559	561	544	212	11	
18	18	237	186	99	122	97	422	516	545	542	198	0	
19	18	237	133	105	116	87	365	537	530	534	188	2	
20	16	189	126	73	45	119	369	532	550	572	170	0	
21	16	213	133	109	74	115	337	600	569	586	200	2	
22	16	206	119	95	75	126	291	628	582	576	260	3	
23	16	202	59	95	57	153	261	584	581	567	340	203	
24	16	194	149	95	64	114	297	572	575	610	380	142	
25	17	199	120	95	64	107	244	593	567	624	330	135	
26	79	199	127	98	62	117	245	538	551	612	362	116	
27	420	186	133	100	60	119	211	515	579	651	287	68	
28	339	199	134	100	60	115	247	503	584	712	232	63	
29	166	205	110	103	—	104	282	476	570	655	193	0	
30	256	201	97	105	—	79	301	441	583	636	186	1	
31	301	—	116	107	—	166	—	456	—	588	184	—	
Total	3,426	7,754	5,223	5,226	2,836	2,844	9,302	14,733	16,417	18,735	10,069	2,792	
Mean	111	258	168	104	101	91.7	310	475	547	604	325	93.1	
Max.	420	381	250	119	138	166	536	628	603	712	648	203	
Min.	1	186	59	73	45	62	114	74	454	534	170	0	
Ac-ft	6,800	15,380	10,360	6,400	5,630	5,640	18,450	29,220	32,560	37,160	19,970	5,540	
Calendar year 1960:				Max 713	Min 1		Mean 351			Acre-feet 254,600			
Water year 1960-61:				Max 712	Min 0		Mean 267			Acre-feet 193,100			

SAN JOAQUIN RIVER BASIN

11-2360. Huntington Lake near Big Creek, Calif.

Location.--Lat 37°14', long 119°13', in SW 1/4 sec. 14, T. 8 S., R. 25 E., in gate tower of dam 1 on Big Creek, 2 miles northeast of town of Big Creek.

Drainage area.--79.0 sq mi.

Records available.--April 1913 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.). Prior to June 19, 1920, staff gage at same site and datum.

Extremes.--Maximum contents during year, 86,700 acre-ft Aug. 14 (elevation, 6,948.27 ft); minimum, 30,000 acre-ft Mar. 24 (elevation, 6,899.05 ft).

1913-61: Maximum contents, 90,500 acre-ft May 31, 1926 (elevation, 6,950.92 ft); minimum, 2,100 acre-ft Nov. 6, 1937 (elevation, 6,838.53 ft).

Note.--Prior to 1960, maximum and minimum daily contents were published.

Remarks.--Lake is formed by four dams; storage began Apr. 11, 1913. Dams were raised in 1914 and again in 1917. Usable capacity, 89,200 acre-ft between elevations 6,819.9 (invert of outlet tunnel No. 1) and 6,950 ft (spillway crest at dam 1) above mean sea level. Additional storage of 600 acre-ft is not available for release. Water is used for power development in Big Creek plants. Figures given herein represent usable contents.

Cooperation.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-feet)

6,898	29,200	6,930	62,600
6,900	30,900	6,940	75,300
6,910	40,200	6,950	89,200
6,920	50,800		

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54.6	45.0	46.5	42.6	36.6	32.5	31.4	43.2	63.1	66.5	84.0	73.6
2	54.7	45.1	46.6	42.4	36.4	32.4	31.3	43.7	63.5	67.1	84.5	73.6
3	54.5	45.2	47.0	42.1	36.2	32.2	31.8	44.4	63.8	67.8	85.1	73.6
4	54.3	45.3	47.4	41.8	36.1	32.4	32.8	45.1	64.1	68.3	85.4	73.2
5	53.9	45.5	47.3	41.5	36.1	32.6	33.9	45.7	64.3	68.8	85.7	72.8
6	53.7	45.8	47.3	41.2	35.9	32.2	34.9	46.3	64.6	69.2	86.0	72.3
7	53.4	45.8	47.2	40.9	35.7	32.0	35.9	46.7	64.8	69.6	86.1	72.0
8	53.1	46.0	47.1	40.6	35.5	31.7	36.4	47.3	65.0	70.4	86.0	71.7
9	52.6	46.1	47.0	40.3	35.4	31.4	36.6	47.9	65.1	71.1	85.7	71.7
10	52.0	46.3	46.9	40.0	35.3	31.2	36.9	48.7	65.2	71.7	85.5	71.6
11	51.3	46.6	47.1	39.7	35.3	31.2	36.9	49.4	65.1	72.1	85.5	71.1
12	50.7	46.8	46.8	39.5	35.2	31.3	37.2	50.0	65.0	72.6	85.9	70.6
13	49.9	46.9	46.6	39.1	35.1	31.1	37.3	50.5	65.1	73.1	86.5	70.0
14	49.1	46.9	46.4	39.2	35.0	30.9	37.3	50.4	65.2	73.5	86.5	69.5
15	48.8	47.0	46.3	39.1	34.8	30.7	37.7	51.0	65.3	74.1	86.6	68.9
16	48.6	47.2	46.2	38.9	34.7	30.5	38.9	52.0	65.3	74.7	86.4	68.4
17	48.4	47.3	46.4	38.8	34.6	30.3	40.2	52.9	65.4	75.1	86.1	67.7
18	47.8	47.3	46.4	38.7	34.8	30.4	40.9	53.8	65.4	75.4	85.3	66.9
19	46.8	47.3	46.1	38.5	35.0	30.6	41.3	54.7	65.4	75.8	84.2	66.1
20	45.8	47.2	45.9	38.4	34.6	30.5	41.7	55.4	65.4	76.1	83.1	65.3
21	44.8	47.1	45.6	38.3	34.2	30.4	42.0	56.3	65.5	76.6	81.7	64.4
22	43.9	47.0	45.4	38.2	34.1	30.2	42.1	57.3	65.5	77.6	80.3	63.4
23	43.0	46.9	45.0	37.9	33.9	30.3	42.2	58.2	65.5	78.5	79.2	62.8
24	42.6	46.8	44.7	37.7	33.8	30.2	42.3	59.0	65.7	79.0	78.2	62.1
25	42.6	46.7	44.5	37.6	33.6	30.2	42.3	59.8	65.7	79.4	77.1	61.3
26	42.6	46.7	44.3	37.4	33.4	30.4	42.2	60.4	65.6	80.0	76.2	60.7
27	43.4	46.6	44.0	37.3	33.1	30.5	42.1	61.1	65.6	80.6	75.6	60.1
28	44.1	46.5	43.7	37.2	32.8	30.7	42.3	61.6	65.6	81.3	74.8	59.4
29	44.4	46.4	43.5	37.2	---	30.9	42.5	62.1	65.6	82.4	74.4	58.6
30	44.7	46.3	43.2	37.0	-----	30.9	42.8	62.4	65.9	83.1	74.1	57.8
31	44.9	-----	42.9	36.8	-----	31.2	-----	62.8	-----	83.5	73.8	-----
(+)	6,914.57	6,915.84	6,912.64	6,906.48	6,902.16	6,900.38	6,912.52	6,930.16	6,932.69	6,945.99	6,938.86	6,926.07
(#)	-9,800	+1,400	-3,400	-6,100	-4,000	-1,600	+11,600	+20,000	+3,100	+17,600	-9,700	-16,000

Calendar year 1960..... † +4,100

Water year 1960-61..... † +3,100

† Elevation, in feet, at end of month.

Change in contents, in acre-feet.

11-2370. Big Creek below Huntington Lake, Calif.

Location.--Lat 37°13'10", long 119°12'50", in NW 1/4 sec. 23, T.8 S., R.25 E., on right bank 1,200 ft upstream from Grouse Creek and 1 mile downstream from Huntington Lake.

Drainage area.--80.0 sq mi.

Records available.--June 1925 to September 1961.

Gage.--Water-stage recorder with thermograph attachment, Parshall flume, and concrete control. Altitude of gage is 6,600 ft (from topographic map). Prior to Oct. 1, 1942, at datum 1.00 ft lower and from Oct. 1, 1942, to Sept. 30, 1948, at datum 1.00 ft higher.

Extremes.--Maximum discharge during year, 7.8 cfs Dec. 1 (gage height, 2.70 ft); minimum daily, 0.6 cfs Jan. 13-24.
1925-61: Maximum discharge, 2,040 cfs June 23, 1925 (gage height, 11.3 ft, present datum), siphon spillways operating at Huntington Lake; minimum daily recorded, 0.1 cfs Jan. 18-21, Aug. 21 to Sept. 24, Oct. 7-18, Dec. 5-16, 1931.

Remarks.--Records good. Flow regulated by Huntington Lake beginning in 1913 (see preceding page). During most of year flow is diverted for power development at Big Creek powerhouse No. 1.

Cooperation.--Water-stage-recorder graph furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.3	0.4	2.0	2.8
1.5	1.0	2.3	4.1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.3	2.2	4.1	0.7	0.7	0.8	1.3	**2.2	2.4	2.1	2.4	1.9
2	2.2	2.2	**3.0	.7	.7	.8	1.3	2.3	2.4	2.1	2.4	2.1
3	2.2	2.4	2.6	.7	.7	.8	**1.4	2.3	2.3	2.4	2.4	2.1
4	2.1	1.9	2.5	**.	.7	.8	1.4	2.3	2.2	2.1	2.4	2.1
5	2.2	1.8	2.5	.7	.7	.7	1.4	2.3	2.3	2.1	2.5	2.1
6	2.3	2.1	2.4	.7	.7	.7	1.3	2.4	**2.2	2.1	2.5	2.2
7	2.2	2.0	2.4	.7	.7	.8	1.3	2.6	2.2	2.2	2.6	2.2
8	2.2	2.0	2.4	.7	.7	.8	1.2	2.5	2.2	2.1	2.5	2.2
9	2.2	**2.0	2.4	.7	**.	.8	1.2	2.4	2.2	2.1	**2.5	2.2
10	2.2	2.1	2.4	.7	.8	**.	1.2	2.4	2.2	**2.1	2.5	2.2
11	2.2	2.3	2.4	.7	1.4	.8	1.1	2.4	2.2	2.2	2.6	**2.2
12	2.2	2.6	2.4	.7	1.1	.8	1.2	2.4	2.2	2.2	2.6	2.2
13	2.2	2.3	2.4	.6	.9	.8	1.2	2.4	2.2	2.2	2.4	2.2
14	2.2	2.3	2.4	.6	.9	.8	**1.6	2.3	2.1	2.3	2.5	2.2
15	2.2	2.3	1.7	.6	.8	.9	2.1	2.4	2.1	2.2	2.5	2.2
16	2.2	2.3	.8	.6	.8	.8	2.1	2.4	2.3	2.2	2.4	2.3
17	2.2	2.3	.8	.6	.8	.8	2.1	2.4	2.1	2.3	2.1	2.4
18	2.2	2.3	.8	.6	.8	.8	2.1	2.4	2.1	2.2	**2.1	2.2
19	2.2	2.3	.8	.6	.7	.9	2.1	2.5	2.2	2.2	2.4	2.2
20	2.2	2.3	.8	.6	.8	1.0	2.2	2.4	2.1	2.2	2.2	2.1
21	2.2	2.3	.8	.6	.8	1.0	2.2	2.4	2.1	2.3	2.2	2.1
22	2.2	2.3	.8	.6	.8	1.1	2.3	2.4	2.1	2.2	2.3	2.1
23	2.2	2.3	.8	.6	.8	1.3	2.2	2.4	2.2	2.2	2.4	2.2
24	2.2	2.3	.8	.6	.8	1.2	2.2	**2.4	2.1	2.3	2.3	2.2
25	2.2	2.3	.7	.7	.8	1.1	**2.4	2.4	2.1	2.2	2.2	2.1
26	2.2	2.3	.7	.8	.8	1.0	2.4	2.4	2.2	2.3	2.3	2.2
27	2.2	2.3	.7	.7	.7	.9	2.4	2.3	2.1	2.1	2.1	2.1
28	2.2	2.3	.7	.7	.7	.9	2.3	2.2	2.1	2.2	2.1	2.2
29	2.2	2.3	.7	.7	-----	1.0	2.3	2.4	2.1	2.3	2.1	2.1
30	2.2	2.3	.7	.7	-----	1.1	2.3	2.3	**2.1	2.3	2.1	2.1
31	2.2	-----	.7	.7	-----	1.2	-----	2.4	-----	2.5	1.9	-----
TOTAL	68.3	67.0	50.1	20.6	22.4	28.0	53.8	73.7	65.4	68.5	72.3	64.9
MEAN	2.20	2.23	1.62	0.66	0.80	0.90	1.79	2.38	2.18	2.21	2.33	2.16
MAX	2.3	2.6	4.1	0.8	1.4	1.3	2.4	2.6	2.4	2.5	2.6	2.4
MIN	2.1	1.8	0.7	0.6	0.7	0.7	1.1	2.2	2.1	2.1	1.9	1.9
AC-FT	135	133	99	41	44	56	107	146	130	136	143	129

CALENDAR YEAR 1960: MAX 4.1 MIN 0.4 MEAN 1.49 AC-FT 1,080
WATER YEAR 1960-61: MAX 4.1 MIN 0.6 MEAN 1.79 AC-FT 1,300

** Discharge determined by Parshall flume on this day.

SAN JOAQUIN RIVER BASIN

11-2370. Big Creek below Huntington Lake, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1																			58	52	59	54	61	57
2																			57	52	57	55	61	57
3																			56	54	59	56	60	56
4																			57	53	59	57	60	57
5																			56	52	59	57	60	57
6																			56	51	61	56	61	57
7																			57	52	61	57	60	56
8																			58	52	61	56	59	56
9																			58	53	60	56	59	56
10																			59	54	58	57	60	56
11																			59	54	58	57	60	56
12																			57	54	60	56	60	56
13																			59	54	60	56	59	55
14																			58	53	59	55	59	55
15																			58	53	59	55	59	55
16																			59	54	59	55	58	57
17																			59	54	58	54	57	55
18																			58	53	59	55	57	53
19																			58	54	60	57	57	54
20																			58	53	62	58	58	54
21																			59	53	62	58	57	55
22																			59	54	62	58	56	53
23																			59	55	62	58	56	53
24																			59	55	62	58	57	54
25																			59	55	62	58	57	54
26																			59	54	61	57	57	54
27																			59	54	58	56	56	54
28																			58	54	59	55	56	55
29																			58	54	60	56	56	54
30																			58	53	60	56	56	53
31																			59	54	61	57	---	---
Avg																			58	53	60	56	58	55

11-2375. Pitman Creek below Tamarack Creek, Calif.

Location.--Lat 37°11'55", long 119°12'45", in NW¹/₄ sec.35, T.8 S., R.25 E., on right bank 0.8 mile downstream from confluence of Tamarack Creek and South Fork Tamarack Creek, 1.4 miles upstream from mouth, and 1.9 miles east of town of Big Creek.

Drainage area.--22.7 sq mi.

Records available.--October 1927 to September 1961. Records for water year 1928 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder, Parshall flume, and concrete control. Altitude of gage is 7,005 ft (from Southern California Edison Co. contour map). Prior to Sept. 29, 1940, at site 10 ft downstream on left bank at same datum.

Average discharge.--34 years, 37.1 cfs (26,860 acre-ft per year).

Extremes.--Maximum discharge during year, 138 cfs Apr. 16 (gage height, 4.62 ft); minimum daily, 0.1 cfs at times.

1927-61: Maximum discharge, 3,670 cfs Dec. 23, 1955 (gage height, 11.20 ft), from rating curve extended above 350 cfs on basis of slope-area measurement at gage height 10.77 ft; no flow Oct. 15-18, 1931.

Remarks.--Records good except those for period of ice effect, which are fair. No diversion above station; practically all flow diverted below station to Huntington-Shaver conduit.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.85	0.1	2.6	2.5	3.4	18
1.9	.2	2.8	3.4	3.7	39
2.0	.4	3.0	4.5	4.0	65
2.2	1.0	3.2	9.0	4.5	119
2.4	1.7				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	3.8		1	5	23	83	50	3.1	0.3	0.1
2	2	2	5.4		1	7	34	83	*52	2.8	3	1
3	2	2	4	(**)	1	7	52	*84	50	4.6	**3	1
4	2	2	.7		1	7	70	74	43	5.4	3	1
5	**2	2	2		1	7	73	62	*39	4.3	2	1
6		1.0	(**)		1	6	68	58	37	**3.6	3	**1
7	3	.7			1	**6	*62	66	35	2.9	3	1
8	2	**6	5		1	6.6	57	72	31	2.4	3	1
9	3	.6			1	6.6	57	*76	29	2.1	2	1
10	3	.5			1	6.6	56	84	25	1.9	2	1
11	3	.5			3	6.6	62	75	23	1.7	.4	1
12	3	.7		0.2	4	6.6	65	59	21	1.5	1.0	1
13	3	.8	2		4	8.3	*57	55	19	1.4	.6	1
14	2	.8			4	10	57	65	17	1.3	.4	1
15	2	.8			4	11	75	73	16	1.1	3	1
16	2	.7			4	11	97	73	13	1.0	3	2
17	2	.7			3	10	103	73	13	.9	2	8
18	2	.7			3	10	*92	74	11	.8	2	4
19	2	.7			3	10	73	74	9.8	.8	2	3
20	2	.6			3	11	60	64	8.3	.7	2	3
21	2	.6			3	15	53	63	7.2	.6	2	3
22	2	.6			4	19	50	*61	*6.2	.6	2	3
23	2	.6	1		4	20	46	58	5.5	.5	2	3
24	2	.6			4	17	45	54	5.3	**2.5	1	3
25	2	.9			4	17	41	52	5.2	.5	1	2
26	2	.7			5	13	45	47	4.9	.4	1	2
27	2	.9			4	13	51	43	4.4	.4	1	2
28	2	.8		.5	5	12	60	40	**4.0	.4	2	2
29	2	.8				12	70	44	3.6	.3	2	2
30	2	.8				12	79	38	3.4	.3	2	2
31	2					14		44		.3	1	
Total	6.9	19.9	23.3	8.0	78	329.3	1833	1971	591.8	49.1	8.2	5.9
Mean	0.22	0.66	0.75	0.26	2.8	10.6	61.1	63.6	19.7	1.58	0.26	0.20
Max.	0.3	1.0	5.4	-	5	20	103	84	52	5.4	1.0	0.8
Min.	0.2	0.2	-	-	1	5	23	38	3.4	0.3	0.1	0.1
Ac-ft	14	39	46	16	155	653	3,640	3,910	1,170	97	16	12

Calendar year 1960:

Max 175

Min -

Mean 17.0

Acres-feet 12,330

Water year 1960-61:

Max 103

Min -

Mean 13.5

Acres-feet 9,770

Peak discharge (base, 200 cfs).--No peak above base.

* Discharge measurement made on this day.

** Field estimate made on this day.

Note.--Stage-discharge relation affected by ice Dec. 3 to Mar. 7.

SAN JOAQUIN RIVER BASIN

11-2390. Huntington-Shaver conduit at outlet, Calif.

Location.--Lat 37°10', long 119°14', in NW₄ sec.15, T.9 S., R.25 E., on left bank at tunnel outlet and 4 miles south of town of Big Creek.

Records available.--October 1928 to September 1961. Monthly discharge only for October 1928, published in WSP 1315-A.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,680 ft (from topographic map).

Average discharge.--33 years, 205 cfs (148,400 acre-ft per year).

Extremes.--1928-61: Maximum daily discharge, 1,780 cfs June 3, 4, 1938; minimum daily, 0.9 cfs Sept. 8-11, 1955.

Remarks.--Records good. Conduit diverts from Huntington Lake to Shaver Lake, with additions from Pitman Creek and seepage en route.

Cooperation.--Water-stage recorder graph and 17 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	22	18	20	1.3	1.8	6.7	26	87	51	2.0	1.5	2.8
2	22	18	14	1.3	1.8	8.4	37	86	*54	2.0	*1.5	2.8
3	22	19	3.8	1.3	2.0	8.4	56	*87	52	3.8	1.4	2.8
4	22	19	2.0	*1.3	2.0	8.4	74	77	46	5.5	1.4	2.8
5	*22	19	1.4	1.3	2.0	8.1	78	66	42	4.0	1.4	2.8
6	22	19	*1.3	1.2	2.3	*7.4	75	62	40	2.8	1.4	2.8
7	22	19	1.3	1.2	2.3	7.0	*70	70	37	2.3	1.4	2.8
8	22	19	1.3	1.2	2.3	7.0	61	75	34	2.0	1.4	*2.8
9	22	*18	1.3	A1.2	2.5	7.0	63	79	30	2.0	1.4	2.8
10	22	18	1.3	A1.2	*2.8	7.4	61	86	26	1.8	1.4	2.8
11	22	18	1.3	A1.2	4.9	7.4	68	79	24	1.8	1.4	2.8
12	21	19	1.3	A1.2	5.5	7.4	71	63	23	1.8	1.4	2.8
13	76	19	1.3	A1.2	9.8	8.8	63	59	21	*1.5	1.4	2.8
14	*117	19	1.3	A1.2	9.2	11	64	70	18	1.5	1.4	2.8
15	115	19	1.3	A1.2	4.9	11	79	77	16	1.5	1.4	2.8
16	114	19	1.3	A1.2	4.9	12	99	76	15	1.5	1.4	2.8
17	114	19	1.4	A1.2	4.6	11	104	77	14	1.5	1.5	2.8
18	327	19	1.4	1.2	4.3	11	*93	78	12	1.5	227	2.8
19	509	19	1.4	1.2	4.0	11	79	78	11	1.5	563	2.8
20	503	19	1.3	1.2	4.3	12	65	68	9.5	1.5	558	2.8
21	*495	19	1.5	1.2	4.6	15	58	66	8.8	1.5	*554	2.8
22	487	19	1.5	1.2	5.2	19	54	66	7.7	1.5	551	2.8
23	479	19	1.4	1.2	5.5	23	47	62	6.1	1.5	549	2.8
24	216	19	1.3	1.2	5.5	19	44	59	4.6	1.8	544	3.0
25	17	19	1.3	1.2	5.9	15	44	55	4.3	1.8	541	3.0
26	17	19	1.4	1.2	6.1	15	48	50	4.0	1.8	536	3.0
27	18	19	1.5	1.3	5.8	14	53	46	3.8	1.8	533	3.0
28	18	19	1.5	1.4	6.1	13	63	43	3.3	1.8	*256	3.0
29	18	19	1.4	1.4	-----	14	74	46	2.8	1.5	10	3.0
30	18	19	1.4	1.5	-----	15	81	40	2.5	1.5	2.8	3.0
31	18	-----	1.3	1.8	-----	20	-----	44	-----	1.5	2.8	-----
TOTAL	3,939	565	76.5	39.1	113.9	360.4	1,954	2,077	623.4	61.8	5,465.2	85.4
MEAN	127	18.8	2.47	1.26	4.07	11.6	65.1	67.0	20.8	1.99	176	2.85
MAX	509	19	20	1.8	6.1	23	104	87	54	5.5	563	3.0
MIN	17	18	1.3	1.2	1.8	6.7	26	40	2.5	1.5	1.4	2.8
AC-FT	7,810	1,120	192	78	226	715	3,880	4,120	1,240	123	10,840	169

Calendar Year 1960: Max 830 Min 1.2 Mean 80.6 Ac-ft 58,500

Water Year 1960-61: Max 563 Min 1.2 Mean 42.1 Ac-ft 30,470

* Discharge measurement made on this day.

A No gage-height record.

11-2395. Shaver Lake near Big Creek, Calif.

Location.--Lat 37°09', long 119°18', in SE¼ sec.13, T.9 S., R.24 E., near center of dam on Stevenson Creek, 6 miles southwest of town of Big Creek.

Drainage area.--29.1 sq mi.

Records available.--November 1909 to September 1960. Prior to January 1927, monthly contents only, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Southern California Edison Co.). Prior to Jan. 11, 1927, gage on rock-filled dam a short distance upstream at different datum.

Extremes.--Maximum contents during year, 27,600 acre-ft June 13 (elevation, 5,303.61 ft); minimum, 9,600 acre-ft Oct. 17 (elevation, 5,280.75 ft).

1909-61: Maximum contents, 135,900 acre-ft July 5, 1946 (elevation, 5,370.25 ft); minimum, 26 acre-ft Jan. 29, 1927, during period of construction.

Note.--Prior to 1960, maximum and minimum daily contents were published.

Remarks.--Storage began prior to 1905. Lake formed by rock-fill dam (usable capacity, 5,500 acre-ft). Water diverted by Fresno Flume and Lumber Co.'s flumes Nos. 1 and 2 beginning prior to 1907 and discontinued July 7, 1920. Present lake formed by concrete-arch dam; dam completed Nov. 18, 1927. Usable capacity of present lake, 135,300 acre-ft between elevations 5,255 (trashrack foundation) and 5,370 ft (crest of spillway) above mean sea level. Water is received from Pitman Creek (since Feb. 22, 1928) and Huntington Lake (since Apr. 21, 1928) through Huntington-Shaver conduit and released for power development in Big Creek plants. Figures given herein represent usable contents.

Cooperation.--Record of contents furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-feet)

5,280	9,190	5,292	17,100	5,298	22,200
5,283	10,900	5,294	18,700	5,300	24,000
5,286	12,800	5,296	20,400	5,305	29,000
5,290	15,600				

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.3	10.2	12.4	13.2	13.6	14.5	16.7	22.1	26.7	23.4	16.3	16.8
2	11.3	10.1	12.7	13.2	13.6	14.5	16.9	22.3	26.8	23.4	15.9	16.8
3	11.1	10.1	12.7	13.2	13.7	14.6	17.0	22.5	26.9	23.3	15.4	16.8
4	11.0	10.1	12.8	13.2	13.7	14.6	17.3	22.7	27.0	23.2	14.9	16.5
5	10.7	10.2	12.8	13.3	13.7	14.7	17.5	22.8	27.1	23.1	14.6	15.9
6	10.4	10.3	12.8	13.3	13.7	14.7	17.7	23.1	27.2	23.0	14.6	15.5
7	10.0	10.2	12.8	13.3	13.8	14.8	17.9	23.2	27.3	23.0	14.0	15.3
8	9.94	10.3	12.9	13.3	13.8	14.8	18.1	23.4	27.3	23.0	13.5	15.2
9	9.92	10.3	12.9	13.3	13.8	14.8	18.2	23.6	27.4	23.0	13.0	15.2
10	9.92	10.4	12.9	13.3	13.9	14.9	18.4	23.8	27.4	22.7	12.6	15.2
11	9.90	10.5	12.9	13.3	14.1	14.9	18.6	23.9	27.5	22.3	12.2	14.9
12	9.80	10.7	12.9	13.4	14.1	14.9	18.8	24.1	27.5	21.9	12.2	14.5
13	9.80	10.8	12.9	13.4	14.2	15.0	18.9	24.2	27.4	21.4	12.2	14.0
14	9.91	10.9	12.9	13.4	14.3	15.0	19.1	24.4	27.4	20.9	11.9	13.7
15	9.87	10.9	12.9	13.4	14.3	15.1	19.3	24.5	27.3	20.9	11.6	13.3
16	9.83	11.0	12.9	13.3	14.3	15.2	19.5	24.7	27.3	20.9	11.1	12.9
17	9.62	11.0	12.9	13.3	14.4	15.3	19.8	24.8	27.1	20.5	10.7	12.5
18	9.71	11.1	13.0	13.3	14.4	15.3	20.0	25.0	26.9	20.0	10.5	12.1
19	10.2	11.1	13.0	13.2	14.4	15.4	20.2	25.2	26.4	19.4	11.7	11.7
20	10.6	11.2	13.0	13.2	14.5	15.5	20.3	25.3	25.8	19.0	12.8	11.3
21	11.1	11.3	13.0	13.2	14.3	15.6	20.5	25.5	25.3	18.8	13.4	11.3
22	11.7	11.3	13.0	13.2	14.3	15.7	20.7	25.6	24.8	18.8	14.1	11.3
23	12.6	11.3	13.1	13.2	14.4	15.8	20.9	25.8	24.4	18.8	14.7	11.3
24	12.6	11.4	13.1	13.2	14.4	16.0	21.0	25.9	24.1	18.5	15.3	11.3
25	12.2	11.4	13.1	13.3	14.4	16.1	21.1	26.0	24.0	18.1	15.9	11.3
26	11.6	11.5	13.1	13.4	14.5	16.2	21.3	26.1	23.8	17.9	16.9	11.3
27	11.2	11.6	13.1	13.5	14.4	16.3	21.4	26.2	23.7	17.4	18.0	11.3
28	10.7	11.6	13.2	13.5	14.5	16.4	21.6	26.3	23.6	17.1	18.0	11.3
29	10.5	11.7	13.2	13.5	-----	16.4	21.7	26.4	23.5	17.1	17.5	11.3
30	10.3	11.7	13.2	13.6	-----	16.5	21.9	26.5	23.4	17.0	17.1	11.3
31	10.3	-----	13.2	13.6	-----	16.6	-----	26.6	-----	16.6	17.0	-----
(†)	5,282.01	5,284.37	5,286.62	5,287.19	5,288.44	5,291.38	5,297.75	5,302.63	5,299.35	5,291.32	5,291.87	5,283.69
(‡)	-1,000	+1,400	+1,500	+400	+900	+2,100	+3,300	+4,700	-3,200	-6,800	+400	-5,700

Calendar year 1960..... † -12,000

Water year 1960-61..... ‡ 0

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2420. San Joaquin River above Willow Creek, near Auberry, Calif.

Location.--Lat 37°08'40", long 119°27'00", in SW $\frac{1}{4}$ sec.15, T.9 S., R.23 E., on right bank 1,000 ft downstream from diversion dam, 0.4 mile upstream from Willow Creek, and 4.2 miles northeast of Auberry.

Drainage area.--1,299 sq mi.

Records available.--March 1951 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,180 ft (from topographic map).

Average discharge.--10 years, 425 cfs (307,700 acre-ft per year).

Extremes.--Maximum discharge during year, 34 cfs July 21 (gage height, 4.21 ft); minimum daily, 5.1 cfs Dec. 3.

1951-61: Maximum discharge, 73,200 cfs Dec. 23, 1955 (gage height, 54.2 ft, from floodmarks), from rating curve extended above 7,000 cfs on basis of computed flow over dam; no flow Sept. 25, 1951.

Remarks.--Records fair. Flow regulated by 9 powerplants and 6 reservoirs with combined capacity of about 559,900 acre-ft. Conduit to powerhouse No. 4 diverts 1,000 ft above station.

Cooperation.--Water-stage-recorder graph and 14 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 3-6)

2.9	4.6	3.6	14
3.0	5.5	3.8	20
3.2	7.6	4.0	26
3.4	10		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	20	21	17	17	17	*16	6.7	12	18	21	21	22
2	20	21	5.7	18	16	17	6.7	*13	*18	21	21	22
3	20	19	*5.1	18	14	16	6.6	13	18	21	*21	22
4	20	19	11	18	15	16	*6.6	14	18	22	21	22
5	20	19	13	18	16	15	6.6	14	18	22	21	*22
6	*21	17	16	*19	17	15	6.7	15	18	*22	21	22
7	21	*17	16	19	17	14	8.3	9.4	19	22	22	22
8	21	19	16	19	*17	16	8.4	11	19	22	21	22
9	21	19	15	19	*17	15	9.2	12	19	20	21	22
10	21	19	16	19	17	15	10	13	19	21	21	22
11	21	19	17	19	16	15	10	13	19	21	21	22
12	21	14	17	19	8.8	14	11	13	19	21	21	22
13	22	7.4	17	19	8.9	14	11	13	19	22	21	*22
14	22	10	17	19	11	14	11	14	20	22	21	21
15	22	15	17	19	12	11	11	14	20	21	21	21
16	22	17	17	19	13	8.1	11	15	20	21	21	21
17	22	17	17	19	13	8.9	12	16	20	21	21	21
18	22	17	17	19	13	8.5	12	16	21	21	21	21
19	22	17	17	20	15	8.1	13	18	21	21	21	21
20	22	18	17	19	16	8.8	13	16	21	21	21	21
21	21	18	16	20	16	9.5	13	15	21	22	21	22
22	21	18	16	19	17	9.5	11	16	21	21	21	22
23	21	19	16	19	17	8.6	11	16	21	21	21	22
24	21	19	16	19	17	7.6	11	17	21	21	21	22
25	21	19	16	20	17	7.1	12	17	21	21	23	22
26	21	15	17	16	17	6.8	12	17	21	21	22	22
27	21	14	17	9.7	17	6.7	11	17	21	21	22	22
28	21	16	17	13	17	6.4	11	18	21	21	22	22
29	21	17	17	17	-----	7.5	11	18	21	21	22	22
30	21	17	17	17	-----	9.4	11	18	21	21	22	21
31	21	-----	17	17	-----	7.9	-----	18	-----	21	21	-----
TOTAL	654	513.4	482.8	561.7	424.7	351.4	304.8	461.4	594	658	659	652
MEAN	21.1	17.1	15.6	18.1	15.2	11.3	10.2	14.9	19.8	21.2	21.3	21.7
MAX	22	21	17	20	17	17	13	18	21	22	23	22
MIN	20	7.4	5.1	9.7	8.8	6.4	6.6	9.4	18	20	21	21
AC-FT	1,300	1,020	958	1,110	842	697	605	915	1,180	1,310	1,310	1,290

CALENDAR YEAR 1960: MAX 30 MIN 5.1 MEAN 14.7 AC-FT 10,660
WATER YEAR 1960-61: MAX 23 MIN 5.1 MEAN 17.3 AC-FT 12,540

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

581

11-2434. Bass Lake near Bass Lake, Calif.

Location.--Lat 37°17'36", long 119°31'40", in NE¼ sec.26, T.7 S., R.22 E., at outlet tower at dam on North Fork Willow Creek, 2.2 miles southeast of town of Bass Lake, and 5 miles north of town of North Fork.

Drainage area.--50.5 sq mi.

Records available.--January 1912 to September 1961. Bass Lake was formerly called Crane Valley Reservoir.

Gage.--Water-stage recorder. Datum of gage is mean sea level (levels by Pacific Gas & Electric Co.).

Extremes.--Maximum contents during year, 32,450 acre-ft June 18 (elevation, 3,364.52 ft); minimum, 20,010 acre-ft (elevation, 3,350.47 ft).

1911-61: Maximum contents, 45,960 acre-ft June 17, 1923 (elevation, 3,376.8 ft); minimum, 35 acre-ft Nov. 19, 1953 (elevation, 3,270.2 ft).

Remarks.--Reservoir formed by earth and rock-fill dam; completed in 1901 and raised in 1910. Since 1910 usable contents 45,100 acre-ft between elevations 3,280.22 ft (invert of outlet conduit No. 3) and 3,376.40 ft (top of spillway gates) above mean sea level. Additional storage of 300 acre-ft not available for release. Water is released through Crane Valley powerhouse below dam for use in three small powerhouses before being discharged into Kerckhoff Reservoir at Wishon powerhouse. Water diverted from South Fork Willow Creek via Browns Creek ditch into Bass Lake near left end of dam. Madera Irrigation District has water rights to divert up to 50 cfs from North Fork Willow Creek through Sequel ditch into Welder Creek (Fresno River Basin) during October and March to July each year. Chilkoot ditch can divert up to 7 cfs from Chilkoot Creek into North Fork Willow Creek just upstream from diversion dam from October 1 to August 1 each water year if available. Records, including extremes, show contents at 12 p.m.

Cooperation.--Records of contents furnished by Pacific Gas & Electric Co.

Month-end contents, in acre-feet, water year October 1960 to September 1961

Date	Contents
Sept. 30.....	25,100
Oct. 31.....	22,300
Nov. 30.....	22,000
Dec. 31.....	20,300
Jan. 31.....	20,800
Feb. 28.....	23,000
Mar. 31.....	26,200
Apr. 30.....	29,600
May 31.....	31,700
June 30.....	32,300
July 31.....	31,500
Aug. 31.....	28,900
Sept. 30.....	25,600

SAN JOAQUIN RIVER BASIN

11-2435. Pacific Gas & Electric Co. conduit No. 3 near Bass Lake, Calif.

Location--Lat 37°17'25", long 119°31'45", in SE¼ sec. 26, T.7 S., R.22 E., on left bank 1,000 ft downstream from Crane Valley powerhouse and dam and 2.5 miles southeast of town of Bass Lake.

Records available--October 1940 to September 1961. Prior to October 1954, published as "near Crane Valley Reservoir."

Gage--Water-stage recorder and concrete flume. Altitude of gage is 3,300 ft (from topographic map).

Average discharge--21 years, 64.9 cfs (46,990 acre-ft per year).

Extremes--1940-61: Maximum daily discharge, 166 cfs Aug. 28, 1956; no flow at times.

Remarks--Records excellent. Conduit diverts from Bass Lake in sec. 26, T.7 S., R.22 E. Water passes through Crane Valley powerhouse, then to powerhouse No. 3, and is stored temporarily at Manzanita Lake on North Fork Willow Creek; flow then diverted to powerhouses No. 2 and No. 1A before it enters San Joaquin River at Kerckhoff Reservoir through Wishon powerhouse No. 1.

Cooperation--Water-stage-recorder graph and 11 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	52	51	0.8	5.8	0.3	0.3	9.2	7.7	3.3	51	51
2	7.4	52	28	13	2	6.9	3	1	2	1.0	51	3
3	53	40	.8	50	.6	3	8.4	2	7.0	7.4	2	6.7
4	53	52	6.6	50	6.9	3	3	12	4	6	7.0	3
5	53	.8	83	50	2	6.9	*3	2	8.1	7.3	3	102
6	53	51	100	46	6.8	2	8.4	2	5	7	6.8	102
7	*53	52	99	.7	2	2	1	7.5	7.4	7.2	5	102
8	1.5	52	98	6.8	6.8	6.9	1	.6	4	2	7.0	102
9	7.9	52	100	50	2	3	8.2	.6	7.3	7.0	.6	5
10	22	52	.7	.5	6.9	.9	4	10	2	2	6.8	6.9
11	53	.7	6.5	50	4	4.7	4	*.6	7.2	7.1	70	102
12	53	.8	100	.3	6.8	2	4	.6	2	*.2	.6	103
13	53	6.9	100	6.5	2	2	5	8.9	7.2	7.0	7.0	102
14	52	52	99	.3	2	7.0	2	2	2	2	70	51
15	.6	52	99	6.4	6.9	9.8	1	2	7.2	7.1	70	52
16	7.2	51	99	.5	4	11	1	8.8	*.2	5	73	5
17	4.6	52	.3	5.2	3.7	9.3	1	2	7.1	51	53	6.9
18	4.9	51	5.7	4.1	3	8.8	1	2	.6	2	52	52
19	52	.4	58	.3	6.9	9.2	13	11	7.3	7.2	3	52
20	27	6.7	99	5.4	2	7.0	3	1.2	.6	2	6.9	52
21	52	*.8	*105	.3	2	2	3	1.2	7.4	7.5	4.5	51
22	.4	51	100	5.4	6.9	2	2.2	9.1	21	.8	4.5	52
23	6.8	51	99	*.3	*1.5	7.0	103	.4	.9	7.5	102	5
24	103	.5	.5	6.1	2	3	3	7.9	8.3	.7	32	7.0
25	103	51	.5	.3	6.8	3	4.0	.8	3	7.5	51	52
26	102	.5	6.6	6.2	1.6	6.7	.9	7.4	7.1	.6	.5	52
27	*84	7.0	87	.3	3.8	.5	.9	2	2	7.4	8.7	*56
28	103	51	99	6.1	1.5	.5	9.5	7.2	7.0	.6	51	53
29	.7	51	99	2	7.2	2	2	2	2	7.5	51	52
30	7.1	51	50	6.1	4	2	2	7.2	14	3	51	3
31	52	.8	.2	2	7.0	2	2	2	2	7.3	51	
Total	1,311.4	1,045.4	1,881.0	415.2	83.1	120.7	163.5	114.3	143.4	163.9	1,083.4	1,422.9
Mean	42.3	34.8	60.7	13.4	2.97	3.89	5.45	3.69	4.78	5.29	34.9	47.4
Max.	103	52	105	50	6.9	11	103	12	21	51	102	103
Min.	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.3
Ac-ft	2,600	2,070	3,730	824	165	239	324	227	284	325	2,150	2,820

Calendar year 1960: Max 159 Min 0.1 Mean 42.5 Acre-feet 30,840
 Water year 1960-61: Max 105 Min 0.1 Mean 21.8 Acre-feet 15,760

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

583

11-2440. North Fork Willow Creek near Bass Lake, Calif.

Location.--Lat 37°17'20", long 119°31'45", in SE¼ sec.26, T.7 S., R.22 E., on right bank 1,500 ft downstream from Bass Lake spillway and 2.5 miles southeast of town of Bass Lake.

Drainage area.--50.8 sq mi.

Records available.--May 1940 to September 1961. Prior to October 1944, published as Willow Creek below Crane Valley Reservoir. October 1944 to September 1954, published as "below Crane Valley Reservoir."

Gage.--Water-stage recorder. Altitude of gage is 3,200 ft (from topographic map).

Average discharge.--21 years, 16.3 cfs (11,800 acre-ft per year).

Extremes.--Maximum discharge during year, 3.1 cfs Dec. 1 (gage height, 1.33 ft); minimum daily, 0.2 cfs Feb. 25, 27, 28, Mar. 1-5, 7-14.
1940-61: Maximum discharge, 847 cfs Feb. 11, 1941 (gage height, 5.85 ft); minimum daily, 0.1 cfs Nov. 13-16, 1940.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Bass Lake (see p. 581) and by diversion into Pacific Gas & Electric Co. conduit No. 3 near Bass Lake (see preceding page). At times in October and March to July, up to 50 cfs may be diverted through Soquel ditch into Nelder Creek in Fresno River basin. Brown's Creek ditch diverted 10,080 acre-ft from South Fork Willow Creek into Bass Lake in 1961 water year.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.5	1.3	0.4	0.4	0.2	0.3	0.4	0.5	0.5	0.4	0.5
2	3	5	1.5	4	5	2	3	4	5	5	4	5
3	3	6	8	4	4	2	3	4	5	5	4	6
4	3	6	7	4	4	2	3	4	5	5	5	6
5	3	7	6	4	4	2	* 3	4	5	5	5	7
6	5	7	6	4	3	3	3	4	5	5	5	6
7	* 5	7	7	4	3	2	3	4	5	5	5	6
8	4	7	6	4	3	2	3	5	5	5	5	6
9	3	7	6	4	3	2	3	5	5	5	5	6
10	3	7	6	4	3	2	3	5	5	5	5	6
11	3	7	5	4	7	2	3	* 4	5	6	4	6
12	3	1.2	6	4	7	2	4	4	5	6	5	6
13	3	1.1	5	4	6	2	4	4	5	6	5	6
14	3	9	5	4	5	2	4	4	5	6	5	5
15	3	6	5	4	5	5	4	4	5	6	5	5
16	3	6	5	4	8	3	3	4	* 5	6	5	5
17	3	6	5	4	6	6	3	4	5	5	5	5
18	3	6	5	4	6	4	5	4	5	5	5	5
19	3	6	5	4	5	4	5	4	5	5	5	4
20	3	6	5	4	5	3	3	4	5	5	5	4
21	3	* 6	* 6	4	4	3	3	4	5	5	* 5	4
22	3	6	6	4	4	3	8	4	5	5	5	4
23	3	6	6	* 3	* 3	4	6	4	4	5	5	4
24	3	6	4	3	3	4	6	4	5	5	5	5
25	4	6	4	3	2	6	4	5	5	5	5	5
26	4	9	4	1.2	3	4	4	5	4	4	5	3
27	* 5	7	4	6	2	5	4	5	5	4	5	* 5
28	5	7	4	5	2	4	4	4	5	4	5	5
29	5	7	4	4	—	4	4	4	5	4	5	5
30	4	6	4	4	—	3	4	4	5	5	5	4
31	5	—	4	4	—	3	—	5	5	5	5	—
Total	10.9	20.5	18.1	15.2	11.9	9.7	11.4	13.4	14.9	15.9	15.1	14.8
Mean	0.35	0.68	0.58	0.43	0.42	0.31	0.38	0.43	0.50	0.51	0.49	0.49
Max.	0.5	1.2	1.5	1.2	0.8	0.6	0.8	0.5	0.6	0.6	0.5	0.7
Min.	0.3	0.5	0.4	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.3
Ac-ft	22	41	36	26	24	19	23	27	30	32	30	29
Calendar year 1960 :			Max 2.7	Min 0.3		Mean 0.73		Acre-feet 532				
Water year 1960-61 :			Max 1.5	Min 0.2		Mean 0.47		Acre-feet 339				

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 10-27, Apr. 14 to May 10, Sept. 5-27.

11-2465. Willow Creek at mouth, near Auberry, Calif.

Location--Lat 37°09'10", long 119°27'30", in NE $\frac{1}{4}$ sec.16, T.9 S., R.23 E., on left bank 40 ft upstream from bridge, 0.4 mile upstream from mouth, 1.3 miles downstream from Whiskey Creek, and 4.3 miles northeast of Auberry.

Drainage area--130 sq mi.

Records available--January 1952 to September 1961.

Gage--Water-stage recorder with thermograph attachment. Altitude of gage is 1,200 ft (from topographic map).

Average discharge--9 years, 43.8 cfs (31,710 acre-ft per year).

Extremes--Maximum discharge during year, 590 cfs Dec. 2 (gage height, 8.48 ft); no flow for several months.

1952-61: Maximum discharge, 12,000 cfs Dec. 23, 1955 (gage height, 28.5 ft, from floodmarks), estimated on basis of rate of inflow into Bass Lake; no flow at times in 1955, 1959-61.

Remarks--Records fair. Flow regulated by Bass Lake (see p. 581) and diversion into Pacific Gas & Electric Co. conduit No. 1.

Cooperation--Water-stage-recorder graph and 13 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.5	0	4.2	2.8	6.0	81
3.7	.1	4.4	5.3	6.5	138
3.8	.2	4.7	10	7.0	216
3.9	.4	5.0	18		
4.0	1.1	5.5	43		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1		0.1	*23	3.4	8.2	*7.4	16	8.3	5.9			
2		.2	*171	3.3	7.8	7.6	16	*8.0	*5.8		(*)	
3		.2	20	3.3	10	8.5	16	7.8	5.5			
4		3.3	12	3.2	8.3	8.3	*16	7.4	4.4			
5		2.4	8.9	*3.3	7.4	8.0	15	7.3	3.8			(*)
6	(*)	4.0	7.1	3.3	7.1	9.6	14	8.5	3.4	(*)		
7		4.7	6.7	3.2	6.9	7.8	13	14	3.3			
8		*2.7	5.9	3.1	*6.6	3.7	12	13	3.1			
9		2.4	5.5	3.2	6.6	3.5	11	9.4	3.0			
10		2.4	5.2	3.2	6.9	3.3	10	8.3	2.7			
11		2.3	5.0	3.3	14	3.0	10	8.7	2.5			
12		8.1	*4.9	3.3	32	7.6	9.4	8.5	2.4			
13		16	4.7	3.2	16	8.5	11	8.0	2.3			
14		*9.4	4.6	3.2	13	9.8	11	7.3	2.1			
15		4.6	4.4	3.3	12	*15	9.1	6.9	1.5			
16		3.1	4.3	3.4	13	14	8.3	6.3	1.4			
17		2.7	4.2	3.3	11	18	7.6	5.9	1.2			
18		2.6	4.2	3.2	10	18	7.1	5.5	.9			
19		2.5	4.2	3.1	9.1	22	6.4	5.6	.8			
20		2.4	4.4	3.1	9.1	12	6.4	8.2	.5			
21		2.1	4.3	3.1	8.7	14	6.4	6.9	.4			
22		2.0	4.2	3.0	8.7	13	10	5.9	.3			
23		1.8	4.2	3.0	8.5	16	11	5.6	.2			
24		1.6	4.0	3.1	8.2	17	9.6	5.5	.2			
25		1.5	4.2	3.2	7.8	22	10	5.3	.1			
26		7.2	4.0	20	7.6	18	11	5.0	.1	(*)		
27		7.1	4.0	*15	8.7	17	13	4.7	.1			
28		4.6	3.9	9.4	7.8	16	11	4.2	0			
29		3.8	3.8	7.4	-----	15	10	4.0	0			
30		3.5	3.8	7.1	-----	15	9.1	4.4	0			
31		-----	3.5	7.1	-----	17	-----	4.3	-----			-----
TOTAL	0	111.3	354.1	146.3	281.0	326.4	326.4	218.7	57.9	0	0	0
MEAN	0	3.71	11.4	4.72	10.0	12.8	10.9	7.05	1.93	0	0	0
MAX	0	16	171	20	32	22	16	14	5.9	0	0	0
MIN	0	0.1	3.5	3.0	6.6	7.4	6.4	4.0	0	0	0	0
AC-FT	0	221	702	290	557	735	647	434	115	0	0	0

CALENDAR YEAR 1960: MAX 271 MIN 0 MEAN 10.1 AC-FT 7,360
 WATER YEAR 1960-61: MAX 171 MIN 0 MEAN 5.25 AC-FT 3,740

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

585

11-2465. Willow Creek at mouth, near Auberry, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																									
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	
1					-	-	38	37	47	46	50	47	58	52	61	56	60	59							
2					-	-	38	37	47	46	52	50	61	54	62	55	62	59							
3					-	-	37	36	48	46	52	51	64	56	61	56	67	60							
4					-	-	37	36	48	48	51	49	63	59	62	56	69	63							
5					-	-	39	38	48	47	49	48	63	58	61	54	70	64							
6					-	-	38	38	48	47	49	48	62	57	60	56	71	65							
7					-	-	40	38	48	47	49	45	60	56	60	53	72	65							
8					-	-	40	39	49	47	50	46	58	51	62	53	72	66							
9					-	-	40	40	50	48	51	49	58	52	61	56	72	65							
10					-	-	41	40	52	49	52	48	58	52	61	58	73	66							
11					-	-	42	41	52	51	53	49	59	53	61	57	72	67							
12					-	-	43	42	51	46	53	49	59	54	60	55	74	67							
13					-	-	43	41	47	45	55	50	55	50	61	54	76	68							
14					-	-	43	42	48	45	56	52	57	50	63	56	78	70							
15					-	-	44	42	48	46	55	52	60	52	65	59	80	71							
16					-	-	43	42	49	47	52	48	62	55	66	60	81	72							
17					-	-	43	41	48	46	53	50	62	57	67	61	82	73							
18					-	-	43	41	48	45	51	47	62	58	68	62	81	72							
19					-	-	43	41	47	44	53	48	59	54	67	61	83	72							
20					-	-	43	41	48	44	56	51	55	50	62	60	85	74							
21					-	-	43	41	49	45	55	51	54	49	66	58	87	75							
22					-	-	44	42	50	47	56	51	55	51	67	61	84	77							
23					42	41	44	42	50	46	55	53	53	49	66	61	88	76							
24					42	41	45	43	49	46	53	51	52	46	67	60	88	76							
25					42	42	46	44	49	48	51	49	55	48	68	61	86	78							
26					42	42	47	46	49	47	48	46	57	49	68	63	88	77							
27					42	41	46	45	49	46	49	48	58	50	68	62	88	76							
28					41	40	46	45	49	46	52	47	60	51	66	62	-	-							
29					40	38	46	45	-	-	53	48	61	53	66	63	-	-							
30					38	37	47	45	----	----	54	49	60	54	66	60	-	-							
31					38	37	47	46	----	----	56	50	----	----	65	60	----	----							
Avg					-	-	43	41	49	46	52	49	59	53	64	58	-	-							

SAN JOAQUIN RIVER BASIN

11-2470. San Joaquin River below Kerckhoff powerhouse, Calif.

Location.--Lat 37°04'45", long 119°33'35", in NW 1/4 sec.10, T.10 S., R.22 E., on left bank 1.1 miles downstream from Kerckhoff powerhouse and 1.4 miles upstream from Big Sandy Creek.

Drainage area.--1480 sq mi.

Records available.--April 1910 to September 1914, December 1936 to December 1937, December 1942 to September 1961. Published as "near North Fork" 1910-14.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 563.4 ft above mean sea level (levels by Bureau of Reclamation). Prior to Oct. 1, 1914, at site 11 miles upstream at different datum.

Average discharge.--22 years (1910-14, 1943-61), 2,288 cfs (1,656,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,290 cfs Aug. 21 (gage height, 13.32 ft); minimum daily, 126 cfs Oct. 30.

1910-14, 1936-37, 1942-61: Maximum discharge, 92,200 cfs Dec. 23, 1955 (gage height, 51.0 ft, from floodmarks), from rating curve extended above 20,000 cfs on basis of records for San Joaquin River above Willow Creek, near Auberry and Willow Creek at mouth, near Auberry; minimum daily, 71 cfs Nov. 7, 1949.

Remarks.--Records good. Flow regulated by 12 powerplants and 8 reservoirs with total usable capacity of about 609,300 acre-ft.

Earliest storage began in 1901 at Bass Lake (see p. 581). See records for Florence, Lake Thomas A. Edison, Mammoth Pool Reservoir, Huntington, and Shaver Lakes, given elsewhere in this report. Backwater from Millerton Lake has affected record at times since November 1947, when spillway gates were installed at Friant Dam. No backwater effect in this water year.

Cooperation.--Water-stage recorder graph, Telemark readings, and 16 discharge measurements furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Rating table, (gage-height, in feet, and discharge, in cubic feet per second)

6.0	120	10.0	884
7.0	224	12.0	1,630
8.0	380	13.0	2,120

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	607	*481	696	396	445	457	1240	1760	1750	531	711	468
2	153	425	1760	376	740	615	1510	*1760	1750	635	*504	224
3	595	607	1530	452	463	646	1760	1760	1750	856	822	264
4	647	305	877	*409	463	591	1760	1760	1750	844	1120	487
5	820	216	*767	465	449	590	1760	1750	1750	*934	815	*1110
6	*1110	608	799	460	446	387	1760	1750	1750	616	355	925
7	853	453	668	399	438	348	1760	1740	*1740	748	908	573
8	331	261	906	353	*534	540	1760	1730	1740	456	1260	340
9	337	247	830	426	573	634	1760	1700	1740	433	767	192
10	533	*378	732	487	553	*478	*1760	1730	1740	431	788	222
11	492	254	421	446	892	540	1750	1730	1730	431	762	870
12	313	1010	567	421	1180	410	1750	1730	1740	419	417	840
13	553	736	742	507	973	593	1750	1730	1740	583	658	893
14	690	658	819	486	749	607	1750	1730	1740	180	743	1010
15	311	547	779	457	644	920	1750	1730	1740	434	682	855
16	277	398	759	512	579	919	1750	1730	1750	392	732	900
17	691	580	342	257	596	838	1750	1740	1750	304	843	923
18	628	522	347	443	732	726	1760	1730	1750	873	915	1090
19	699	396	557	375	461	806	*1760	1740	1760	1110	318	1110
20	834	361	817	261	723	744	1760	1740	1760	1000	478	1080
21	612	566	688	353	1030	968	1750	1740	1760	589	1090	1080
22	438	442	424	299	518	950	1560	1730	1760	191	913	989
23	259	506	539	387	485	1190	1740	1740	1640	261	746	997
24	693	393	525	*436	599	1550	1590	1740	1600	729	964	908
25	672	395	502	242	434	1060	1560	1740	1440	855	857	1120
26	672	543	241	740	449	990	1510	1740	1170	481	250	760
27	*563	473	585	747	509	1090	1530	1740	1170	831	472	757
28	393	506	513	433	479	974	1750	1740	1000	617	910	974
29	407	*517	530	154	—	827	1760	1740	907	172	1000	798
30	126	501	495	361	—	916	1760	1740	683	278	789	610
31	174	—	437	630	—	1050	—	1750	—	714	402	—
Total	15483	14285	21194	13170	17136	23954	50870	51910	48050	17928	22991	23369
Mean	532	476	684	425	612	773	1,696	1,739	1,602	578	742	779
Max.	1,110	1,010	1,760	747	1,180	1,550	1,760	1,760	1,760	1,110	1,260	1,120
Min.	126	216	241	154	434	348	1,240	1,700	683	172	250	192
Ac-ft	32,690	28,330	42,040	26,120	33,990	47,510	100,900	106,900	95,310	35,560	45,600	46,350
Calendar year 1960:				Max 1,920	Min 126	Mean 1,227	Acra-foot 890,600					
Water year 1960-61:				Max 1,760	Min 126	Mean 886	Acra-foot 641,300					

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

587

11-2470. San Joaquin River below Kerckhoff powerhouse, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1			-	-	50	50	42	42	40	49	45	44	49	47	51	50	54	54	63	61	68	68	70	68
2			-	-	50	49	42	42	40	40	45	44	48	47	52	51	54	53	63	61	70	68	70	68
3			-	-	49	48	41	41	40	39	45	45	48	47	52	51	54	53	63	62	68	68	70	68
4			-	-	50	49	42	41	40	39	45	45	49	47	52	51	55	53	65	63	68	68	69	68
5			-	-	49	49	41	41	41	40	45	44	49	48	52	51	55	53	64	63	68	68	70	68
6			-	-	50	48	41	41	41	40	45	44	49	48	52	51	55	54	64	63	71	68	70	69
7			-	-	48	47	41	40	42	41	45	44	49	48	52	51	54	53	63	63	68	68	69	68
8			-	-	47	46	40	39	42	41	45	44	49	48	52	51	55	53	64	63	68	68	68	67
9			-	-	46	46	40	40	43	42	46	44	49	49	52	51	54	53	65	64	68	68	69	67
10			-	-	46	46	39	39	44	43	47	46	49	49	52	51	55	54	65	64	68	68	69	67
11			56	55	46	46	39	39	43	43	47	45	50	49	52	51	55	54	66	65	68	68	68	67
12			57	56	46	45	39	39	43	41	48	46	50	49	52	51	55	54	67	65	68	68	69	68
13			56	56	45	44	39	39	44	43	48	47	49	49	52	51	56	55	67	66	71	68	68	67
14			56	55	45	44	39	39	45	44	48	47	49	49	52	51	57	56	69	66	69	68	68	67
15			54	53	45	45	39	39	45	44	48	47	50	50	53	52	58	56	68	67	68	68	67	67
16			54	53	45	44	39	38	46	45	48	47	50	50	53	52	59	57	68	67	68	68	67	67
17			54	53	45	44	38	38	46	44	47	46	51	50	54	52	59	58	70	68	68	68	67	66
18			54	53	46	44	38	38	45	44	47	46	51	50	54	52	59	58	69	68	68	68	67	66
19			53	52	45	44	38	38	44	43	47	46	51	50	53	53	59	58	69	68	68	68	67	66
20			52	52	44	44	38	38	44	44	48	46	50	50	53	53	59	58	68	67	69	68	67	66
21			52	51	44	44	38	38	44	44	48	47	50	50	53	53	60	59	68	67	71	68	66	66
22			52	-	44	44	38	38	45	44	48	47	51	50	54	53	60	59	70	67	73	69	66	66
23			50	-	44	43	38	38	44	44	48	47	50	50	54	53	60	60	70	67	70	70	66	66
24			50	-	44	43	39	38	44	44	47	47	50	50	54	53	61	60	69	67	69	69	66	66
25			52	-	45	44	39	39	44	44	48	47	50	49	54	53	61	60	69	68	69	69	66	65
26			50	48	44	44	43	39	45	44	48	47	51	51	55	54	61	60	68	67	70	69	66	65
27			50	49	44	44	41	40	45	45	48	47	51	51	55	54	62	60	68	68	69	68	66	66
28			51	51	44	43	41	39	45	44	48	46	51	51	55	54	62	60	69	68	68	68	66	66
29			51	51	43	42	40	40	-	-	47	46	51	51	55	54	61	60	71	68	68	68	67	66
30			52	50	42	42	40	39	----	----	48	47	51	50	55	54	61	60	70	68	68	68	67	66
31			----	----	42	42	40	39	----	----	48	47	----	----	55	54	----	----	69	68	70	68	----	----
Avg			-	-	46	45	40	39	43	43	47	45	50	49	53	52	58	56	67	66	69	68	68	67

SAN JOAQUIN RIVER BASIN

11-2495. Friant-Madera Canal at Friant, Calif.

Location.--Lat 37°00'10", long 119°42'20", in NW 1/4 sec. 5, T.11 S., R.21 E., at Friant Dam, 0.9 mile northeast of Friant.Records available.--October 1943 to September 1961. Prior to October 1954, published as Madera Canal near Friant.Gage.--Discharge computed on basis of valve openings in dam and head on valves. Prior to Oct. 1, 1948, water-stage recorder at several sites at various datums. Oct. 1, 1948, to Sept. 30, 1949, water-stage recorder at site 8.8 miles downstream.Average discharge.--18 years, 218 cfs (157,800 acre-ft per year).Extremes.--1943-61: Maximum daily discharge, 1,067 cfs July 13, 14, 1961; no flow for several months in each year.Remarks.--Records good. Canal diverts from Millerton Lake at right end of Friant Dam for irrigation between San Joaquin and Fresno Rivers.Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						0	253		0	1.047	381	
2						0	254		0	1.041	366	
3						0	255		0	1.009	362	
4						0	80		0	768	*346	
5						0	0		0	711	335	
6						0	0		0	801	333	
7						0	0		0	841	328	
8						0	0		0	927	325	
9						108	0		0	997	324	
10						202	0		0	1.011	*322	
11						231	0		0	1.019	320	
12						254	0		0	1.035	308	
13						*253	0		0	1.067	298	
14						239	0		0	1.067	295	
15						211	0		0	1.058	292	
16						228	0		87	1.058	310	
17						243	0		200	1.061	336	
18						242	0		199	1.059	358	
19						242	0		397	1.061	355	
20						242	0		456	1.062	327	
21						268	0		632	1.054	154	
22						283	0		652	1.061	140	
23						302	0		647	1.059	113	
24						325	0		703	1.049	*101	
25						307	0		738	1.040	40	
26						285	0		*736	*1.030	0	
27						264	0		733	1.019	0	
28						252	0		731	1.009	0	
29						252	0		728	583	0	
30						252	0		*950	407	0	
31						252	0			403	0	
Total	0	0	0	0	0	5,737	842	0	8,589	29,414	7,169	0
Mean	0	0	0	0	0	185	28.1	0	286	949	231	0
Max.	0	0	0	0	0	325	255	0	950	1,067	381	0
Min.	0	0	0	0	0	0	0	0	0	403	0	0
Ac-ft	0	0	0	0	0	11,380	1,670	0	17,040	58,340	14,220	0
Calendar year 1960 :				Max	1,034	Min	0	Mean	198	Acre-feet	143,700	
Water year 1960-61 :				Max	1,067	Min	0	Mean	142	Acre-feet	102,600	

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

589

11-2500. Friant-Kern Canal at Friant, Calif.

Location.--Lat 36°59'53", long 119°42'11", in SE 1/4 sec.5, T.11 S., R.21 E., at Friant Dam, 0.9 mile northeast of Friant.

Records available.--March 1949 to September 1961.

Gage.--Discharge computed on basis of valve openings in dam and head on valves. Prior to July 8, 1949, staff gages at various sites and datums. July 8, 1949, to Sept. 30, 1949, water-stage recorder at site 0.25 mile downstream.

Average discharge.--12 years, 997 cfs (721,800 acre-feet per year).

Extremes.--1949-61: Maximum daily discharge, 4,288 cfs July 30, 1958; no flow for several months in each year.

Remarks.--Records good. Canal diverts from Millerton Lake at left end of Friant Dam for irrigation in upper San Joaquin Valley.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	451	283	0		0	1,630	404	457	502	1,394	2,008	853
2	467	283	0		555	1,205	429	502	472	1,421	2,007	729
3	498	293	0		1,627	1,176	442	475	451	1,309	1,735	735
4	514	253	0		1,655	1,111	466	440	521	1,534	*1,066	749
5	506	210	0		347	1,182	504	403	559	1,563	987	*758
6	442	92	0		286	1,231	510	381	573	1,443	1,049	768
7	349	0	0		*351	1,204	475	383	594	783	1,105	709
8	301	0	0		458	1,225	479	360	603	763	1,126	605
9	301	0	0		461	1,223	526	341	605	834	1,170	555
10	301	0	0		426	778	540	343	606	940	1,142	579
11	316	0	0		540	792	544	345	922	1,040	1,024	638
12	329	0	0		575	924	555	321	1,169	1,141	988	682
13	313	0	0		607	1,021	543	285	*1,266	1,174	1,207	696
14	274	0	0		715	1,061	497	306	1,323	1,112	1,666	681
15	252	0	0		769	973	470	327	1,405	1,114	1,730	625
16	288	0	0		827	783	473	339	1,477	1,353	1,728	594
17	336	0	0		848	638	*477	364	1,606	1,662	1,571	627
18	373	0	0		847	618	480	*377	1,944	1,766	1,009	657
19	392	0	0		845	650	*483	355	2,225	1,818	929	685
20	*393	0	62		475	*666	467	340	2,226	1,698	1,025	*684
21	370	0	101		616	680	425	341	2,230	1,241	1,229	630
22	333	0	101		650	666	403	343	2,204	1,177	1,269	562
23	362	0	84		757	593	382	374	*2,030	1,263	1,244	502
24	398	0	15		891	547	354	400	1,534	1,297	1,193	553
25	414	0	0		937	525	341	378	1,499	1,322	1,111	610
26	413	0	0		1,022	503	342	359	1,481	1,366	1,097	636
27	379	0	0		1,094	489	344	360	1,464	*1,368	1,320	606
28	332	0	0		1,136	457	322	404	1,457	1,276	*1,609	563
29	309	0	0		-	441	303	440	1,426	1,196	1,579	501
30	331	0	0		-	428	366	472	1,330	1,206	1,526	440
31	*314	-	0		-	388	-	500	-	1,896	1,375	-
Total	11,351	1,414	363	0	20,317	25,808	13,346	11,815	37,704	40,470	40,824	19,212
Mean	366	47.1	11.7	0	726	833	445	381	1,257	1,305	1,317	640
Max.	514	293	101	0	1,655	1,630	555	502	2,230	1,896	2,008	853
Min.	252	0	0	0	0	388	303	285	451	763	929	440
Ac-ft	22,510	2,800	720	0	40,300	51,190	26,470	23,430	74,780	80,270	80,970	38,110
Calendar year 1960 :				Max 2,640	Min 0		Mean 743		Acre-feet 539,300			
Water year 1960-61 :				Max 2,230	Min 0		Mean 610		Acre-feet 441,600			

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2501. Millerton Lake at Friant, Calif.

Location.--Lat 37°00'00", long 119°42'10", in SW $\frac{1}{4}$ sec.5, T.11 S., R.21 E., near center of Friant Dam on San Joaquin River, immediately upstream from Cottonwood Creek, and 0.9 mile northeast of Friant.

Drainage area.--1,633 sq mi.

Records available.--October 1941 to September 1961. Month-end contents only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to May 29, 1944, staff gages on left bank at same datum.

Extremes.--Maximum contents during year, 367,800 acre-ft June 14 (elevation, 543.74 ft); minimum, 152,000 acre-ft Sept. 10 (elevation, 475.95 ft).

1951-61: Maximum contents, 525,400 June 23, 1958 (elevation, 578.99 ft); minimum since initial season of normal operation, 42,700 acre-ft Nov. 8, 1949 (elevation, 406.6 ft).

Remarks.--Reservoir is formed by gravity-type concrete dam with spillway near center, completed in December 1942. Control valves installed in February 1944, and spillway gates installed in November 1947. Usable capacity, 503,200 acre-ft between elevations 375.4 ft (invert of river outlet) and 578.0 ft (top of drum-type spillway gates) above mean sea level. Not available for release, 17,400 acre-ft. Millerton Lake is one of the storage units in Central Valley project. Records including extremes, show total contents at 12 p.m.

Cooperation.--Records of contents furnished by Bureau of Reclamation.

Capacity table (elevation, in feet, and contents, in acre-ft)

470	138,400	520	279,400
480	161,700	530	314,900
490	187,500	540	353,000
500	215,600	550	393,400
510	246,300		

Contents, in thousands of acre-feet, at 12 p.m. water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	182.8	184.0	205.9	235.1	251.8	238.9	219.4	279.6	347.8	329.9	215.6	158.7
2	181.8	183.9	209.3	235.7	252.2	237.4	220.7	281.5	349.9	325.9	211.6	157.4
3	181.6	184.4	211.9	236.5	249.8	236.1	222.4	283.5	351.9	322.4	208.6	156.1
4	181.6	184.2	213.2	237.0	247.4	234.9	224.3	285.5	353.8	319.4	207.4	155.3
5	181.9	184.1	214.2	237.5	247.5	233.7	226.2	287.7	355.5	316.3	206.3	155.3
6	182.9	184.7	215.2	237.7	247.8	231.8	228.2	290.0	357.3	312.6	203.6	155.4
7	183.7	185.6	216.3	237.8	247.8	229.9	230.3	292.2	359.3	310.4	202.6	154.9
8	183.5	186.0	217.5	238.1	247.8	228.2	232.4	294.3	361.2	307.5	201.8	153.9
9	183.3	186.4	218.0	238.6	247.9	226.6	234.4	296.6	363.0	304.5	200.5	153.0
10	183.5	186.9	218.0	239.2	248.1	225.5	236.3	298.9	364.9	301.0	198.8	152.0
11	183.6	187.4	217.7	239.6	248.6	224.2	238.3	301.1	366.1	297.4	197.3	152.1
12	183.3	189.2	217.7	240.1	249.7	222.4	240.2	303.4	366.9	293.6	195.6	152.3
13	183.3	190.5	218.4	240.7	250.4	220.9	242.2	305.7	367.5	289.9	193.4	152.3
14	183.8	191.6	219.8	241.2	250.4	219.3	244.1	308.1	367.8	285.6	190.7	152.6
15	183.9	192.5	221.3	241.7	250.1	218.6	246.3	310.4	367.5	281.9	187.7	152.8
16	183.6	193.3	222.6	242.2	249.5	218.2	248.3	312.6	367.1	277.5	184.8	153.0
17	184.0	194.4	223.1	242.2	248.9	217.8	250.3	314.9	366.3	272.4	182.4	153.2
18	184.0	195.3	223.5	242.5	248.5	217.3	252.3	317.0	364.9	268.2	181.1	153.7
19	184.3	196.0	224.4	242.9	247.6	216.8	254.4	319.4	362.6	264.0	178.9	154.4
20	184.9	196.6	225.6	242.9	248.0	216.1	256.4	321.6	360.1	260.4	176.8	154.9
21	185.0	197.5	226.7	243.3	248.5	215.9	258.5	324.0	357.2	256.5	175.5	155.6
22	184.9	198.3	227.1	243.6	248.2	215.6	260.4	326.3	354.5	252.1	174.5	156.1
23	184.4	199.1	227.9	244.0	247.5	215.7	262.6	328.5	351.9	247.7	172.9	156.8
24	184.6	199.8	228.7	244.7	246.8	217.0	264.7	330.7	350.2	244.1	171.7	157.3
25	184.8	200.5	229.6	245.1	245.4	217.2	266.6	332.9	348.1	240.7	170.9	158.2
26	185.2	201.7	230.0	246.8	244.2	217.2	268.5	335.1	345.9	236.5	168.8	158.2
27	185.3	202.6	231.1	248.3	242.9	217.6	270.5	337.4	343.4	233.1	166.8	158.2
28	185.1	203.5	231.9	249.1	241.3	217.9	272.9	339.6	340.5	229.4	165.1	158.8
29	185.1	204.2	232.8	249.4	-	218.1	275.3	341.7	337.6	225.8	163.6	159.2
30	184.3	204.9	233.7	249.9	-	218.3	277.5	343.7	334.0	222.8	162.1	159.2
31	183.8	-	234.5	251.0	-	218.7	-	345.7	-	219.5	159.7	-
(†)	488.64	496.30	506.24	511.48	508.43	501.04	519.47	538.14	535.09	501.29	479.19	478.96
(‡)	+1.1	+21.1	+29.6	+16.5	-9.7	-22.6	+58.8	+68.2	-11.7	-114.5	-59.8	-0.5
(††)	1,260	420	230	210	530	920	1,720	2,670	4,190	4,270	2,810	1,790

Calendar year 1960..... ‡ +83.4

Water year 1960-61..... ‡ -23.5

† Elevation, in feet, at end of month.

‡ Change in contents, in thousands of acre-feet.

†† Evaporation, in acre-ft, furnished by Bureau of Reclamation.

11-2510. San Joaquin River below Friant, Calif.

Location.--Lat 36°59'04", long 119°43'24", in SW $\frac{1}{4}$ sec. 7, T.11 S., R.21 E., on left bank 0.5 mile west of Friant, 1.5 miles downstream from Cottonwood Creek, 2 miles downstream from Friant Dam, and at mile 268.1.

Drainage area.--1,675 sq mi.

Records available.--October 1907 to September 1961. Published as "near Pollasky" October 1907 to December 1908 and as "near Friant" January 1909 to September 1938. Monthly discharge only for October 1907 to November 1908, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 294.00 ft above mean sea level (levels by Bureau of Reclamation). Oct. 18, 1907, to Nov. 9, 1913, staff gage at site 4.5 miles upstream at different datum. Nov. 10, 1913, to Sept. 30, 1938, water-stage recorder at site 2.5 miles upstream at different datum.

Average discharge.--54 years, 2,302 cfs (1,667,000 acre-ft per year), including diversions to Friant-Madera Canal, 1944-61, Friant-Kern Canal, 1949-61, and adjusted for change in contents in and evaporation from Millerton Lake 1941-61.

Extremes.--Maximum discharge during year, 973 cfs Dec. 10 (gage height, 4.19 ft); minimum, 23 cfs Nov. 16, 17.

1907-41 (prior to regulation by Millerton Lake): Maximum discharge, 77,200 cfs Dec. 11, 1937 (gage height, 23.8 ft, site and datum then in use); minimum, 38 cfs (regulated) July 29, 1940.

1941-61: Maximum discharge, 11,200 cfs Jan. 23, 1943 (partially regulated, prior to installation of outlet gate), and 8,000 cfs Apr. 14, May 13, 1952 (fully regulated); minimum, 5.5 cfs Oct. 20, 1941.

Remarks.--Records good. Flow regulated by Millerton Lake beginning in 1944 (see p. 590) and by other reservoirs described in Remarks for San Joaquin River below Kerckhoff powerhouse. Uncontrolled pondage in Millerton Lake began in September 1941. Diversion for irrigation through Friant-Madera and Friant-Kern Canals (see p. 588, 589).

Cooperation.--Thirteen discharge measurements furnished by Bureau of Reclamation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
1.5	19	3.0	300	1.5	29	2.5	164
1.7	34	3.5	520	1.7	44	3.0	310
2.1	83	4.0	840	2.0	75	3.5	525
2.5	159						

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	125	188	62	50	104	130	*149	144	157	171	*149
2	144	125	199	62	51	104	130	164	124	157	171	146
3	144	137	199	62	50	104	*126	164	153	171	171	146
4	144	125	209	104	49	104	162	169	166	178	171	144
5	144	115	*206	65	49	106	224	176	155	178	171	144
6	144	86	*205	337	49	104	142	176	155	178	171	140
7	133	64	206	388	50	106	146	176	117	183	171	136
8	125	*64	206	188	50	104	146	174	83	186	174	136
9	125	69	534	188	50	106	144	174	83	186	171	130
10	125	89	693	191	50	106	146	174	84	183	166	126
11	125	91	548	191	49	115	149	174	85	181	166	126
12	125	93	548	188	49	122	153	176	93	178	166	124
13	125	91	329	188	49	122	153	176	140	178	164	124
14	125	76	94	188	49	122	153	174	164	178	162	124
15	125	49	94	188	49	124	155	176	363	178	157	126
16	125	24	94	*204	*49	124	153	176	342	176	155	126
17	125	24	94	242	53	124	155	169	178	176	155	126
18	*125	26	94	242	63	122	155	164	178	176	155	120
19	125	29	96	242	63	122	*155	160	181	176	155	*113
20	125	32	96	206	63	122	160	153	199	181	164	108
21	125	38	96	140	63	122	162	155	191	210	169	98
22	125	31	94	140	64	122	164	*153	178	215	169	96
23	125	32	94	125	82	*124	164	146	178	199	169	84
24	125	32	79	84	80	126	153	142	178	188	169	84
25	125	32	59	84	90	126	142	142	171	183	169	83
26	125	38	59	60	106	126	142	142	171	181	166	87
27	*125	37	59	32	104	115	142	142	*169	183	166	94
28	125	52	59	38	*102	101	142	142	169	183	160	94
29	125	103	59	51	—	101	142	142	169	181	*157	94
30	125	*135	*59	50	—	102	142	142	*166	176	155	*106
31	*125	—	59	*51	—	118	—	*144	—	*174	155	—
Total	3,997	2,064	5,709	4,581	1,725	3,550	4,532	4,986	4,927	5,608	5,111	3,534
Mean	129	68.8	184	148	61.6	115	151	161	164	181	165	118
Max.	144	137	693	388	106	126	224	176	363	215	174	149
Min.	125	24	59	32	49	101	126	142	83	157	155	83
Ac-ft	7,930	4,090	11,320	9,090	3,420	7,040	8,990	9,890	9,770	11,120	10,140	7,010
Mean†	533	477	681	420	622	779	1,641	1,695	1,581	642	786	780
Ac-ft†	32,800	28,410	41,870	25,800	34,550	47,930	97,650	104,200	94,080	39,500	48,340	46,410
Calendar year 1960: Max	693	Min	20	Mean	141	Mean†	1,225	Ac-ft	102,600	Ac-ft†	889,000	
Water year 1960-61: Max	693	Min	24	Mean	138	Mean†	886	Ac-ft	99,810	Ac-ft†	641,500	

* Discharge measurement made on this day.

† Adjusted for change in storage, diversions and evaporation.

SAN JOAQUIN RIVER BASIN

11-2516. Little Dry Creek at mouth, near Friant, Calif.

Location--Lat 36°56'05", long 119°43'45", in NW¼ sec. 31, T.11 S., R.21 E., on left bank 150 ft upstream from highway bridge, 1.2 miles upstream from mouth, and 3.8 miles south of Friant.

Drainage area--77.7 sq mi (includes 6.1 sq mi due to Big Dry to Little Dry Diversion Channel).

Records available--October 1956 to September 1961 (discontinued).

Gage--Water-stage recorder and concrete control. Altitude of gage is 300 ft (from topographic map).

Average discharge--5 years, 10.2 cfs (7,380 acre-ft per year).

Extremes--No flow during year.

1956-61: Maximum discharge, 5,000 cfs Mar. 22, 1958 (gage height, 4.3 ft, from outside flood mark), from rating curve extended above 2,200 cfs; no flow for several months in each year.

Remarks--No flow since Feb. 14, 1960. Observations of no flow generally made once a month. Diversions up to 700 cfs from Big Dry Creek to Little Dry Creek above station occur at times during floods. No diversions during 1961 water year. Figures for calendar year 1960 are as follows: maximum daily discharge, 19 cfs; minimum, zero; mean, 0.08 cfs; runoff, 57 acre-ft.

11-2530 (corrected). San Joaquin River near Biola, Calif.

Location--Lat 36°49'22", long 120°05'14", in SE 1/4 sec. 2, T.13 S., R.17 E., on right bank 1.9 miles downstream from Skaggs Bridge, 4.2 miles northwest of Biola, and at mile 236.3.

Drainage area--1,805 sq mi.

Records available--October 1952 to September 1961 (discontinued).

Gage--Water-stage recorder. Datum of gage is 194.82 ft above mean sea level (levels by California Department of Water Resources).

Average discharge--9 years, 514 cfs (372,100 acre-ft per year).

Extremes--Maximum discharge during year, 770 cfs Dec. 11 (gage height, 5.12 ft); minimum, 18 cfs June 14.

1952-61: Maximum discharge, 8,240 cfs Apr. 6, 1958 (gage height, 11.72 ft); minimum, 2.2 cfs Jan. 10, 1960.

Remarks--Records good. Flow regulated by Millerton Lake (see p. 590) and by other reservoirs described in Remarks for San Joaquin River below Kerckhoff powerhouse. Diversions for irrigation of about 3,600 acres between stations below Friant and near Biola.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.3	17	4.0	318
2.6	41	4.5	495
3.0	89	5.0	710
3.5	182		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	88	45	49	53	88	50	*86	86	66	63	*60
2	83	86	72	48	54	89	55	85	91	65	56	60
3	88	89	102	48	54	88	*66	88	85	62	54	66
4	91	92	124	47	48	86	66	89	74	62	55	62
5	91	105	136	46	51	86	63	89	85	66	56	62
6	95	110	150	63	50	86	83	97	94	68	63	61
7	94	105	156	100	50	86	102	110	78	61	67	59
8	95	86	160	344	49	83	81	117	70	67	68	56
9	92	68	164	243	47	81	82	115	58	74	59	55
10	89	60	205	173	48	79	83	107	41	83	58	59
11	88	59	692	160	49	76	83	105	32	76	58	61
12	88	66	656	158	48	76	79	112	26	62	59	60
13	88	72	634	158	48	81	82	112	22	56	60	53
14	89	76	598	158	47	83	85	112	20	55	60	48
15	89	74	271	160	49	88	83	115	25	57	60	51
16	89	67	144	160	49	91	88	110	46	58	56	53
17	88	58	112	160	49	89	91	100	153	66	50	56
18	86	48	97	187	47	88	88	95	144	63	48	60
19	85	41	92	209	48	83	79	95	83	50	43	62
20	86	34	86	214	54	82	81	105	72	47	44	62
21	88	31	83	214	55	81	85	103	70	48	50	56
22	91	30	82	162	58	81	94	99	78	55	58	51
23	89	29	78	135	61	79	100	99	78	76	61	45
24	92	27	76	126	63	76	110	92	70	86	56	45
25	89	26	76	112	66	75	112	85	76	79	55	41
26	88	27	72	108	68	81	103	81	79	71	56	36
27	85	29	61	103	75	82	95	78	75	61	61	31
28	86	30	56	81	*86	78	91	79	68	62	70	29
29	91	29	52	62	-	70	86	83	65	65	72	32
30	92	*27	*50	53	-----	61	83	79	62	62	68	*34
31	*91	-----	50	*53	-----	55	-----	*82	-----	*63	62	-----
Total	2,755	1,769	5,432	4,094	1,524	2,508	2,529	3,004	2,106	1,992	1,806	1,566
Mean	88.9	59.0	175	132	54.4	809	84.3	96.9	70.2	64.3	58.3	52.2
Max.	95	110	692	344	86	91	112	117	153	86	72	66
Min.	79	26	45	46	47	55	50	78	20	47	43	29
Ac-ft	5,460	3,510	10,770	8,120	3,020	4,970	5,020	5,960	4,180	3,950	3,580	3,110
Calendar year 1960:			Max 692	Min 2.8	Mean 94.9	Acres-feet 68,900						
Water year 1960-61:			Max 692	Min 20	Mean 85.2	Acres-feet 61,650						

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2555. Panoche Creek below Silver Creek, near Panoche, Calif.

Location.--Lat 36°37'08", long 120°40'22", in SW 1/4 sec. 16, T.15 S., R.12 E., on right bank 1.1 miles downstream from Silver Creek, 9 miles east of Panoche, and 18 miles southwest of Mendota.

Drainage area.--299 sq mi.

Records available.--October 1949 to September 1953, October 1958 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 558.26 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 2.09 cfs (1,510 acre-ft per year).

Extremes.--Maximum discharge during year, 1.0 cfs Jan. 26 (gage height, 1.44 ft); no flow for several months.

1949-53, 1958-61. Maximum discharge, 3,160 cfs Jan. 12, 1952 (gage height, 7.05 ft from floodmarks), from rating curve extended above 870 cfs on basis of slope-area measurement at gage height 6.25 ft; no flow for several months in each year.

The flood of Apr. 2, 1958 reached a stage of 7.01 ft (discharge, 5,090 cfs, by slope-area measurement of peak flow).

Remarks.--Records fair except those for period of no gage-height record, which are poor.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0	0						
2				0	.1	0						
3				0	.1	0						
4				0	0	0						
5				0	0	0						
6				0	0	0						
7				0	0	0						
8				0	0	0						
9				0	0	0						
10				0	0	0						
11				0	0	0		(*)				
12				0	0	0			(*)			
13				0	0	0						
14		(*)		0	0	0						
15				0	0	0						
16				*0	0	.1						
17				0	0	.1					(*)	
18				0	0	.1						
19				0	0	.1						(*)
20			(*)	0	0	0						
21				0	0	*0	(*)					
22				0	0	0						
23				0	0	.1						
24				0	0	.1						
25				0	0	.1						
26	(*)			.2	0	.1						
27				.4	0	.1						
28				.1	0	.1						
29				0	-	.1						
30				0		0						
31				*0		0						
Total	0	0	0	0.7	0.2	1.1	0	0	0	0	0	0
Mean	0	0	0	0.02	0.007	0.04	0	0	0	0	0	0
Max.	0	0	0	0.4	0.1	0.1	0	0	0	0	0	0
Min.	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	1.4	0.4	2.2	0	0	0	0	0	0

Calendar year 1960 :

Max 0.2

Min 0

Mean 0.03

Acre-feet 23

Water year 1960-61 :

Max 0.4

Min 0

Mean 0.005

Acre-feet 4.0

Peak discharge (base, 50 cfs).--No peak above base.

* Observation of no flow made on this day.

Note.--No gage-height record Feb. 15 to Mar. 20.

SAN JOAQUIN RIVER BASIN

595

11-2555.5. Little Panoche Creek tributary No. 1 near Panoche, Calif.

Location.--Lat 36°43'05", long 120°51'50", in SW¹/₄SE¹/₄ sec.10, T.14 S., R.10 E., on right bank 1.0 mile north of Mercy Hot Springs and 8.7 miles north of Panoche.

Drainage area.--0.33 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,080 ft (from topographic map).

Extremes.--Maximum discharge during year, 4.9 cfs Nov. 6 (gage height, 5.65 ft, crest-stage gage), on basis of indirect measurement of peak flow through culvert; no flow for most of year.
1958-61: Maximum discharge, that of Nov. 6, 1961; no flow for most of each year.

Remarks.--Records fair. No regulation or diversions above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Nov. 5.....	0.3	Nov. 13.....	0.1
6.....	.2	Jan. 26.....	.1

Monthly precipitation, in inches, water year October 1960 to September 1961

November	1.3	March	0.6
January	1.0	April	.4
February	.3	May	.2

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
November 1960.....	0.6	0.3	0	0.02	1.2
January 1961.....	.1	.1	0	.003	.2
Calendar year 1960.....	1.0	.3	0	.003	2.0
Water year 1960-61.....	.7	.3	0	.002	1.4

Note.--Flow occurred only on days listed above. Observations of no flow generally made once a month. Total rainfall for water year 1960-61, 3.8 inches.

SAN JOAQUIN RIVER BASIN

11-2571. Miami Creek near Oakhurst, Calif.

Location.--Lat 37°23'37", long 119°39'12", in NE¼SE¼ sec.22, T.6 S., R.21 E., on left bank 200 ft downstream from county road and 4.6 miles north of Oakhurst.

Drainage area.--10.6 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

Extremes.--Maximum discharge during year, 74 cfs Dec. 1 (gage height, 4.21 ft); no flow for many days.

Remarks.--No known diversion upstream.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.7	1.7	1.6	4.0	2.9	5.0	2.4	2.0	0.1		
2	.3	.6	1.8	1.6	4.3	2.8	4.7	2.2	2.0	.2		
3	*.3	*.9	5.9	*1.5	4.4	3.1	4.1	*2.2	1.8	.2		
4	.3	1.0	3.9	1.6	3.7	3.1	3.7	2.1	1.2	.3		
5	.3	1.1	3.2	1.6	3.3	3.2	3.4	2.0	.7	.3		
6	1.3	2.9	2.9	1.6	3.3	3.9	3.2	2.7	.5	.2		
7	1.0	3.2	2.4	1.5	3.1	3.5	3.1	3.8	.4	.2		
8	.8	1.9	2.5	1.5	2.9	3.7	2.9	3.3	.5	.1		
9	.8	1.3	*2.3	1.6	3.0	4.2	2.9	2.5	.9	.1		
10	.8	1.1	2.3	1.7	3.2	4.1	2.8	2.4	1.3	.8		
11	.8	1.1	2.2	1.7	7.3	4.4	2.7	2.4	1.4	.2		
12	.8	5.2	2.1	1.6	7.0	4.0	2.8	1.9	.9	.2		
13	.8	6.0	1.9	1.7	4.5	3.7	3.2	1.9	.8	.1		
14	.8	5.0	1.9	1.7	*4.2	3.5	3.2	1.8	.7	*0		
15	.8	3.2	1.8	1.8	4.1	*4.8	2.7	1.9	.6	0		
16	.8	2.4	2.0	1.7	4.1	4.6	2.6	1.8	.6	0		
17	.8	2.1	2.1	1.8	3.8	5.4	2.4	1.7	.6	0		
18	.8	2.1	2.1	1.7	3.5	4.9	*2.3	1.7	.5	0		
19	.7	2.1	1.9	1.7	3.4	4.6	2.2	1.9	.5	0		
20	.7	2.0	1.9	1.7	3.3	4.9	2.3	2.0	.5	0		
21	.7	1.8	2.0	1.7	3.2	5.1	2.2	1.8	.4	.1		
22	.7	1.7	2.0	1.8	3.2	4.6	3.2	1.6	.4	0		
23	.6	1.7	2.0	1.8	3.0	5.6	3.4	1.4	.4	.1		
24	.7	1.7	2.0	1.7	2.9	6.1	3.2	1.5	.4	.2		
25	.6	1.6	1.8	1.9	2.9	6.5	3.3	1.5	.3	.1		
26	.6	2.4	1.8	8.0	2.8	5.2	3.8	1.5	.4	0		
27	.6	2.5	1.8	5.5	2.8	5.9	3.3	1.4	.4	0		
28	.7	*2.0	1.9	3.9	2.8	5.9	2.8	1.4	.3	0		
29	.6	1.9	1.8	3.5	-	*5.2	2.7	1.5	*7.0	0		
30	.6	1.9	1.8	*3.8	-----	5.8	2.4	1.5	.1	0		
31	.6	-----	1.6	3.9	-----	5.6	-----	*1.7	-----	0		
Total	21.0	65.1	100.8	70.4	104.0	140.8	92.5	61.4	23.2	3.5	0	0
Mean	0.68	2.17	3.25	2.27	3.71	4.54	3.08	1.98	0.74	0.11	0	0
Max.	1.3	6.0	1.8	8.0	7.3	6.5	5.0	3.8	2.0	0.3	0	0
Min.	0.3	0.6	1.6	1.5	2.8	2.8	2.2	1.4	0.1	0	0	0
Ac-ft	42	129	200	140	206	279	183	122	44	6.9	0	0
Calendar year 1960:			Max -	Min -	Mean -			Acre-feet -				
Water year 1960-61			Max 18	Min 0	Mean 1.87			Acre-feet 1,350				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

597

11-2575. Fresno River near Knowles, Calif.

Location.--Lat 37°14'15", long 119°46'25", in NW¼ sec.15, T.8 S., R.20 E., on left bank at Fresno Crossing, 0.1 mile downstream from Bean Gulch and 6 miles northeast of Knowles.

Drainage area.--132 sq mi.

Records available.--September 1911 to December 1913, November 1915 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,086.4 ft above mean sea level (river-profile survey). Prior to June 13, 1930, staff gage 10 ft upstream and June 13, 1930, to Jan. 13, 1931, water-stage recorder at site 40 ft upstream at datum about 0.34 ft lower.

Average discharge.--46 years (1911-12, 1916-61), 75.8 cfs (54,880 acre-ft per year); median of yearly mean discharges, 63 cfs (45,600 acre-ft per year).

Extremes.--Maximum discharge during year, 352 cfs Dec. 2 (gage height, 2.31 ft); no flow July 28 to Sept. 30. 1911-13, 1915-61: Maximum discharge, 13,300 cfs Dec. 23, 1955 (gage height, 11.52 ft), from rating curve extended above 1,500 cfs on basis of slope-area measurement of peak flow; no flow at times in some years.

Remarks.--Records good except those for period of no gage-height record, which are fair. Diversions for irrigation of about 160 acres above station. Diversions into Fresno River basin above station up to 50 cfs at times since 1897 from San Joaquin River basin and up to 50 cfs at times since about 1888 from Merced River basin, for irrigation downstream from station.

Rating table (gage height, in feet, and discharge in cubic feet per second)

0.6	0	1.0	3.3	1.4	34
0.7	.1	1.1	6.4	1.6	82
0.8	.5	1.2	11	1.8	145
0.9	1.6	1.3	20	2.0	220

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	3.9	26	14	27	28	47	45	34	2.0		
2	.5	3.6	200	12	28	28	49	45	34	2.0		
3	.5	4.5	74	11	*34	29	52	43	33	2.2		
4	*.8	8.0	45	14	28	29	56	41	28	2.3		
5	1.2	13	33	13	24	28	59	41	25	2.9		
6	3.6	14	27	13	22	27	59	41	22	2.7		
7	7.2	18	21	15	20	28	56	52	21	2.2		
8	8.0	15	20	15	19	28	54	52	20	2.0		
9	4.5	*11	20	14	20	*28	52	52	19	1.4	(*)	
10	3.6	8.5	19	14	20	30	49	47	18	1.4		
11	4.8	9.0	19	15	21	28	*47	45	18	1.1		
12	4.2	15	19	15	62	28	49	*41	16	*1.0		
13	3.9	52	18	14	70	27	54	38	16	2.2		
14	3.9	56	18	15	60	27	52	38	14	2.3		
15	3.9	27	17	15	45	41	49	38	12	1.9		
16	3.1	19	17	14	49	49	49	38	11	1.9		
17	2.9	16	17	14	48	49	52	36	9.5	1.2		
18	4.2	16	17	14	42	47	52	36	8.5	1.3		
19	3.6	16	17	14	35	41	47	38	*8.5	1.0	(*)	
20	3.1	15	17	14	33	36	43	45	8.5	.8		
21	3.1	16	17	13	37	41	38	41	7.6	.5		
22	3.1	14	17	13	35	38	49	38	6.0	.5		
23	3.1	13	17	13	32	43	52	36	5.4	.4		
24	3.1	13	17	13	31	56	49	33	4.8	.3		
25	3.1	13	17	14	28	66	43	31	3.6	.2		
26	4.2	25	17	*41	26	59	43	30	3.3	.2		
27	3.6	33	17	64	27	52	47	30	3.1	.1		
28	3.6	*20	16	34	28	54	47	28	2.5	0		
29	3.9	19	13	27	-	49	47	27	2.3	0		
30	4.2	17	*13	27	-	47	45	28	2.2	0		
31	4.2	-	15	27	-	47	-	28	-	0		
Total	107.1	523.5	837	565	951	1208	1487	1202	416.8	38.0	0	0
Mean	3.45	17.4	27.0	18.2	34.0	39.0	49.6	38.8	13.9	1.23	0	0
Max.	8.0	56	200	64	70	66	59	52	34	2.9	0	0
Min.	.4	3.6	13	11	19	27	38	27	2.2	0	0	0
Ac-ft	212	1,040	1,660	1,120	1,890	2,400	2,950	2,380	827	75	0	0

Calendar year 1960: Max 390 Min 0 Mean 34.7 Acre-feet 25,210
 Water year 1960-61: Max 200 Min 0 Mean 20.1 Acre-feet 14,550

Peak discharge (base, 590 cfs)--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Feb. 7 to Mar. 8.

SAN JOAQUIN RIVER BASIN

11-2580. Fresno River near Daulton, Calif.

Location--Lat 37°05'50", long 119°53'20", in NW¹/₄ sec.3, T.10 S., R.19 E., on left bank 0.5 mile downstream from Willow Creek and 5.3 miles southeast of Daulton.

Drainage area--259 sq mi.

Records available--October 1941 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 385 ft (from topographic map). Prior to Sept. 27, 1946, at site 300 ft downstream and Sept. 27, 1946, to Sept. 28, 1949, at present site, at datum 2.37 ft higher.

Average discharge--20 years, 94.5 cfs (68,400 acre-ft per year); median of yearly mean discharges, 66 cfs (48,000 acre-ft per year).

Extremes--Maximum discharge during year, 257 cfs Dec. 2 (gage height, 2.47 ft); no flow Oct. 1-11, July 12 to Sept. 30.

1941-61: Maximum discharge, 17,500 cfs Dec. 23, 1955 (gage height, 11.64 ft), from rating curve extended above 6,400 cfs; no flow at times.

Remarks--Records good. No diversion for irrigation between this station and station near Knowles. Some regulation at low flow by mining operations above station. See Remarks for station near Knowles.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.8	0
0.9	.1
1.0	.5
1.1	1.5
1.2	4.6
1.3	14
1.5	38
1.7	68
2.0	126

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	2.7	18	15	39	30	42	45	30	0.3		
2	0	2.7	122	16	37	30	44	42	36	.3		
3	0	3.9	90	15	*39	31	46	41	34	.3		
4	*0	5.2	54	18	44	31	49	44	30	.4		
5	0	8.8	39	18	41	30	54	37	30	.4		
6	0	13	32	19	37	28	57	37	27	.6		
7	0	12	26	19	33	30	54	42	25	.4		
8	0	14	22	20	30	30	52	49	24	.3		
9	0	*12	24	19	31	31	49	46	22	.2		
10	0	9.8	25	20	31	*32	49	46	21	.1	(*)	
11	0	8.8	25	19	32	31	*49	41	21	.1		
12	.5	12	25	19	54	30	45	*41	19	*0		
13	2.0	19	24	19	62	30	52	38	18	0		
14	1.8	41	20	20	51	30	45	36	16	0		
15	2.0	31	16	20	42	33	44	37	14	0		
16	2.0	20	15	21	46	41	42	37	12	0		
17	1.6	16	18	21	45	41	46	36	9.8	0		
18	1.8	13	19	22	38	44	51	36	8.8	0		
19	2.4	14	19	22	32	44	46	36	*6.8	0		
20	2.2	14	19	25	31	41	41	38	4.6	0		
21	2.0	14	18	24	36	37	38	42	3.0	0		
22	2.0	15	14	25	33	38	41	42	2.7	0		
23	2.0	14	13	25	30	39	46	38	2.0	0		
24	2.0	13	13	27	30	46	51	33	1.5	0		
25	2.0	12	14	27	27	57	48	33	1.1	0		
26	2.2	16	14	*36	26	54	48	33	.9	0		
27	2.7	24	15	81	28	51	42	32	.7	0		
28	2.4	*27	15	62	30	51	44	31	.5	0		
29	2.4	21	14	45	—	48	46	30	.4	0		
30	2.7	18	*13	42	—	41	44	30	.4	0		
31	3.0	—	14	41	—	44	—	31	—	0		
Total	41.7	446.9	809	822	1035	1174	1405	1180	422.2	3.4	0	0
Mean	1.35	14.9	26.1	26.5	37.0	37.9	46.8	38.1	14.1	0.11	0	0
Max.	3.0	41	122	81	62	57	57	49	36	0.6	0	0
Min.	0	2.7	13	15	26	28	38	30	0.4	0	0	0
Ac-ft	83	886	1,600	1,630	2,050	2,330	2,790	2,340	837	6.7	0	0

Calendar year 1960 :

Max

430

Min 0

Mean

34.8

Acres-feet 25,290

Water year 1960-61 :

Max

122

Min 0

Mean

20.1

Acres-feet 14,550

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

399

11-2588. East Fork Chowchilla River near Ahwahnee, Calif.

Location.--Lat 37°20'10", long 119°48'55", in NW 1/4 sec. 8, T.7 S., R.20 E., on right bank 1.1 miles upstream from mouth and 5.5 miles west of Ahwahnee.

Drainage area.--57.7 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 940 ft (from topographic map).

Extremes.--Maximum discharge during year, 306 cfs Dec. 1 (gage height, 5.26 ft); no flow for many days.
1957-61: Maximum discharge, 3,290 cfs Apr. 3, 1958 (gage height, 9.88 ft), from rating curve extended above 1,100 cfs; no flow for many days in 1959-61.

Remarks.--No known diversions upstream.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.6	5.3	3.0	7.6	5.9	12	5.0	3.0			
2	0	.6	7.7	3.0	7.7	6.3	11	4.5	3.2			
3	0	1.0	2.6	2.8	11	6.3	11	4.4	3.0			
4	0	2.0	1.3	3.1	8.1	6.1	10	4.9	2.4			
5	0	2.6	9.0	3.1	7.2	5.7	9.7	4.2	2.0			
6	0	5.6	7.2	3.2	6.7	7.0	8.7	4.9	1.6			
7	0	5.1	6.5	3.2	7.0	9.1	7.8	1.3	1.6			
8	0	2.8	5.9	3.2	6.7	7.3	7.6	7.6	1.4			
9	0	*2.3	5.5	3.5	6.1	7.5	6.5	5.9	1.3			
10	0	2.0	5.5	*3.3	*5.9	9.0	6.3	4.9	1.2			
11	0	2.1	5.1	3.1	2.5	7.2	5.3	4.7	1.0			
12	0	10	4.9	3.1	3.8	6.1	6.0	4.6	1.2			
13	0	31	*4.5	2.8	1.6	5.9	8.5	4.5	1.0			
14	.1	4.2	4.2	2.6	1.2	5.9	7.1	4.1	.8			
15	.1	9.6	4.0	2.6	1.1	1.6	7.2	3.4	.6			
16	.1	5.4	4.0	2.6	1.5	1.8	5.7	3.0	.5			
17	.2	3.8	3.8	2.7	1.2	2.4	5.5	3.4	.3			
18	.2	3.1	3.5	2.8	10	1.9	5.1	2.9	.2			
19	.2	3.0	3.4	2.8	8.7	1.2	4.8	3.6	.1			
20	.2	2.7	3.4	3.0	8.2	10	4.7	5.3	.1			
21	.2	2.3	3.7	3.0	7.9	9.8	4.7	5.0	.1			
22	.3	2.0	3.5	2.8	7.4	8.9	9.3	4.2	0			
23	.3	2.2	3.2	3.1	7.2	*10	11	3.6	*0			
24	.3	1.8	3.2	3.1	*7.1	1.2	10	*3.3	0			
25	.3	1.8	3.1	3.0	6.5	3.3	*8.0	3.0	0			
26	.3	2.2	2.8	*2.7	6.3	1.9	7.6	2.8	0			
27	.3	1.4	3.2	2.1	6.3	1.9	6.7	2.8	0			
28	.4	6.7	3.4	9.8	5.9	2.2	6.1	2.9	0			
29	.4	4.9	3.1	7.3	-	1.7	5.9	2.5	0			
30	.5	4.0	2.8	8.6	-	1.5	5.4	2.1	0			
31	.5	-	2.8	8.1	-	1.2	-	2.3	-			
Total	4.9	199.0	284.2	156.3	284.5	372.0	225.2	153.3	26.6	0	0	0
Mean	0.16	6.63	9.17	5.24	10.2	12.0	7.51	4.30	0.89	0	0	0
Max.	0.5	42	77	27	38	33	12	13	3.2	0	0	0
Min.	0	0.6	2.8	2.6	5.9	5.7	4.7	2.1	0	0	0	0
Ac-ft	9.7	395	564	310	564	738	447	264	53	0	0	0

Calendar year 1960 : Max 228 Min 0 Mean 11.0 Acre-feet 7,970
Water year 1960-61 : Max 77 Min 0 Mean 4.62 Acre-feet 3,340

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2589. West Fork Chowchilla River near Mariposa, Calif.

Location.--Lat 37°25'15", long 119°52'25", in SW 1/4 sec. 10, T. 6 S., R. 19 E., on left bank 15 ft downstream from bridge on Indian Peak Road, 0.5 mile downstream from Rumburg Creek, and 6.7 miles southeast of Mariposa.

Drainage area.--33.6 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,680 ft (from topographic map).

Extremes.--Maximum discharge during year, 21 cfs Dec. 2 (gage height, 3.37 ft); no flow for many days.
1957-61: Maximum discharge, 3,590 cfs Apr. 3, 1958 (gage height, 8.67 ft); no flow for many days in each year.

Remarks.--No known diversions upstream.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	2.6	0.7	1.6	1.3	2.4	0.7	0.4			
2		0	1.0	.7	2.0	1.4	2.3	.8	.5			
3		0	3.0	.7	3.1	1.4	2.3	.8	.5			
4		0	1.5	.6	2.0	1.4	2.2	.7	.4			
5		0	1.1	.6	1.6	1.6	2.1	.7	.3			
6		0	.8	.6	1.5	2.5	1.9	1.2	.2			
7		0	.7	.6	1.3	2.8	1.8	2.3	.1			
8		0	.8	.6	1.2	1.9	1.8	1.4	.1			
9		0	.6	.6	1.1	1.8	1.7	*.9	.1			
10		0	.7	.6	*1.3	1.6	*1.6	.8	.1			
11		0	.6	.6	1.9	1.4	1.5	.7	0			
12		.1	.6	.6	3.9	1.3	1.7	.6	0			
13		.2	.6	.6	1.9	*1.1	2.6	.5	0			
14		.2	.5	.6	1.4	.9	1.9	.5	0			
15		.1	.6	.6	1.5	8.0	1.6	.4	0			
16		0	.6	.6	3.5	6.4	1.3	.4	0			
17		0	.6	.6	2.3	11	1.3	.4	0			
18		0	.6	.6	1.7	6.6	1.2	.3	0			
19		0	.6	.6	1.5	3.8	1.0	.7	0			
20		0	.6	.6	1.5	3.0	1.0	1.6	0			
21		0	.6	.6	1.3	2.6	1.0	1.0	0			
22		0	.6	.6	1.3	2.2	2.9	.7	0			
23		*0	.6	.6	1.4	2.8	3.0	.5	0			
24		0	.6	.6	1.3	3.7	2.4	.4	0			
25		0	.6	.6	1.3	11	1.7	.4	*0			
26		1.7	.6	*7.0	1.2	5.2	1.4	.3	0			
27		2.3	.7	4.9	1.2	4.8	1.2	.3	0			
28		.8	*.7	2.0	1.3	4.6	1.0	.3	0			
29		.5	.8	1.4	-	3.2	1.0	.2	0			
30		.4	.8	1.8	-	2.9	.9	.2	0			
31		-	.7	1.9	-	2.6	-	.3	-			
Total	0	6.3	35.0	34.3	48.1	106.8	51.7	21.0	2.7	0	0	0
Mean	0	0.21	1.13	1.11	1.72	3.45	1.72	0.68	0.09	0	0	0
Max	0	2.3	10	7.0	3.9	11	3.0	2.3	0.5	0	0	0
Min	0	0	0.5	0.6	1.1	0.9	0.9	0.2	0	0	0	0
Ac-ft	0	12	69	68	95	212	103	42	5.4	0	0	0
Calendar year 1960 :			Max 233	Min 0		Mean 4.98		Acre-feet 3,620				
Water year 1960-61 :			Max 7.0	Min 0		Mean 0.84		Acre-feet 606				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

601

11-2589.20. Middle Fork Chowchilla River near Nipinnawassie, Calif.

Location.--Lat 37°23'00", long 119°50'12", in SW 1/4 sec.25, T.6 S., R.19 E., on right bank 3.4 miles upstream from West Fork and 6 miles west of Nipinnawassie.

Drainage area.--12.3 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,520 ft (from topographic map).

Extremes.--Maximum discharge during year, 64 cfs Dec. 1 (gage height, 3.68 ft); no flow for several months.
1958-61: Maximum discharge, 461 cfs Mar. 28, 1960; no flow for several months in each year.

Remarks.--Small diversion above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	5.8	0.4	1.0	1.1	2.6	0.7	0.4			
2		0	3.1	.3	1.3	1.1	2.5	.7	.4			
3		0	0.2	.3	2.1	1.1	2.3	.6	.3			
4		0	3.4	.3	1.4	1.1	2.1	.6	.2			
5		0	2.2	.3	1.1	1.2	1.5	.5	.1			
6		0	1.6	.3	.9	1.8	1.3	.9	.1			
7		0	1.1	.3	.9	2.5	1.2	2.2	.1			
8		0	1.0	.3	.9	1.8	1.1	1.3	.1			
9		0	1.0	.3	.8	1.5	1.1	*.7	0			
10		0	1.1	.3	*.8	1.5	*1.1	.6	0			
11		0	1.1	.2	2.3	1.4	.9	.5	0			
12		2.2	.9	.2	7.1	1.3	.9	.5	0			
13		3.2	.8	.2	3.3	*1.2	1.3	.5	0			
14		0.5	.6	.2	2.3	1.0	1.3	.5	0			
15		1.0	.6	.2	2.2	3.8	1.0	.4	0			
16		.3	.6	.2	4.8	7.8	.8	.3	0			
17		.2	.5	.2	3.6	9.7	.7	.3	0			
18		.1	.6	.1	2.3	7.4	.6	.3	0			
19		.1	.5	.2	1.9	4.5	.6	.5	0			
20		.1	.5	.2	1.7	3.6	.6	1.3	0			
21		.1	.6	.1	1.5	3.2	.6	1.0	0			
22		.1	.6	.1	1.4	2.2	1.6	.8	0			
23		*.1	.5	.1	1.3	2.3	2.4	.6	0			
24		.1	.5	.1	1.3	2.2	1.8	*.4	0			
25		.1	.5	.1	1.3	1.5	1.4	.3	0			
26		3.4	.6	*3.7	1.2	6.1	1.2	.3	0			
27		2.8	.6	4.1	1.2	5.2	1.1	.2	0			
28		1.2	*.5	1.6	1.1	6.0	.9	.2	0			
29		.7	.4	1.0	—	3.6	.8	.2	0			
30		.6	.4	1.0	—	3.1	.7	.2	0			
31		—	.4	1.2	—	2.9	—	.3	—			
Total	0	25.9	69.7	18.1	53.0	108.2	38.0	18.4	1.7	0	0	0
Mean	0	0.86	2.25	0.58	1.89	3.49	1.27	0.59	0.06	0	0	0
Max.	0	9.5	31	4.1	7.1	15	2.6	2.2	0.4	0	0	0
Min.	0	0	0.4	0.1	0.8	1.0	0.6	0.2	0	0	0	0
Ac-ft	0	51	138	36	105	215	75	35	3.4	0	0	0
Calendar year 1960:			Max	116	Min	0	Mean	3.06	Acres-feet	2,220		
Water year 1960-61:			Max	31	Min	0	Mean	0.91	Acres-feet	659		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2590. Chowchilla River at Buchanan damsite, Calif.

Location.--Lat 37°13'00", long 119°59'00", in SE $\frac{1}{4}$ sec.22, T.8 S., R.18 E., on right bank 1.9 miles upstream from Raynor Creek and 4.3 miles west of Raymond.

Drainage area.--238 sq mi.

Records available.--October 1921 to September 1923, October 1930 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 407.30 ft above mean sea level, adjustment of 1912 (levels by Merced Irrigation District). October 1921 to September 1923 at site 2.5 miles upstream at different datum.

Average discharge.--33 years (1921-23, 1930-61), 97.5 cfs (70,590 acre-ft per year); median of yearly mean discharges, 75 cfs (54,300 acre-ft per year).

Extremes.--Maximum discharge during year, 200 cfs Dec. 2 (gage height, 3.56 ft); no flow for many days.

1921-23, 1930-61: Maximum discharge, 30,000 cfs Dec. 23, 1955 (gage height, 16.50 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurement at gage height 15.06 ft; no flow for part of each year except 1937-38, 1940-43.

Remarks.--Records good. No storage or large diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0	1.7	5.0
1.1	.1	1.8	7.5
1.2	.4	1.9	11
1.3	.7	2.1	22
1.4	1.2	2.5	58
1.5	2.0	3.0	119
1.6	3.2	3.5	210

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	*1.0	5.4	17	12	22	7.5	2.4			
2		0	12.2	5.4	19	11	20	7.2	2.5			
3		0	5.8	5.4	22	11	19	6.7	2.9			
4	(*)	0	3.0	5.4	22	11	17	5.7	2.8			
5		0	2.0	5.4	18	12	16	6.9	2.3			
6		0	1.5	5.4	15	12	15	6.7	1.9			
7		0	1.3	5.4	14	15	14	6.9	1.6			
8		0	1.2	5.2	*1.3	17	14	1.3	1.2			
9		*0	1.0	5.2	1.2	15	13	1.1	1.1		(*)	
10		0	9.8	5.2	11	*1.5	12	8.1	.7			
11		0	9.1	5.2	12	15	*1.1	6.7	.4			
12		1.0	8.7	5.2	4.8	1.3	1.1	*5.7	.4	(*)		
13		3.0	8.4	5.2	3.9	1.2	1.3	5.2	.2			
14		3.5	8.1	5.2	2.5	1.2	1.5	5.0	.2			
15		1.5	7.8	5.2	2.0	2.4	1.3	4.6	.1			
16		1.0	7.5	5.2	2.1	4.4	1.0	4.0	.1			
17		9	7.2	5.2	2.7	3.9	1.0	3.7	0			
18		9	7.2	5.2	2.2	5.1	9.1	3.4	0			(*)
19		9	7.0	5.2	1.8	3.5	7.4	3.5	*0			
20		9	7.0	5.2	1.6	2.7	8.9	4.6	0			
21		9	6.4	5.2	1.5	2.3	8.1	6.0	0			
22		8	6.4	5.2	1.4	2.0	1.0	6.7	0			
23		8	6.2	5.0	1.4	2.0	1.7	5.4	0			
24		8	6.2	5.0	1.3	2.2	2.0	4.4	0			
25		9	6.2	5.7	1.3	3.2	1.7	3.7	0			
26		1.0	6.2	2.1	1.2	5.1	1.3	3.0	0			
27		1.5	6.2	6.1	1.2	3.6	1.1	2.5	0			
28		2.1	6.0	3.4	1.2	3.6	1.0	2.3	0			
29		1.3	5.7	2.2	—	3.4	9.1	2.0	0			
30		1.2	*5.7	1.9	—	2.6	8.1	1.9	0			
31		—	5.4	1.9	—	2.4	—	2.2	—			
Total	0	2.49	44.4	307.5	51.6	72.7	395.7	166.2	20.8	0	0	0
Mean	0	8.30	14.3	9.92	18.4	23.5	13.1	5.36	0.69	0	0	0
Max.	0	35	122	61	48	51	22	13	2.9	0	0	0
Min.	0	0	5.4	5.0	11	11	7.4	1.9	0	0	0	0
Ac-ft	0	494	881	610	1,020	1,440	781	330	41	0	0	0

Calendar year 1960 :

Max 1,100

Min 0

Mean 25.2

Acre-feet 18,270

Water year 1960-61 :

Max 122

Min 0

Mean 7.74

Acre-feet 5,600

Peak discharge (base, 770 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Nov. 12-27, 30.

SAN JOAQUIN RIVER BASIN

603

11-2602. Bear Creek near Cathay, Calif.

Location.--Lat 37°28'40", long 120°06'45", in SE 1/4 sec. 21, T.5 S., R.17 E., on downstream side of bridge, 0.9 mile upstream from Raster Gulch, and 3.7 miles north of Cathay School.

Drainage area.--24.6 sq mi.

Records available.--January 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,210 ft (from topographic map).

Extremes.--Maximum discharge during year, 999 cfs Dec. 1 (gage height, 6.94 ft); no flow for many days.

1958-61: Maximum discharge, 2,570 cfs Apr. 3, 1958 (gage height, 9.36 ft), from rating curve extended above 1,200 cfs; no flow for many days in each year.

Remarks.--No known diversion or regulation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	140	0.5	2.9	0.9	1.2					
2		0	97	.4	4.9	.9	1.1					
3		0	15	.4	15	.7	1.0					
4		0	5.8	.4	7.4	.8	.8					
5		0	3.5	.4	4.7	.7	.6					
6		0	2.5	.4	3.6	1.0	.5					
7		0	2.0	.4	2.7	.9	.5					
8		0	1.8	*.4	*2.5	.8	.4					
9		0	1.6	.3	2.0	.8	.4					
10		0	1.2	.3	*1.8	*.7	*.5					
11		0	1.1	.3	2.7	.6	.5					
12		0	*.9	.3	8.5	.5	.5					
13		.1	.9	.3	5.6	.5	.5					
14		.2	.9	.2	3.7	.5	.5					
15		0	.8	.2	2.9	1.4	.5					
16		0	.9	.2	3.2	2.1	.5					
17		0	.8	.1	2.7	4.4	.4					
18		0	.8	.1	2.3	8.2	.3					
19		0	.8	.2	1.9	4.1	.2					
20		0	.7	.2	1.8	3.2	.1					
21		0	.8	.2	1.6	2.6	.1					
22		0	.8	.1	1.4	2.3	.4					
23		0	.7	.1	1.3	2.2	.4					
24		0	.7	.1	1.3	2.0	.3					
25		0	.7	.1	1.3	2.1	.4					
26		13	.6	*2.4	1.3	1.7	.3					
27		7.6	.7	4.8	1.1	1.5	.2					
28		2.7	.5	2.9	1.1	1.4	.2					
29		1.7	.5	2.4	-	1.3	.1					
30		1.5	.5	3.1	-	1.2	0					
31		-	.5	2.9	-	1.3	-					
Total	0	26.8	286.0	25.1	93.2	53.3	13.4	0	0	0	0	0
Mean	0	0.89	9.23	0.81	3.33	1.72	0.45	0	0	0	0	0
Max.	0	13	140	4.8	15	8.2	1.2	0	0	0	0	0
Min.	0	0	0.5	0.1	1.1	0.5	0	0	0	0	0	0
Ac-ft	0	53	567	50	185	106	27	0	0	0	0	0
Calendar year 1960:			Max	558	Min	0	Mean	7.92	Acre-feet	5,750		
Water year 1960-61:			Max	140	Min	0	Mean	1.36	Acre-feet	988		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2604.8. Mariposa Creek near Cathay, Calif.

Location.--Lat 37°23'55", long 120°00'10", in SW 1/4 sec. 21, T.6 S., R.18 E., on downstream side of bridge on White Rock Road, 0.3 mile downstream from China Gulch and 5.6 miles east of Cathay School.

Drainage area.--66.0 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,230 ft (from topographic map).

Extremes.--Maximum discharge during year, 968 cfs Dec. 1 (gage height, 7.38 ft); no flow for many days.

1958-61: Maximum discharge, 1,620 cfs Feb. 16, 1959 (gage height, 8.61 ft); no flow for many days in each year.

Flood of Apr. 3, 1958, reached a stage of 11.62 ft (discharge, 4,530 cfs, from rating extended above 1,800 cfs).

Remarks.--Probably minor diversions for irrigation upstream from station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	117	1.4	6.4	2.6	3.2	0.6	0.3			
2		0	57	1.4	8.1	2.4	2.9	1.0	.3			
3		0	13	1.4	16	2.4	2.8	1.0	2			
4		0	6.8	1.4	9.7	2.4	2.7	1.1	1			
5		0	4.7	1.4	7.2	2.6	2.5	1.0	.1			
6		0	3.9	1.4	5.9	2.9	2.0	1.4	.1			
7		0	3.0	1.4	4.9	4.0	2.0	2.3	.1			
8		0	2.7	1.4	*4.4	3.1	1.7	2.1	.1			
9		0	2.5	1.4	4.2	2.7	1.8	1.4	0			
10		0	2.2	*1.4	3.7	2.7	1.8	1.2	0			
11		0	2.1	1.4	4.2	2.1	1.6	1.1	0			
12		0	*2.1	1.5	6.9	2.0	1.7	1.1	0			
13		0	1.9	1.4	5.2	1.8	2.3	1.0	0			
14		0	1.7	1.4	4.3	1.8	1.9	1.0	0			
15		0	1.5	1.4	3.9	2.0	1.8	1.0	0			
16		0	1.5	1.3	5.5	1.3	1.7	.7	0			
17		0	1.5	1.3	5.2	1.4	1.5	.7	0			
18		0	1.4	1.3	4.2	1.2	1.5	.6	0			
19		0	1.5	1.3	3.8	9.4	1.4	.7	0			
20		0	1.5	1.2	3.5	6.7	1.2	1.3	0			
21		0	1.7	1.3	3.3	5.9	1.5	1.1	0			
22		0	1.5	1.3	3.0	5.9	2.5	1.1	0			
23		0	1.6	1.3	2.9	5.7	3.1	.8	0			
24		0	1.6	1.3	*2.8	*6.0	2.6	.7	0			
25		0	1.6	1.4	2.6	8.3	2.2	*.5	0			
26		27	1.4	*1.7	2.5	6.3	*1.9	.4	0			
27		15	1.5	1.6	2.3	6.2	1.6	.4	0			
28		5.0	1.4	7.3	2.9	6.1	1.4	.3	0			
29		3.1	1.4	5.7	-	4.7	1.2	.2	0			
30		2.3	1.3	7.8	-----	4.0	1.1	.2	0			
31		-----	1.4	6.8	-----	3.6	-----	.3	-----			
Total	0	52.4	245.9	94.7	139.5	173.3	59.1	28.3	1.3	0	0	0
Mean	0	1.75	7.93	3.05	4.98	5.59	1.97	0.91	0.04	0	0	0
Max	0	27	117	17	16	20	3.2	2.3	0.3	0	0	0
Min.	0	0	1.3	1.2	2.3	1.8	1.1	0.2	0	0	0	0
Ac-ft	0	104	488	188	277	344	117	56	2.6	0	0	0
Calendar year 1960:			Max	592	Min	0	Mean	9.77	Acre-feet	7,100		
Water year 1960-61:			Max	117	Min	0	Mean	2.18	Acre-feet	1,580		

* Discharge measurement made on this day.

11-2610. Salt Slough near Los Banos, Calif.

Location.--Lat 37°09'35", long 120°48'45", in Sanjon de Santa Rita Grant on left bank at San Luis Ranch, 600 yards downstream from confluence with Mud Slough, and 7.0 miles north of Los Banos, Merced County.

Records available.--October 1940 to September 1961. Monthly discharge only for October to December 1940, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 70.60 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--21 years, 224 cfs (162,200 acre-ft per year).

Extremes.--Maximum discharge during year, 137 cfs May 24 (gage height, 3.60 ft); minimum, 6.0 cfs Oct. 26, 27.
1941-61: Maximum daily discharge, 2,420 cfs Mar. 9, 1941; minimum, that of Oct. 26, 27, 1961.

Remarks.--Records good. Flow regulated by irrigation operations above station. Salt Slough is a continuation of Pick Anderson Slough system.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 17-21)

Oct. 1-26		Oct. 27 to Apr. 21		Apr. 22 to Sept. 30	
2.1	6.5	2.1	7	2.4	16
2.2	12	2.2	12	2.5	26
2.3	19	2.3	17	2.7	46
2.4	26	2.5	27	3.0	76
2.5	34	2.7	38	3.6	137
2.7	50	3.0	57		
3.1	87	3.3	79		
		3.6	105		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	10	59	74	75	51	72	108	105	58	39	76
2	67	16	62	74	77	56	79	99	100	59	45	68
3	73	23	63	77	91	59	81	78	96	72	49	69
4	74	21	63	84	92	63	84	72	102	71	51	68
5	84	22	64	85	95	54	65	108	93	68	51	70
6	83	36	65	85	97	54	56	104	99	67	51	78
7	80	47	60	83	99	52	*63	110	94	60	58	72
8	79	42	56	80	97	52	63	110	93	47	60	63
9	39	36	60	73	90	58	62	98	87	34	50	62
10	30	30	63	73	81	54	62	97	92	38	53	58
11	26	30	64	85	77	48	56	103	85	54	57	53
12	25	21	62	78	75	40	49	*105	83	58	56	46
13	21	28	58	76	73	37	48	111	*92	*58	65	38
14	21	30	56	75	*70	33	52	106	85	55	61	27
15	31	*32	56	73	69	34	55	107	75	56	63	21
16	30	32	56	*69	67	*42	63	100	59	38	63	24
17	26	32	54	66	60	48	79	96	62	33	*68	30
18	25	33	48	64	56	48	65	88	61	32	74	34
19	24	36	*49	62	55	42	50	88	59	30	68	*41
20	21	51	48	62	57	39	46	107	61	32	61	47
21	19	57	46	60	66	38	*58	111	59	33	64	40
22	13	56	46	58	70	45	82	126	55	34	62	31
23	11	54	48	57	77	58	100	128	53	42	53	22
24	11	51	50	56	80	64	96	135	48	47	48	28
25	8.9	49	57	55	78	65	93	127	46	39	50	36
26	*7.1	47	81	63	69	65	78	126	46	36	42	31
27	7.0	48	93	90	54	66	78	122	47	35	51	44
28	7.5	48	89	93	48	74	86	113	51	37	68	50
29	7.0	53	85	84	—	70	93	112	58	37	73	54
30	7.5	56	81	77	—	72	104	117	54	30	78	50
31	9.0	—	77	76	—	67	—	110	—	37	84	—
Total	1,024.0	1,127	1,919	2,267	2,095	1,648	2,118	3,322	2,200	1,427	1,816	1,431
Mean	33.0	37.6	61.9	73.1	74.8	53.2	70.6	107	73.3	46.0	58.6	47.7
Max.	84	57	93	93	99	74	104	135	105	72	84	78
Min.	7.0	10	46	55	48	33	46	72	46	30	39	21
Ac-ft	2,030	2,240	3,810	4,500	4,160	3,270	4,200	6,590	4,360	2,830	3,600	2,840

Calendar year 1960 : Max 147 Min 7.0 Mean 63.5 Acra-feet 46,110
Water year 1960-61 : Max 135 Min 7.0 Mean 61.4 Acra-feet 44,430

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 6-11, Mar. 3-15.

11-2615. San Joaquin River at Fremont Ford Bridge, Calif.

Location.--Lat 37°18'35", long 120°55'45", in Orestimba Grant, on left bank 150 ft downstream from Fremont Ford Bridge, Merced County, 2.1 miles downstream from Salt Slough, 4.5 miles west of Stevinson, and 6.7 miles upstream from Merced River.

Drainage area.--8,090 sq mi, approximately.

Records available.--March 1937 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Oct. 1, 1959, at datum 3.77 ft below mean sea level (levels by Topographic Division). Prior to Dec. 8, 1949, on downstream side of Fremont Ford Bridge near left bank.

Average discharge.--24 years, 859 cfs (621,900 acre-ft per year).

Extremes.--Maximum discharge during year, 306 cfs Jan. 28 (gage height, 56.25 ft); minimum, 9.5 cfs Oct. 30.

1944-61: Maximum discharge, 5,910 cfs Apr. 6, 1958 (gage height, 71.14 ft, datum then in use); minimum, that of Oct. 30, 1960.

Remarks.--Records good. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water from Delta-Mendota Canal (see p. 673). During periods of high flow, some water bypasses this station through Mud Slough; low flows consist mainly of return water from irrigated areas. See Remarks for stations upstream.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Jan. 13 to Feb. 3,
July 21 to Aug. 8, Sept. 7-30)

53.9	7.5
54.1	18
54.3	32
54.5	52
55.0	115
55.5	190
56.2	317

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	10	51	66	204	99	143	136	162	79	61	119
2	31	11	54	79	195	102	140	132	156	92	56	119
3	30	12	54	81	192	106	149	129	152	89	62	107
4	40	15	52	81	175	105	162	117	155	106	71	101
5	52	17	60	85	168	97	164	110	155	99	72	98
6	54	21	71	88	166	101	154	117	142	82	81	97
7	52	25	75	86	161	98	144	140	134	79	85	93
8	49	33	67	85	154	99	142	150	123	73	93	89
9	51	34	60	89	150	99	140	148	120	67	90	82
10	36	29	55	120	152	106	134	154	119	61	80	77
11	24	30	63	176	148	105	116	153	120	62	77	77
12	21	29	68	148	138	84	*101	*152	115	73	75	67
13	19	24	68	132	134	68	96	146	*112	*76	72	54
14	17	24	66	124	*128	62	110	143	122	62	76	49
15	14	35	62	116	125	62	111	143	119	56	77	45
16	13	37	59	108	125	60	112	138	105	63	81	44
17	13	39	55	107	118	*71	118	130	90	53	77	40
18	*13	41	36	102	111	77	131	127	84	42	71	36
19	12	42	37	93	102	81	119	123	82	38	70	*42
20	12	42	51	*85	101	84	102	130	81	46	66	62
21	14	49	*54	82	101	76	92	134	85	49	71	60
22	15	56	55	77	112	71	96	140	84	49	71	52
23	17	59	46	73	122	79	110	152	64	52	79	46
24	17	60	41	68	128	92	127	164	51	75	*85	41
25	16	*60	50	79	136	99	132	175	48	*82	84	42
26	15	60	56	229	132	102	134	176	64	58	86	44
27	14	56	72	290	120	112	123	173	63	61	86	45
28	12	50	101	304	107	127	121	162	60	60	93	51
29	11	45	90	300	—	132	120	155	61	56	106	53
30	10	46	79	287	—	131	120	161	72	58	111	55
31	10	—	64	234	—	143	—	167	—	56	115	—
Total	743	1091	1872	4074	1905	2930	1763	4477	3100	2054	2480	1987
Mean	24.0	36.4	60.4	131	139	94.5	125	144	103	66.3	80.0	66.2
Max.	54	60	101	304	204	143	164	176	162	106	115	119
Min.	10	10	36	66	101	60	92	110	48	38	56	36
Ac-ft	1,470	2,160	3,710	8,080	7,750	5,810	7,460	8,880	6,150	4,070	4,920	3,940

Calendar year 1960: Max 1,060 Min 10 Mean 111 Acre-feet 80,690
 Water year 1960-61: Max 304 Min 10 Mean 89.0 Acre-feet 64,400

* Discharge measurement made on this day.

Note.--No gage-height record Apr. 28 to May 11.

SAN JOAQUIN RIVER BASIN

607

11-2628. Los Banos Creek near Los Banos, Calif.

Location.--Lat 37°01'00", long 120°54'05", in SE 1/4 sec. 32, T.10 S., R.10 E., at Delta-Mendota Canal siphon crossing, 4.3 miles southwest of Los Banos.

Drainage area.--159 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 175 ft (from topographic map). Prior to Sept. 9, 1959, at datum 1.00 ft higher.

Extremes.--No flow during year.

1958-61: Maximum discharge, 1,620 cfs Feb. 8, 1960 (gage height, 4.02 ft), from rating curve extended above 450 cfs on basis of slope-area measurement at gage height 12.07 ft (flood of Dec. 23, 1955); no flow at times in most years.

Flood of Dec. 23, 1955, reached a stage of 12.07 ft (present datum), from flood mark in well (discharge, 11,400 cfs on basis of slope-area measurement of peak flow).

Remarks.--No flow since Feb. 23, 1960. Observations of no flow generally made once a month. Figures for calendar year 1960 are as follows: maximum daily discharge, 642 cfs; minimum, zero; mean, 4.76 cfs; runoff, 3,460 acre-ft.

SAN JOAQUIN RIVER BASIN

11-2630. San Luis Creek near Los Banos, Calif.

Location.--Lat 37°03'55", long 121°04'15", in San Luis Gonzaga Grant, on left bank 300 ft downstream from Cottonwood Creek and 11.5 miles west of Los Banos, Merced County.

Drainage area.--84.7 sq mi.

Records available.--October 1949 to September 1961. Monthly discharge only for some periods, published in WSP 1735.

Gage.--Water-stage recorder. Altitude of gage is 231 ft (from topographic map).

Average discharge.--12 years, 6.11 cfs (4,420 acre-ft per year).

Extremes.--Maximum discharge during year, 2.6 cfs Jan. 26 (gage-height, 2.03 ft); no flow for several months.

1949-53, 1958-61: Maximum discharge, 2,700 cfs Nov. 19, 1950 (gage height, 5.60 ft), from rating curve extended above 470 cfs on basis of slope-area measurement of peak flow; no flow for several days to several months each year.

Flood of Apr. 2, 1958 reached a stage of 7.99 ft (discharge, 3,420 cfs, by slope-area measurement of peak flow).

Remarks.--Records good. No storage or large diversions.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.7	0
1.8	.3
1.9	1.1
2.0	3.2

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.3	0.4	0.4	0						
2		0	.3	.4	.6	0						
3		0	.3	.4	.5	0						
4		0	.3	.4	.4	0						
5		0	.3	.4	.4	0						
6		.1	.3	.4	.4	.2						
7		.1	.3	.4	.4	.3						
8		.1	.4	.4	.4	.4						
9		.1	.4	.4	.4	.4						
10		.1	.4	.4	.4	.3						
11		.1	.3	.4	.3	.2						
12		.2	.3	.4	.3	.4	(*)	(*)	(*)			
13		.2	.3	.4	.3	.4						
14		.2	.3	.3	.3	.4						
15		** .2	.3	.3	.3	.2						
16		.2	.3	.3	.3	* 0						
17		.2	.3	* .3	.4	0						
18		.2	.3	.3	.4	.1						
19		.2	* .3	.3	.4	.3						(*)
20		.2	.4	.4	.4	.2						
21		.3	.4	.4	.4	* 0					(*)	
22		.3	.4	.4	.4	0						
23		.3	.4	.4	.4	0						
24		.3	.4	.4	.4	0						
25		.3	.3	.5	.4	0						
26		.3	.3	1.5	.4	.2						
27	(*)	.3	.3	.5	.4	.3						
28		.3	.3	.4	.3	.3						
29		.3	.3	.4	—	.2						
30		.3	.3	.4	—	.2						
31		—	.4	.5	—	.2						
Total	0	5.4	10.2	13.2	10.8	5.2	0	0	0	0	0	0
Mean	0	0.18	0.33	0.43	0.39	0.17	0	0	0	0	0	0
Max.	0	0.3	0.4	1.5	0.6	0.4	0	0	0	0	0	0
Min.	0	0	0.3	0.3	0.3	0	0	0	0	0	0	0
Ac-ft	0	11	20	26	21	10	0	0	0	0	0	0

Calendar year 1960 :

Max 176

Min 0

Mean 1.43

Acres-feet 1,040

Water year 1960-61 :

Max 1.5

Min 0

Mean 0.12

Acres-feet 88

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

11-2645. Merced River at Happy Isles Bridge, near Yosemite, Calif.

Location--Lat 37°43'54", long 119°33'28", on right bank 10 ft downstream from Happy Isles Bridge, 0.4 mile downstream from Illilouette Creek, and 2.0 miles southeast of Yosemite National Park Headquarters, Mariposa County.

Drainage area--181 sq mi.

Records available--August 1915 to September 1961.

Gage--Water-stage recorder. Datum of gage is 4,016.58 ft above mean sea level, datum of 1929. Prior to Nov. 2, 1916, staff gage at datum 0.55 ft lower.

Average discharge--46 years, 334 cfs (241,800 acre-ft per year).

Extremes--Maximum discharge during year, 1,080 cfs May 25 (gage height, 4.88 ft); minimum, 2.5 cfs Oct. 1, 2, 3, 5.
1915-61: Maximum discharge, 9,860 cfs Dec. 23, 1955 (gage height, 12.73 ft), from rating curve extended above 4,000 cfs on basis of contracted-opening measurements at gage heights 10.4 and 11.55 ft; minimum, 1.5 cfs Sept. 30, 1926.

Remarks--Records good. About 1 cfs diverted above station for Yosemite Valley water supply.

Rating tables (gage height, in feet, and discharge,
in cubic feet per second)

Oct. 1 to Dec. 1

Dec. 1 to Sept. 30

0.7	2.2	1.1	10
.8	3.0	1.3	18
.9	4.1	1.6	36
1.0	5.7	2.0	70
1.1	7.9	2.5	143
1.3	14	3.0	250
1.5	25	3.5	405
1.8	50	4.0	600
		4.7	970

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	4.6	73	21	30	44	188	*527	436	118	25	23
2	2.7	4.5	86	20	31	50	278	483	447	108	23	21
3	2.8	5.0	62	20	32	55	483	523	515	140	22	19
4	2.7	7.4	56	20	32	59	710	527	547	252	22	18
5	2.7	7.2	51	19	32	57	767	408	622	228	32	17
6	3.4	9.7	43	18	35	56	695	352	762	165	46	15
7	5.0	13	43	19	35	56	573	384	772	124	91	15
8	5.7	11	41	18	35	62	440	440	816	101	56	14
9	13	12	39	18	37	62	436	535	745	87	42	14
10	13	12	37	17	48	57	377	573	715	82	35	13
11	13	12	35	17	82	55	380	487	660	78	66	12
12	12	22	35	17	77	54	472	380	547	76	134	12
13	11	24	34	17	68	56	370	335	564	72	140	11
14	11	26	32	17	62	65	363	472	618	67	*96	12
15	10	31	31	17	65	77	433	636	591	61	69	12
16	8.9	38	30	17	61	77	636	695	582	56	55	13
17	8.2	40	30	18	56	83	735	735	507	52	45	15
18	7.9	41	29	18	50	74	695	715	491	49	37	18
19	*7.4	41	28	18	47	78	491	705	450	45	33	20
20	6.9	37	27	19	48	87	363	640	433	42	30	22
21	6.5	36	27	20	49	100	299	789	*398	39	27	22
22	6.3	35	28	19	57	123	268	888	366	36	30	22
23	5.9	31	29	18	54	198	250	866	338	33	66	21
24	5.9	29	30	18	52	169	238	916	299	30	76	20
25	5.9	31	30	18	51	147	250	970	278	53	62	18
26	5.7	35	29	25	48	129	255	850	268	70	50	*17
27	5.5	32	28	27	*45	123	275	700	248	54	42	*15
28	5.3	35	24	25	42	*110	317	735	215	44	36	15
29	5.1	39	25	26	-	102	377	665	174	38	31	14
30	5.0	*38	25	27	-	118	419	495	140	33	28	14
31	4.6	-	24	30	-	152	-	433	-	28	25	-
Total	211.7	739.4	1141	618	1361	2735	12833	18859	14544	2461	1572	494
Mean	6.83	24.6	36.8	19.9	48.6	88.2	428	608	485	79.4	50.7	16.5
Max.	13	41	86	30	82	198	767	970	816	252	140	23
Min.	2.7	4.5	24	17	30	44	188	335	140	28	22	11
Ac-ft	420	1,470	2,260	1,230	2,700	5,420	25,450	37,410	28,850	4,880	3,120	980

Calendar year 1960 : Max 1,500 Min 2.7 Mean 198 Acre-feet 143,900

Water year 1960-61 : Max 970 Min 2.7 Mean 158 Acre-feet 114,200

Peak discharge (base, 1,900 cfs)--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 7-16, Sept. 12-18.

SAN JOAQUIN RIVER BASIN

11-2665. Merced River at Pohono Bridge, near Yosemite, Calif.

Location.--Lat 37°43'01", long 119°39'55", on left bank 150 ft upstream from Pohono Bridge, 0.4 mile upstream from Artist Creek, and 4.8 miles southwest of Yosemite National Park Headquarters, Mariposa County.

Drainage area.--321 sq mi.

Records available.--October 1916 to September 1961. Monthly discharge only for October and November 1916, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 3,861.66 ft above mean sea level, datum of 1929. Prior to Sept. 5, 1918, at datum 1.8 ft higher and Sept. 5, 1918, to Sept. 30, 1955, at datum 1.0 ft higher.

Average discharge.--45 years, 586 cfs (424,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,550 cfs Apr. 5 (gage height, 5.84 ft); minimum daily, 14 cfs Oct. 5.

1916-61: Maximum discharge, 23,400 cfs Dec. 23, 1955 (gage height, 21.52 ft from floodmark in well), from rating curve extended above 6,800 cfs on basis of computation of flow over diversion dam for Yosemite powerhouse 1 mile downstream at gage heights 20.1 and 20.98 ft, present datum; minimum, 3.3 cfs Sept. 29, Oct. 1, 1924.

Remarks.--Records good. No diversions between stations at Happy Isles Bridge and Pohono Bridge. About 1 cfs sewage effluent returns between stations. See Remarks for Merced River at Happy Isles Bridge, near Yosemite.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.1	12
1.3	19
1.6	34
2.0	66
2.5	128
3.0	219
4.0	505
5.0	990
5.9	1,590

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	17	129	43	65	101	381	*960	740	162	49	38
2	15	17	195	41	69	113	512	888	745	150	47	35
3	15	18	120	40	70	122	852	942	785	167	46	33
4	15	20	106	40	72	128	1,180	966	828	285	46	32
5	14	21	96	39	83	121	1,290	780	900	282	42	29
6	17	24	82	38	89	121	1,190	675	1,030	213	71	27
7	17	25	77	39	89	111	1,050	725	1,030	170	111	26
8	18	26	73	38	87	131	800	840	1,060	142	80	24
9	20	26	68	38	87	130	800	972	978	124	64	24
10	26	26	64	37	110	118	695	1,060	918	120	55	23
11	26	26	63	35	203	118	690	918	852	121	69	22
12	26	38	61	35	181	115	876	740	720	120	128	21
13	24	49	59	35	165	120	680	648	700	118	160	20
14	24	44	59	35	145	145	685	834	745	111	*122	19
15	22	44	57	36	155	165	780	1,060	710	100	95	19
16	21	49	55	*35	145	155	1,090	1,130	680	93	76	20
17	21	54	55	36	128	172	1,240	1,180	612	88	64	22
18	20	56	53	37	120	152	1,230	1,160	580	84	55	26
19	20	60	51	37	104	165	942	1,150	530	82	50	27
20	*20	55	51	38	110	187	710	1,060	502	76	46	30
21	19	53	51	39	114	224	600	1,200	*463	70	42	32
22	19	53	52	40	135	265	544	1,320	417	64	39	32
23	19	54	55	40	121	405	505	1,290	417	62	55	32
24	19	52	56	40	121	342	466	1,320	360	59	88	30
25	19	55	55	40	117	282	508	1,380	324	63	78	29
26	19	63	56	54	111	254	533	1,270	324	100	68	*26
27	18	58	54	55	*103	249	576	1,060	300	87	59	24
28	18	59	47	55	*100	219	640	1,080	265	71	53	24
29	18	*67	49	55	-	*207	745	990	226	62	47	24
30	17	*66	49	59	-	235	800	795	187	57	43	24
31	17	-	47	62	-	310	-	710	-	53	41	-
Total	598	1,275	2,145	1,291	3,199	5,682	23,590	31,103	18,928	3,556	2,089	794
Mean	19.3	42.5	69.2	41.6	114	183	786	1,003	631	115	67.4	26.5
Max.	26	67	195	62	203	405	1,290	1,380	1,060	285	160	38
Min.	14	17	47	35	65	101	381	648	187	53	39	19
Ac-ft	1,190	2,530	4,250	2,560	6,350	11,270	46,790	61,690	37,540	7,050	4,140	1,370

Calendar year 1960 : Max 2,650 Min 14 Mean 350 Acre-feet 254,000

Water year 1960-61 : Max 1,380 Min 14 Mean 258 Acre-feet 186,900

Peak discharge (base, 2,900 cfs)--No peak above base.

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

611

11-2673. South Fork Merced River at Wawona, Calif.

Location.--Lat 37°32'20", long 119°39'40", in SW¹/₄ sec.34, T.4 S., R.21 E., in Yosemite National Park, Mariposa County, 1,000 ft downstream from highway bridge at Wawona, and 1,200 ft upstream from Big Creek.

Drainage area.--99.2 sq mi.

Records Available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,050 ft (from topographic map).

Extremes.--Maximum discharge during year; 800 cfs Apr. 4 (gage height, 4.00 ft); minimum, 0.8 cfs Sept. 9.
1958-61: Maximum discharge, 1,860 cfs Feb. 16, 1959 (gage height, 5.26 ft); minimum, 0.6 cfs Sept. 5, 1960.

Remarks.--Records good. Diversion of about 0.5 cfs above station for town of Wawona. Small amount diverted above station during summer for irrigation of Wawona Golf Course.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.74	0.8
.8	1.3
.9	2.8
1.0	5.2
1.1	9
1.2	13
1.4	24
1.6	40
2.0	88
2.5	180
3.0	330
3.5	535
4.0	800

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.2	1.4	191	19	36	46	173	*397	192	13	1.4	1.7
2	1.2	1.4	116	20	38	60	257	365	245	12	1.3	1.7
3	1.1	2.0	56	19	38	60	437	425	254	11	1.1	1.7
4	1.1	4.0	43	18	35	56	553	385	210	24	1.2	1.3
5	1.3	5.2	35	17	35	51	526	295	198	21	1.3	1.3
6	4.2	11	30	16	38	50	458	251	198	15	1.4	1.2
7	7.0	11	30	15	37	48	385	270	180	12	1.2	1.3
8	3.4	8.6	28	14	36	52	302	316	165	9.4	1.2	1.2
9	2.6	7.0	26	14	39	56	316	362	148	7.4	1.1	1.1
10	2.4	6.6	25	14	58	48	288	373	136	6.2	1.1	1.3
11	2.1	7.0	23	14	119	47	351	309	125	5.2	1.1	1.2
12	2.1	2.6	22	15	90	46	377	245	104	5.2	1.7	1.2
13	2.1	2.5	23	15	68	49	270	236	98	5.0	4.7	1.4
14	2.1	2.0	22	16	58	64	274	344	96	4.2	*3.2	1.3
15	2.0	1.8	22	16	64	80	381	401	84	3.7	2.4	1.3
16	2.1	1.8	21	*17	61	70	526	393	74	3.4	2.0	1.6
17	3.0	2.0	20	19	54	74	526	389	62	3.0	1.7	2.0
18	3.0	2.2	20	19	47	62	450	417	60	2.8	1.6	2.8
19	*2.6	2.2	20	20	43	69	326	381	50	2.8	1.6	2.3
20	2.6	2.1	19	20	45	84	239	334	45	2.6	1.6	2.1
21	2.4	2.0	20	20	48	106	202	373	*43	2.3	1.3	2.0
22	2.4	2.0	23	20	60	124	198	365	36	2.3	1.4	2.1
23	2.3	1.8	24	19	55	188	180	334	33	2.3	1.2	2.1
24	2.3	1.7	25	19	49	134	167	323	29	2.3	1.1	2.1
25	2.3	2.0	24	19	51	110	176	302	25	2.1	1.7	2.0
26	2.3	2.2	23	48	48	93	188	257	22	2.0	1.8	*1.7
27	2.4	2.0	23	34	*43	91	218	225	20	1.8	2.1	1.6
28	2.4	2.2	21	29	42	*84	267	212	18	1.7	1.7	1.8
29	1.8	*2.2	23	30	—	82	323	202	17	1.7	1.8	1.8
30	1.4	2.0	23	31	—	104	354	167	15	1.7	1.7	1.8
31	1.4	—	22	34	—	140	—	173	—	1.4	1.7	—
Total	72.6	458.2	1043	640	1455	2428	9688	9821	2982	190.5	51.4	50.0
Mean	2.34	15.3	33.6	20.6	51.2	78.3	323	317	99.4	6.15	1.66	1.67
Max.	7.0	26	191	48	119	188	553	425	254	24	4.7	2.8
Min.	1.1	1.4	19	14	35	46	167	167	15	1.4	1.1	1.1
Ac-ft	144	910	2,070	1,270	2,850	4,820	19,220	19,480	5,910	378	102	99

Calendar year 1960 : Max 95 Min 0.8 Mean 109 Acre-feet 79,270
Water year 1960-61 : Max 553 Min 1.1 Mean 79.2 Acre-feet 57,250

Peak discharge (base, 1,200 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 7-9, Dec. 28 to Jan. 9, Jan. 11-14, 16, 18, 20-21.

SAN JOAQUIN RIVER BASIN

11-2680. South Fork Merced River near El Portal, Calif.

Location.--Lat 37°39'05", long 119°53'05", in NW 1/4 sec. 29, T.3 S., R.19 E., on right bank 1,400 ft upstream from mouth and 6.2 miles west of El Portal.

Drainage area.--239 sq mi.

Records available.--November 1950 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map).

Average discharge.--10 years, 317 cfs (229,500 acre-ft per year); median of yearly mean discharges, 249 cfs (180,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,720 cfs Dec. 1 (gage height, 7.80 ft); minimum, 2.2 cfs Aug. 26, 27.

1950-61: Maximum discharge, 46,500 cfs Dec. 23, 1955 (gage height, 18.70 ft), from rating curve extended above 2,700 cfs on basis of slope-area measurement at gage height 17.63 ft; minimum, that of Aug. 26, 27, 1961.

Remarks.--Records good. Big Creek ditch diverts up to 50 cfs at times into Fresno River basin. Diversion of 0.5 cfs at Wawona for domestic use and irrigation of golf course.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Oct. 20

Oct. 21 to Sept. 30

4.2	3.8	4.1	2.1	5.2	69
4.3	5.4	4.2	3.3	5.4	103
4.4	7.6	4.3	4.9	5.7	180
4.5	10	4.4	7.0	6.0	290
4.7	18	4.6	14	6.3	430
		4.8	25	6.7	680
		5.0	43		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	9.1	376	33	82	72	258	490	266	21	3.2	3.6
2	5.6	9.1	632	31	80	80	294	*420	290	20	3.3	3.1
3	5.8	10	204	34	101	92	472	472	358	19	3.5	2.9
4	5.8	14	128	33	85	89	652	484	290	20	3.5	2.7
5	5.8	19	98	32	75	85	666	380	258	32	3.5	2.7
6	8.3	27	80	31	72	92	592	330	254	29	3.5	2.7
7	18	31	63	32	74	87	520	335	240	23	3.3	2.6
8	18	27	62	31	69	87	390	400	222	19	3.2	2.5
9	14	22	61	30	69	94	400	420	204	16	3.3	2.5
10	14	20	55	31	80	96	358	460	180	13	3.1	2.3
11	12	18	54	32	156	87	376	390	168	11	2.9	2.3
12	11	30	50	32	243	82	496	326	145	10	2.8	2.5
13	10	121	47	31	153	82	353	294	132	9.1	2.8	2.7
14	10	99	47	31	125	90	362	385	125	8.8	3.1	2.7
15	10	65	47	32	116	142	395	490	112	8.2	*4.6	2.5
16	9.9	51	44	33	125	145	568	490	103	7.6	5.3	2.7
17	9.9	48	43	*33	112	168	631	466	89	6.8	4.4	3.6
18	9.9	50	43	34	99	150	*568	478	80	6.6	3.8	3.9
19	10	55	42	34	90	142	430	514	72	6.2	3.6	6.2
20	*10	49	40	35	87	148	326	415	66	5.7	3.5	6.6
21	10	44	40	35	85	174	278	454	59	5.5	3.2	5.7
22	10	43	41	35	90	184	274	454	*54	5.3	3.2	5.3
23	10	41	44	35	94	266	274	420	48	5.1	3.5	4.9
24	9.7	38	45	34	87	254	229	395	42	4.7	2.9	4.7
25	9.7	36	45	34	83	258	250	390	38	4.6	2.5	5.1
26	10	69	43	102	82	222	254	353	33	4.4	2.5	5.1
27	10	65	42	118	77	222	282	299	30	4.1	2.3	*4.7
28	10	58	41	79	*72	218	326	290	27	3.9	2.5	4.6
29	10	*51	32	66	—	*187	380	258	24	3.8	3.1	4.4
30	10	51	38	79	—	194	400	246	24	3.5	3.9	4.3
31	9.7	—	38	74	—	229	—	222	—	3.3	3.8	—
Total	312.4	1270.2	2665	1336	2763	4518	12054	12220	4033	340.2	103.6	112.1
Mean	10.1	42.3	86.0	43.1	98.7	146	402	394	134	11.0	3.34	3.74
Max.	18	121	632	118	243	266	666	514	358	32	5.3	6.6
Min.	5.3	9.1	32	30	69	72	229	222	24	3.3	2.3	2.3
Ac-ft	620	2,520	5,290	2,650	5,480	8,960	23,910	24,240	8,000	675	305	222

Calendar year 1960 : Max 1,130 Min 4.6 Mean 169 Acre-feet 122,400

Water year 1960-61 : Max 666 Min 2.3 Mean 114 Acre-feet 82,770

Peak discharge (base, 2,000 cfs)--No peak above base.

* Discharge measurement made on this day.

11-2685. Merced River at Bagby, Calif.

Location.--Lat 37°36'40", long 120°07'50", in 3E $\frac{1}{4}$ sec.6, T.4 S., R.17 E., on left bank 800 ft upstream from highway bridge at Bagby and 0.3 mile upstream from Flyaway Gulch.

Drainage area.--912 sq mi.

Records available.--October 1922 to September 1961. Published as "at Horseshoe Bend" November 1922 to September 1931 and as "at Kittridge" October 1931 to September 1947. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 779.52 ft above mean sea level, datum of 1929. Prior to Nov. 24, 1928, water-stage recorder at site 5.0 miles downstream at different datum. Nov. 24, 1928, to Nov. 3, 1947, water-stage recorder at site 3.8 miles downstream at different datum. Nov. 4, 1947, to Nov. 19, 1950, water-stage recorder at present site and datum. Nov. 20, 1950, to Nov. 4, 1951, wire-weight gage at site 800 ft downstream at datum 51.62 ft lower.

Average discharge.--39 years, 1,156 cfs (836,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,750 cfs Apr. 5 (gage height, 4.07 ft); minimum, 16 cfs Sept. 16.

1922-61: Maximum discharge, 92,500 cfs Dec. 23, 1955 (gage height, 26.80 ft), from rating curve extended above 25,000 cfs on basis of change in contents in Lake McClure; minimum, 13 cfs Oct. 5, 1925, site then in use.

Remarks.--Records good. No storage or large diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 1				May 2 to Sept. 30			
0.6	18	2.0	475	0.5	10	1.5	250
.7	28	2.5	825	.6	18	2.0	510
.9	55	3.0	1,330	.8	45	2.5	880
1.2	119	4.0	2,640	1.0	84	3.0	1,350
1.5	221			1.2	138	3.5	1,950

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	26	*422	112	202	205	700	1550	1150	221	40	40
2	18	25	1510	106	217	*221	842	*1500	1140	197	38	38
3	18	28	587	96	270	252	1330	1540	1240	186	33	34
4	18	33	376	99	243	261	2020	1620	1200	221	29	32
5	18	39	306	94	217	261	2280	1370	1220	355	26	28
6	20	50	261	92	217	278	2140	1190	1330	320	24	28
7	*26	68	213	92	221	278	1900	1190	1360	250	29	24
8	42	69	194	94	213	256	1470	1420	1350	201	69	23
9	43	60	182	92	209	278	1400	1520	1290	171	78	22
10	40	54	172	92	209	292	1260	1670	1200	151	63	22
11	40	52	162	92	288	261	1220	1540	1130	*135	49	20
12	44	68	155	92	607	256	1520	1290	1010	126	49	19
13	43	165	148	92	+33	252	1250	1120	907	124	112	18
14	43	256	142	91	366	261	1250	1260	934	115	161	17
15	40	182	142	92	330	382	1270	1590	907	106	*126	17
16	39	142	139	92	371	451	1730	1730	856	102	102	18
17	36	131	134	*92	330	463	2090	1780	808	92	82	19
18	35	131	125	99	296	463	*2080	1790	728	84	69	23
19	34	136	125	99	270	398	1690	1860	699	76	56	23
20	33	139	125	99	247	404	1260	1700	650	69	50	33
21	32	128	119	99	252	463	1030	1780	608	63	45	34
22	30	122	119	102	261	511	964	1940	*559	61	39	38
23	30	119	122	102	288	656	910	1900	524	56	34	40
24	28	114	128	102	261	769	785	1850	468	50	33	40
25	28	112	131	102	247	708	834	1920	428	45	67	40
26	27	179	134	164	247	614	859	1820	400	42	80	39
27	27	230	131	315	230	580	928	1530	385	74	69	*36
28	27	165	128	209	213	587	1030	1470	350	74	63	33
29	27	145	116	179	—	523	1190	1350	310	61	54	30
30	27	148	112	186	—	*511	1320	1250	264	54	50	29
31	27	—	114	194	—	587	—	1020	—	45	45	—
Total	958	3316	6974	3662	7755	12682	40552	48060	25405	3927	1864	857
Mean	30.9	111	225	118	277	409	1,352	1,551	847	127	60.1	28.6
Max.	44	256	1,510	315	607	769	2,280	1,940	1,360	355	161	40
Min.	18	25	112	90	202	205	700	1,020	264	42	24	17
Ac-ft	1,900	6,580	13,830	7,260	15,380	25,150	80,430	95,330	50,390	7,790	3,700	1,700

Calendar year 1960: Max 4,380 Min 18 Mean 670 Acre-feet 486,300

Water year 1960-61: Max 2,280 Min 17 Mean 427 Acre-feet 309,400

Peak discharge (base, 6,000 cfs).--No peak above base.

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2693. Maxwell Creek at Coulterville, Calif.

Location.--Lat 37°42'58", long 120°11'20", in SE¼ sec.34, T.2 S., R.16 E., on Dogtown road bridge, 0.40 mile downstream from Cuneo Creek, and 0.5 mile northeast of town of Coulterville.

Drainage area.--17.0 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,740 ft (from topographic map).

Extremes.--Maximum discharge during year, 26 cfs Dec. 1 (gage height, 3.35 ft); no flow for many days.

1959-61: Maximum discharge, 956 cfs Feb. 8, 1960 (gage height, 5.73 ft), from rating curve extended above 50 cfs; no flow for many days in each year.

Remarks.--No diversion or storage above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	4.2	0.1	0.8	0.5	0.8	0.4	1.6			
2		0	5.8	.1	2.0	.5	.6	.4	1.4			
3		0	1.9	.1	3.1	.5	.5	.4	1.2			
4		0	1.3	.1	1.7	.4	.5	.4	1.1			
5		0	1.1	.1	1.2	.5	.4	.3	1.0			
6		0	.7	.1	.9	1.7	.4	.6	1.0			
7		0	.6	.1	.8	1.8	.3	1.4	.8			
8		0	.6	.1	.7	1.0	.3	.8	.6			
9		0	.4	.1	1.1	1.0	.3	.5	.5			
10		0	.2	*.1	1.1	1.0	.3	.4	.7			
11		0	.2	.2	1.8	.7	.3	.3	.7			
12		0	*.2	.2	3.4	.8	.4	.4	.6			
13		0	.1	.2	1.9	.7	.4	.4	.6			
14		0	.1	.2	1.3	.7	.4	.3	.5			
15		0	.1	.2	1.2	6.0	.3	.3	.4			
16		0	.1	.2	1.4	4.0	.3	.2	.2			
17		0	.2	.1	1.1	7.9	.3	.2	.1			
18		0	.2	.1	.9	4.0	.3	.2	0			
19		0	.2	.1	.9	2.7	.3	.2	0			
20		0	.2	.1	.8	2.2	.4	.2	0			
21		0	.2	.1	.7	1.8	.4	.2	0			
22		0	.3	.2	.7	1.6	1.1	.2	0			
23		0	.3	.3	.7	2.2	1.1	.2	0			
24		0	.3	.3	*.6	*1.8	1.0	.2	0			
25		0	.4	.3	.5	1.6	*.8	*.1	0			
26		1.1	.5	*1.9	.5	1.4	.6	.1	0			
27		.5	.3	1.0	.5	1.4	.6	.1	0			
28		.1	.1	.5	.6	1.3	.5	.4	0			
29		.1	.2	.6	-	1.0	.4	.8	0			
30		.1	.2	.7	-	1.0	.4	1.0	0			
31		-	.2	.6	-	.8	-	1.4	-			
Total	0	1.9	21.4	9.1	32.9	54.5	14.7	13.0	13.0	0	0	0
Mean	0	0.06	0.69	0.29	1.18	1.76	0.49	0.42	0.43	0	0	0
Max.	0	1.1	5.8	1.9	3.4	7.9	1.1	1.4	1.6	0	0	0
Min.	0	0	0.1	0.1	0.5	0.4	0.3	0.1	0	0	0	0
Ac-ft	0	3.8	42	18	65	108	29	26	26	0	0	0
Calendar year 1960: Max 342 Min 0 Mean 3.91 Acre-feet 2,830												
Water year 1960-61: Max 7.9 Min 0 Mean 0.44 Acre-feet 318												

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

615

11-2695. Lake McClure at Exchequer, Calif.

Location.--Lat 37°35'10", long 120°16'05", near center of sec.13, T.4 S., R.15 E., at center of upstream face of Exchequer Dam on Merced River, 1 mile east of Exchequer and 5.5 miles northeast of Merced Falls.

Drainage area.--1,020 sq mi, approximately.

Records available.--April 1926 to September 1930 (daily gage heights; also summary of yearly contents in WSP 881), October 1930 to September 1961.

Gage.--Indicator in powerhouse at foot of dam actuated by float in reservoir and selsyn motor circuit; indicator read every half hour when powerhouse is operating, once daily, at midnight, when not. Datum of gage is at mean sea level (levels by Merced Irrigation District).

Extremes.--Maximum contents during year, 123,800 acre-ft Apr. 19 (elevation, 631.3 ft); minimum, 2,020 acre-ft Nov. 3 (elevation, 466.8 ft).
1926-61: Maximum contents, 290,800 acre-ft Dec. 4, 1950 (elevation, 710.5 ft); practically no storage at times in 1926, 1930-31, 1934.

Remarks.--Reservoir is formed by concrete gravity-type dam completed in 1926; storage began in April 1926. Usable capacity, 280,900 acre-ft between elevations 442.6 ft (bottom of sluice valve) and 707.0 ft (top of spillway gates). Dead storage, 400 acre-ft or less. Water passes through power plant at dam and down Merced River to diversion dam of Merced Irrigation District's main canal. Figures given herein represent total contents.

Cooperation.--Gage-height record, furnished by Merced Irrigation District, obtained in connection with a Federal Power commission project.

Capacity table (elevation, in feet, and contents, in acre-ft)

466	1,950	510	10,200	580	57,000
471	2,440	525	16,000	600	79,900
480	3,520	540	24,300	620	106,700
485	4,340	560	38,600	640	137,800
495	6,200				

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961											
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1	2,500	2,100	8,520	21,600	27,700	43,300	72,100	105,700	109,700	46,200	15,600
2	2,440	2,080	12,000	21,700	28,100	43,800	73,900	104,700	109,100	42,100	15,300
3	2,390	2,020	13,200	21,900	28,800	44,300	76,700	103,900	108,800	38,100	15,000
4	2,350	2,110	14,000	22,100	29,200	44,800	80,700	103,200	108,400	34,000	14,600
5	2,290	2,070	14,700	22,300	29,700	45,200	85,600	102,100	107,900	30,200	14,300
6	2,250	2,130	15,300	22,400	30,100	46,100	88,600	100,300	107,600	26,200	14,000
7	2,250	2,230	15,800	22,600	30,400	46,800	94,100	99,600	107,300	22,300	13,700
8	2,240	2,350	16,100	22,800	30,900	47,200	97,200	99,300	106,700	20,000	13,400
9	2,200	2,430	16,400	22,800	31,400	47,800	100,100	99,600	106,100	20,000	13,200
10	2,200	2,510	16,700	22,900	31,800	48,300	104,000	100,300	105,300	20,000	13,000
11	2,310	2,540	17,000	23,000	32,200	48,800	106,600	100,800	104,200	19,900	12,700
12	2,340	2,660	18,300	23,100	33,500	49,400	109,600	101,000	103,200	19,900	12,500
13	2,360	2,900	17,500	23,200	34,400	49,600	112,200	100,400	101,200	19,800	12,200
14	2,390	3,580	17,800	23,300	35,200	50,100	114,800	100,100	99,000	19,700	12,200
15	2,410	4,020	18,000	23,500	35,800	50,900	116,400	100,500	97,000	19,600	12,100
16	2,420	4,260	18,200	23,600	36,500	52,000	118,200	101,200	94,800	19,400	12,000
17	2,430	4,480	18,400	23,800	37,200	53,200	119,400	101,800	92,500	19,200	11,800
18	2,420	4,720	18,700	23,900	37,800	54,200	122,000	102,500	90,200	19,000	11,600
19	2,400	4,930	18,900	24,100	38,400	55,000	123,800	103,100	87,700	18,800	11,300
20	2,390	5,170	19,100	24,200	38,900	56,100	123,500	103,800	85,000	18,600	11,000
21	2,380	5,380	19,300	24,400	39,300	57,100	122,300	104,600	82,100	18,400	10,700
22	2,370	5,580	19,500	24,600	40,000	58,200	121,100	105,900	79,200	18,200	10,400
23	2,340	5,760	19,700	24,700	40,400	59,600	119,300	107,000	75,700	17,900	10,100
24	2,330	5,940	19,900	24,800	41,000	61,300	117,500	108,200	72,600	17,600	9,870
25	2,310	6,140	20,200	25,100	41,500	63,100	115,400	109,400	69,000	17,400	9,630
26	2,300	6,450	20,400	25,500	42,100	64,400	113,200	110,600	65,400	17,100	9,450
27	2,280	7,000	20,600	25,800	42,400	65,700	111,000	112,000	61,600	16,800	9,270
28	2,250	7,380	20,800	26,200	42,900	67,100	109,200	115,000	58,000	16,600	9,060
29	-	7,700	21,100	26,600	-	68,100	107,800	115,000	54,400	16,400	8,820
30	-	8,000	21,200	27,000	-	69,200	106,600	112,000	50,200	16,100	8,580
31	2,220	-	21,400	27,400	-	70,500	-	110,300	-	15,900	8,320
(†)	468.8	502.4	535.2	544.8	565.1	592.2	619.9	622.4	573.2	524.7	503.7
(‡)	-280	+5,780	+13,400	+6,000	+15,500	+27,600	+36,100	+3,700	-60,100	-34,300	-7,580

Calendar year 1960 * -4,500

Water year 1960-61 * +2,180

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2700. Merced River at Exchequer, Calif.

Location.--Lat 37°34'55", long 120°16'45", on line between secs.13 and 14, T.4 S., R.15 E., on right bank at Exchequer, 0.65 mile downstream from Lake McClure and 5 miles northeast of Merced Falls.

Drainage area.--1,029 sq mi.

Records available.--April 1901 to September 1961. Records for water years 1914-16 incomplete, yearly estimates published in WSP 1315-A. Published as "near Merced Falls" 1901-13.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from topographic map). Apr. 6, 1901, to Nov. 30, 1913, staff gage at site 5 miles downstream at different datum. Nov. 22, 1915, to Apr. 28, 1922, staff gage and Apr. 29 to Oct. 24, 1922, water-stage recorder, at site 1 mile upstream at different datum.

Average discharge.--60 years, 1,325 cfs (959,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,060 cfs July 5 (gage height, 4.50 ft); minimum, 12 cfs Nov. 23.

1901-13, 1915-61: Maximum discharge observed, 47,700 cfs Jan. 31, 1911 (gage height, 23.3 ft, site and datum then in use); no flow for part of Nov. 21, 1901.

Remarks.--Records good. No large diversion above station. Flow regulated by Exchequer power plant and Lake McClure beginning in April 1926 (see preceding page).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 6				July 7 to Sept. 30			
0.1	28	2.0	470	0.2	39	2.0	490
.3	48	3.0	960	.4	61	3.0	990
.6	87	4.0	1,640	.6	91	4.0	1,680
1.0	160	5.0	2,510	1.0	169	5.0	2,510
1.5	290			1.5	314		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	39	38	41	37	35	38	1,910	1,410	2,030	179	*154
2	35	37	46	41	*38	35	39	*1,900	1,380	2,030	179	151
3	36	38	44	*41	38	34	*39	1,900	1,360	2,030	176	149
4	35	*38	44	41	38	34	39	1,900	1,400	2,040	176	145
5	35	38	41	41	37	34	44	1,910	1,410	*2,040	176	145
6	35	39	38	40	37	34	55	1,920	1,460	2,030	176	147
7	34	39	38	40	38	34	55	1,580	1,520	1,940	174	145
8	34	39	40	40	37	34	56	1,450	1,550	1,140	174	143
9	33	40	41	40	39	34	56	1,340	1,590	174	174	141
10	33	37	41	40	39	35	56	1,290	1,610	156	172	139
11	33	37	41	38	40	35	56	1,290	1,650	147	172	48
12	33	38	41	38	40	35	56	1,290	1,650	147	169	47
13	32	39	42	38	39	36	58	1,330	1,700	154	169	47
14	31	39	42	38	38	38	74	1,350	1,780	158	169	47
15	31	37	42	38	38	38	540	1,340	1,810	169	172	47
16	32	35	42	37	38	38	785	1,360	1,800	169	174	47
17	34	39	45	37	38	38	806	1,490	1,840	169	182	47
18	38	41	45	37	38	38	822	1,520	1,850	182	182	47
19	39	39	45	37	38	38	894	1,470	1,850	182	189	47
20	38	39	40	38	36	38	1,430	1,390	1,860	179	197	47
21	37	40	45	37	33	38	1,550	1,390	1,880	176	182	47
22	38	40	39	37	34	38	1,660	1,350	1,920	172	165	47
23	38	37	38	37	34	39	1,730	1,320	1,950	174	160	47
24	38	40	38	37	34	39	1,780	1,320	1,960	*174	158	47
25	37	40	38	37	34	39	1,820	1,310	1,980	172	158	47
26	37	39	38	37	34	40	1,860	1,290	1,980	172	158	46
27	36	38	38	37	34	41	1,950	1,290	1,980	174	158	46
28	44	38	39	37	35	37	1,880	1,290	1,980	174	156	46
29	44	39	40	37	-	37	1,830	1,380	1,980	172	158	46
30	44	41	40	37		38	1,890	1,410	2,020	172	158	43
31	41		41	37		38		1,410		*174	156	
Total	1,121	1,159	1,270	1,188	1,033	1,139	2,394.8	4,569.0	5,211.0	19,172	5,298	2,392
Mean	36.2	38.6	41.0	38.3	36.9	36.7	798	1,474	1,737	618	171	79.7
Max.	44	41	46	41	40	41	1,950	1,920	2,020	2,040	197	154
Min.	31	35	38	37	33	34	38	1,290	1,360	147	156	43
Ac-ft	2,220	2,300	2,520	2,360	2,050	2,260	47,500	90,620	103,400	38,030	10,510	4,740

Calendar year 1960:

Water year 1960-61:

Max 2,010
Min 31

Mean 4.5
Mean 426

Acra-feet 490,700
Acra-feet 308,500

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

617

11-2725. Merced River near Stevinson, Calif.

Location.--Lat 37°22'15", long 120°55'45", in SW 1/4 sec. 36, T.6 S., R.9 E., on right bank 5 miles upstream from mouth and 6 miles northwest of Stevinson.

Drainage area.--1,274 sq mi.

Records available.--October 1940 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Topographic Division). Prior to Aug. 16, 1955, at datum 55.74 ft higher, and Aug. 16, 1955, to Sept. 30, 1959, at datum 54.74 ft higher.

Average discharge.--21 years, 701 cfs (507,500 acre-ft per year).

Extremes.--Maximum discharge during year, 158 cfs Jan. 31 (elevation, 56.41 ft); no flow July 19 to Aug. 21, result of temporary dam below station.

1944-61: Maximum discharge, 13,600 cfs Dec. 5, 1950 (elevation, 74.79 ft, present datum); minimum, that of July 19 to Aug. 21, 1961.

Remarks.--Records good except those for July 19 to Aug. 27, which are fair. Practically entire flow is diverted above station during irrigation season; some return flow enters above. Flow regulated by Lake McClure (see p. 615).

Rating tables, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

(Shifting-control method used Nov. 20 to Feb. 4, Apr. 7, 8, 11-21)

Oct. 1 to May 13		May 14 to Aug. 23		Aug. 24 to Sept. 30	
55.1	21	54.6	15	55.0	24
55.3	34	55.0	31	55.4	48
55.5	55	55.3	51	55.8	75
55.9	103	55.9	112		
56.3	158				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	78	124	119	151	122	79	99	82	24	0	49
2	83	76	123	119	151	111	80	79	70	26	0	51
3	82	73	127	119	148	102	78	67	78	41	0	70
4	72	71	130	117	145	98	68	67	101	25	0	70
5	60	78	131	116	148	94	62	60	111	24	0	53
6	60	93	130	116	147	95	52	67	89	30	0	53
7	70	98	130	116	143	95	*48	120	79	31	0	44
8	72	100	131	117	138	99	41	136	79	25	0	40
9	79	102	131	117	137	100	56	138	86	31	0	41
10	89	99	129	116	136	106	63	141	90	34	0	46
11	85	100	127	113	133	103	*47	106	90	23	0	52
12	82	106	126	115	133	99	38	110	93	22	0	49
13	77	108	123	115	124	104	28	*119	*70	*20	0	38
14	72	110	122	115	119	94	33	117	56	16	0	38
15	80	110	120	116	*126	100	38	110	58	17	0	37
16	86	108	119	115	134	111	41	101	50	22	0	47
17	77	110	117	115	130	*117	31	91	34	25	0	55
18	*66	111	119	115	127	119	26	71	41	16	0	66
19	70	112	119	116	130	123	24	83	47	0	0	*68
20	65	112	120	*117	130	122	28	58	42	0	0	51
21	65	113	*120	120	127	116	26	65	40	0	0	34
22	73	113	120	119	126	115	90	76	29	0	45	29
23	78	113	120	120	127	111	99	90	36	0	24	32
24	85	113	120	117	126	110	116	109	40	*0	*30	41
25	74	*115	120	117	124	119	116	98	49	0	25	46
26	70	116	120	129	123	122	89	86	40	0	30	43
27	68	117	120	134	126	107	72	82	21	0	30	40
28	73	119	120	148	122	96	72	99	23	*0	40	28
29	76	122	119	148	—	99	65	113	27	0	28	25
30	82	123	117	147	—	96	86	114	30	0	43	34
31	83	—	117	152	—	85	—	87	—	0	56	—
Total	2,318	3,119	3,811	3,775	3,731	3,290	1,792	2,959	1,781	452	351	1,370
Mean	74.8	104	123	122	133	106	59.7	95.5	59.4	14.6	11.3	45.7
Max.	89	123	131	152	151	123	116	141	111	41	56	70
Min.	60	71	117	113	119	85	24	58	21	0	0	25
Ac-ft	4,600	6,190	7,560	7,490	7,400	6,530	3,550	5,870	3,530	897	696	2,720

Calendar year 1960 : Max 740 Min 50 Mean 117 Acre-feet 85,250
 Water year 1960-61 : Max 152 Min 0 Mean 78.8 Acre-feet 57,030

* Discharge measurement or observation of no flow made on this day.

Note.--Stage-discharge relation indefinite July 19 to Aug. 21; doubtful gage-height record Aug. 22-27.

SAN JOAQUIN RIVER BASIN

11-2730. Merced River Slough near Newman, Calif.

Location.--Lat 37°21'35", long 120°57'40", in NE 1/4 sec. 3, T.7 S., R.9 E., on left bank 0.1 mile downstream from bridge, 0.2 mile downstream from head of slough between Merced and San Joaquin Rivers, and 4.5 miles northeast of Newman.

Records available.--October 1941 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Topographic Division). Prior to July 31, 1948, at datum 56.44 ft higher and Aug. 1, 1948, to Sept. 30, 1959, at datum 54.44 ft higher.

Average discharge.--20 years, 74.4 cfs (53,860 acre-ft per year).

Extremes.--No flow during year.

1944-61: Maximum daily discharge, 7,770 cfs Apr. 6, 1958; no flow for several months in each year.

Remarks.--No flow since July 1, 1958. Slough flows from Merced River to San Joaquin River, by-passing gaging station on San Joaquin River near Newman.

SAN JOAQUIN RIVER BASIN

619

11-2740. San Joaquin River near Newman, Calif.

Location.--Lat 37°21'02", long 120°58'34", in SW¼ sec. 3, T. 7 S., R. 9 E., on left bank 80 ft downstream from bridge on Hills Ferry road, 300 ft downstream from Merced River and 3.5 miles northeast of Newman.

Drainage area.--9,990 sq mi.

Records available.--April 1912 to September 1961. Prior to Oct. 1, 1937, and subsequent to Oct. 1, 1943, flow that bypassed station at discharges above about 9,000 cfs not included in records.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Topographic Division). Prior to Mar. 3, 1931, staff gage at various sites within 60 ft of bridge and Mar. 3, 1931 to Sept. 30, 1959, water-stage recorder at or near bridge at datum 47.31 ft higher.

Average discharge.--49 years, 2,143 cfs (1,551,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,030 cfs (elevation, 51.02 ft); minimum daily, 50 cfs July 20.

1912-61: Maximum discharge, 33,000 cfs Mar. 7, 1938 (elevation, 65.81 ft, present site and datum), including flow in Merced River Slough; minimum, 15 cfs Aug. 9, 10, 1924.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas. Record for Merced River Slough (see preceding page) shows flow bypassing station.

Rating tables (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used May 17-20)

Oct. 1 to May 20		May 21 to Sept. 30	
47.5	85	47.0	48
48.0	157	47.5	107
49.0	360	48.0	187
50.5	830	48.6	290

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	98	210	213	560	263	225	217	252	126	85	160
2	106	98	225	227	545	251	223	209	243	129	85	157
3	112	99	235	229	551	245	227	204	235	141	85	160
4	112	108	243	227	530	289	227	193	248	144	90	160
5	118	120	235	227	515	249	225	170	267	145	95	150
6	115	130	245	229	500	301	215	185	246	126	100	140
7	123	135	243	231	479	223	193	227	228	120	105	133
8	128	145	235	243	455	223	186	247	211	110	110	126
9	132	150	229	300	434	229	196	241	209	101	109	121
10	132	150	223	408	422	233	205	255	206	110	100	121
11	112	140	223	515	405	213	184	243	204	101	97	126
12	106	135	229	518	395	213	*173	*247	207	*95	93	120
13	99	135	233	494	378	202	151	247	*201	100	91	101
14	95	135	231	464	*355	177	157	243	189	100	91	91
15	106	150	227	437	355	184	162	241	187	95	92	91
16	111	160	217	416	358	189	162	233	174	95	97	89
17	105	165	213	402	338	*202	160	229	149	100	96	99
18	*93	175	193	388	326	207	168	211	141	95	92	100
19	92	180	184	370	317	207	155	211	152	60	91	*106
20	92	190	193	*352	317	217	146	207	137	50	86	112
21	86	195	*191	350	298	209	129	216	133	60	91	*103
22	95	200	191	588	306	204	162	231	134	65	123	91
23	95	200	189	348	309	202	195	241	126	65	100	85
24	102	200	186	311	322	211	225	269	113	75	*101	83
25	95	*202	191	298	328	225	229	279	106	*100	109	89
26	92	207	200	449	322	229	221	276	117	86	113	88
27	88	205	207	599	302	231	193	265	104	80	107	85
28	94	200	233	648	276	225	191	264	101	83	123	85
29	94	200	237	662	-	227	184	269	103	85	133	80
30	97	205	231	666	-	233	186	279	118	85	141	85
31	99	-	223	611	-	227	-	274	-	83	153	-
Total	3,227	4,812	6,745	12,420	10,998	6,940	5,655	7,323	5,241	3,010	3,184	3,337
Mean	104	160	218	401	393	224	188	236	175	97.1	103	111
Max.	132	207	245	666	560	301	229	279	267	145	153	160
Min.	86	98	184	213	276	177	129	170	101	50	8	80
Ac-ft	6,400	9,540	13,380	24,630	21,810	13,770	11,220	14,520	10,400	5,270	6,320	6,620

Calendar year 1960: Max 1,790 Min 86 Mean 263 Acre-feet 190,700
Water year 1960-61: Max 666 Min 50 Mean 200 Acre-feet 144,600

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 5-24, Nov. 27 to Dec. 3, July 12-24, Aug. 1-8, Sept. 3-6, 27-30.

SAN JOAQUIN RIVER BASIN

11-2745. Orestimba Creek near Newman, Calif.

Location---Lat 37°19'09", long 121°07'12", on line between secs. 17 and 20, T.7 S., R.8 E., at left bank pier of county road bridge, 3 miles downstream from Oso Creek and 5 miles west of Newman.

Drainage area---135 sq mi.

Records available---January 1932 to September 1961.

Gage---Water-stage recorder. Datum of gage is 188.86 ft above mean sea level, adjustment of 1929. Prior to Oct. 1, 1958, at site 120 ft downstream at datum 3.00 ft higher.

Average discharge---29 years, 15.2 cfs (11,000 acre-ft per year); median of yearly mean discharges, 7.0 cfs (5,070 acre-ft per year).

Extremes---No flow during year.

1952-61: Maximum discharge, 10,200 cfs Apr. 2, 1958 (gage height, 6.57 ft, site and datum then in use), from rating curve extended above 5,000 cfs; no flow for several months in each year.

Remarks---No flow since Apr. 2, 1960. Observations of no flow generally made once or twice a month. No storage or diversion except for minor stock ponds. Figures for calendar year 1960 are as follows: maximum daily discharge, 264 cfs; minimum, zero; mean, 2.36 cfs; runoff, 1,710 acre-ft.

11-2746.1. Del Puerto Creek tributary No. 2 near Patterson, Calif.

Location---Lat 37°25'25", long 121°20'30", in NE¼SW¼ sec.8, T.6 S., R.6 E., on left bank 0.5 mile downstream from Fall Canyon and 12 miles southwest of Patterson.

Drainage area---0.02 sq mi.

Records available---October 1958 to September 1961.

Gage---Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,020 ft (from topographic map).

Extremes---No flow during year.

1958-61: Maximum discharge, 0.5 cfs Feb. 16, 1959; (gage height, 5.73 ft, from crest-stage gage), on basis of measurement of peak flow through culvert; no flow most of each year.

Remarks---No flow since Feb. 21, 1959. No regulation or diversion above station.

Monthly rainfall, in inches, water year October 1960 to September 1961

November.....	3.1	March.....	1.1
December.....	.3	April.....	.4
January.....	1.6	May.....	.2
February.....	.6		

Total rainfall for water year 1960-61, 7.3 inches

SAN JOAQUIN RIVER BASIN

621

11-2750. Falls Creek near Hetch Hetchy, Calif.

Location.--Lat 37°58'15", long 119°45'45", in SE $\frac{1}{4}$ sec. 3, T.1 N., R.20 E., on right bank in Yosemite National Park, 0.2 mile upstream from Wampana Falls, 0.6 mile upstream from mouth, and 2 miles northeast of Hetch Hetchy.

Drainage area.--45.2 sq mi.

Records available.--October 1915 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to Oct. 1, 1918, published as "near Sequoia."

Gage.--Water-stage recorder. Altitude of gage is 5,350 ft (from topographic map).

Average discharge.--46 years, 141 cfs (102,100 acre-ft per year).

Extremes.--Maximum discharge during year, 488 cfs May 26 (gage height, 4.82 ft); no flow Oct. 1 to Nov. 11, Sept. 3-30.

1915-61: Maximum discharge, 6,660 cfs Nov. 19, 1950, Dec. 23, 1955 (gage height, 9.0 ft, from floodmarks), from rating curve extended above 2,500 cfs on basis of velocity-area studies; no flow at times in many summers.

Remarks.--Records good. No storage or diversion.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by city and county of San Francisco.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.1	0	1.9	1.9	3.0	55
1.2	.1	2.0	2.8	3.5	135
1.4	.2	2.2	6.0	4.0	250
1.6	.5	2.4	12	4.5	380
1.7	.8	2.6	20	5.0	560
1.8	1.2	2.8	34		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1		0	118	13	43	30	139	268	*171	17	0.6	0.1
2		0	73	12	47	36	185	248	210	14	.6	.1
3		0	42	13	47	46	293	243	213	18	.5	0
4		0	37	11	39	50	386	270	218	28	.4	0
5		0	32	11	34	45	438	203	270	28	.4	0
6		0	28	9.4	38	50	386	159	313	22	.4	0
7		0	22	9.4	37	56	*330	173	300	18	.4	0
8		0	19	9.1	36	59	230	*183	293	14	.3	0
9		0	19	8.8	45	64	218	243	268	12	.3	0
10		0	19	8.5	64	60	188	343	233	11	.3	0
11		0	19	9.1	113	59	169	250	220	9.7	.4	0
12		6.1	18	9.7	113	55	245	161	171	9.4	.8	0
13		7.3	19	10	86	59	185	137	159	8.3	.6	0
14		12	19	10	71	*70	169	183	161	7.5	.5	0
15		12	17	10	71	80	193	285	155	6.5	.8	0
16		13	15	11	71	79	310	343	145	5.6	1.0	0
17		17	15	12	58	77	401	386	131	4.8	.9	0
18		28	16	12	47	71	414	414	120	4.0	.8	0
19		21	15	12	41	76	288	365	104	3.5	.7	0
20		17	14	13	44	99	183	333	93	3.2	.6	0
21		17	16	13	48	102	145	404	83	2.7	.6	0
22		*14	19	14	58	104	129	435	71	2.4	.5	0
23		12	20	13	52	169	124	404	62	2.2	.4	0
24		11	20	13	45	135	126	389	53	1.8	*.3	0
25		13	19	13	42	106	139	424	46	1.6	.3	0
26		17	19	26	37	94	139	435	41	1.3	.2	0
27		21	19	31	33	86	151	320	*36	1.2	.2	0
28		22	16	27	32	77	159	295	32	1.1	.2	0
29		21	*15	26	-----	77	185	255	26	1.0	.2	0
30		19	14	32	-----	99	223	188	21	.9	.1	0
31		-----	13	42	-----	120	-----	149	-----	.8	*1	-----
TOTAL	0	300.4	766	464.0	1,492	2,390	6,870	8,888	4,419	261.5	14.4	0.2
MEAN	0	10.0	24.7	15.0	53.3	77.1	229	287	147	8.44	0.46	0.01
MAX	0	28	118	42	113	169	438	435	313	28	1.0	0.1
MIN	0	0	13	8.5	32	30	124	137	21	0.8	0.1	0
AC-FT	0	596	1,520	920	2,960	4,740	13,630	17,630	8,760	519	29	0.4

CALENDAR YEAR 1960: MAX 830 MIN 0 MEAN 101 AC-FT 73,000
 WATER YEAR 1960-61: MAX 438 MIN 0 MEAN 70.9 AC-FT 51,300

Peak discharge (base, 900 cfs).--No peak above base.

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2755. Hetch Hetchy Reservoir at Hetch Hetchy, Calif.

Location.--Lat 37°56'55", long 119°47'10", in NW¼ sec.16, T.1 N., R.20 E., near center of O'Shaughnessy Dam on Tuolumne River at Hetch Hetchy in Yosemite National Park, 1.5 miles downstream from Falls Creek.

Drainage area.--460 sq mi.

Records available.--May 1923 to September 1961. Prior to October 1930 month-end contents, published in WSP 1315A.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by city and county of San Francisco). Prior to Oct. 1, 1927, staff gage at same site and datum.

Extremes.--Maximum contents during year, 208,200 acre-ft June 18 (elevation, 3,721.4 ft); minimum, 18,200 acre-ft Mar. 19, 20 (elevation, 3,553.7 ft).

1923-61: Maximum contents, 369,100 acre-ft Dec. 3, 1950 (elevation, 3,810.4 ft); no contents at times in 1929-31.

Remarks.--Reservoir is formed by concrete gravity-type dam, completed to crest elevation 3,726.5 ft in 1923 and raised to 3,812.0 ft in 1937; storage began Apr. 6, 1923. Ten-foot drum gates were installed on spillway in 1949. Usable capacity, 360,400 acre-ft between elevations, 3,512.0 ft (somewhat above bottom outlet) and 3,806.0 ft (top of drum-type spillway gates) above mean sea level. Water flows down Tuolumne River 15 miles to Early Intake, where part is diverted through Hetch Hetchy aqueduct to Moccasin Creek powerplant. At Moccasin Creek diversion dam, water re-enters Hetch Hetchy aqueduct and flows into Crystal Springs Reservoir, which supplies city of San Francisco. Surplus water is spilled into Don Pedro Reservoir at Red Mountain Bar. Hetch Hetchy Reservoir is main storage unit of Hetch Hetchy water-supply system for San Francisco.

Cooperation.--Water-stage-recorder graph furnished by city and county of San Francisco.

Capacity table, (elevation, in feet, and contents, in acre-feet)

3,553	17,600	3,620	76,500	3,680	146,200
3,560	22,900	3,640	97,000	3,700	175,000
3,580	39,500	3,660	119,900	3,730	222,200
3,600	57,400				

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	182.3	141.5	116.0	85.1	46.9	24.8	20.9	73.4	171.0	192.3	145.0	106.7
2	181.1	140.4	115.8	84.0	45.8	24.2	21.9	75.3	172.8	190.2	143.8	105.8
3	179.9	139.3	115.2	82.6	44.9	23.6	24.3	77.5	174.7	188.4	142.4	104.8
4	178.3	138.2	114.4	81.3	43.7	23.1	27.4	79.7	177.0	187.2	141.2	104.1
5	177.0	137.2	113.7	80.0	42.7	22.5	31.3	81.5	180.2	185.5	139.9	103.4
6	175.9	136.1	112.8	78.7	41.5	22.1	33.7	83.2	184.1	183.7	138.8	102.9
7	174.4	135.1	111.9	77.4	40.5	21.6	36.4	84.6	187.9	181.7	137.6	102.4
8	173.1	134.0	110.9	76.2	39.3	21.2	38.0	86.3	191.6	179.9	136.5	102.2
9	171.7	133.1	110.1	74.9	38.3	20.9	39.7	89.3	195.1	177.7	135.1	101.7
10	170.4	132.1	109.1	73.8	37.5	20.5	40.9	92.5	197.8	175.8	133.6	101.4
11	169.1	131.2	108.3	72.6	37.0	20.1	42.1	94.6	200.3	173.8	132.4	101.1
12	167.7	130.5	107.4	71.2	36.7	19.8	43.9	96.1	202.2	171.7	131.4	100.8
13	166.4	129.8	106.7	70.0	35.9	19.4	44.9	97.3	203.9	169.5	130.4	100.5
14	165.1	129.0	105.7	68.6	35.1	19.0	45.9	99.6	205.8	167.9	129.1	100.0
15	163.6	128.1	104.5	67.5	34.2	18.8	47.4	102.9	207.3	166.9	127.8	99.6
16	162.3	127.6	103.6	66.1	33.7	18.6	50.3	106.6	207.9	165.7	126.4	99.4
17	160.9	126.7	102.5	64.9	33.0	18.3	54.0	110.8	208.1	164.5	125.1	98.9
18	159.6	125.9	101.5	63.7	32.4	18.3	57.5	115.0	208.1	163.2	123.9	98.6
19	158.4	125.0	100.5	62.3	31.7	18.2	59.9	118.8	207.9	162.0	122.3	98.3
20	157.0	124.3	99.2	61.1	30.8	18.2	61.2	122.7	207.6	160.6	121.2	97.9
21	155.6	123.5	98.2	59.9	30.1	18.2	62.2	127.8	207.0	159.4	119.8	97.6
22	154.3	122.5	96.9	57.6	29.5	18.3	63.1	133.0	206.2	158.2	118.4	97.1
23	152.9	121.7	95.7	57.2	28.8	18.4	63.8	138.4	205.1	157.0	117.6	96.7
24	151.7	120.7	94.6	56.0	28.2	19.2	64.4	143.8	203.9	155.6	116.5	96.4
25	150.4	119.8	93.4	54.9	27.6	19.8	65.1	149.4	202.7	154.3	115.5	96.0
26	148.9	119.2	92.4	53.7	26.9	20.0	65.8	154.5	201.3	153.1	114.0	95.4
27	147.6	118.4	91.0	52.7	26.2	20.1	66.6	158.4	199.7	151.7	112.8	94.9
28	146.3	117.7	89.9	51.4	25.5	20.2	67.8	162.3	197.9	150.5	111.5	94.2
29	145.0	116.9	88.6	50.3	-	20.1	69.2	165.5	196.2	149.1	110.2	93.5
30	143.8	116.0	87.6	49.0	-	20.1	71.0	167.6	194.3	147.7	109.0	92.9
31	142.6	-	86.4	47.9	-	20.4	-	169.5	-	146.5	107.9	-
(+)	3,677.3	3,656.7	3,629.9	3,589.6	3,563.2	3,556.7	3,614.3	3,696.3	3,712.6	3,680.2	3,649.7	3,636.1
(*)	-41,200	-26,600	-29,600	-38,500	-22,400	-3,100	+50,600	+98,500	+24,800	-47,800	-38,600	-15,000

Calendar year 1960: * -8,000

Water year 1960-61: * -90,900

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

623

11-2765. Tuolumne River near Hetch Hetchy, Calif.

Location.--Lat 37°56'15", long 119°47'50" in SW¼SE¼ sec.17, T.1 N., R.20 E., in Yosemite National Park, on left bank 1 mile downstream from O'Shaughnessy Dam at Hetch Hetchy and 2.5 miles downstream from Falls Creek.

Drainage area.--462 sq mi.

Records available.--October 1910 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Hetch Hetchy damsite, near Sequoia" 1910-14 and as "below Hetch Hetchy damsite, near Sequoia" 1915-18.

Gage.--Water-stage recorder. Altitude of gage is 3,430 ft (from topographic map). Prior to Jan. 1, 1915, at site 1 mile upstream, at damsite, at different datum.

Average discharge.--51 years, 999 cfs (723,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,280 cfs July 13 (gage height, 7.40 ft); minimum daily, 188 cfs Sept. 7-11. 1910-61: Maximum discharge, 12,900 cfs June 1, 1943 (gage height, 13.90 ft); minimum daily, 1.3 cfs Nov. 2, 3, 1923.

Remarks.--Records excellent. Flow regulated by Hetch Hetchy Reservoir beginning in April 1923 (see preceding page). No diversion above station.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by city and county of San Francisco.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.3	188	6.0	730
4.0	292	7.0	1,090
5.0	480	8.0	1,640

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	724	595	*545	721	*703	512	480	514	661	1,240	745	610
2	709	575	532	721	706	510	508	520	673	1,240	742	520
3	700	572	514	715	691	508	534	520	673	1,230	739	476
4	697	572	534	721	706	504	548	520	679	1,220	739	476
5	706	570	570	721	715	504	548	476	688	1,240	736	402
6	706	570	582	715	709	502	*528	456	700	1,240	736	192
7	*706	555	580	718	703	498	494	458	721	1,230	733	188
8	706	538	578	721	712	496	480	484	721	1,220	733	188
9	703	536	575	715	715	494	504	508	706	1,220	739	188
10	706	536	575	712	709	492	538	514	730	1,220	745	188
11	706	536	572	709	709	490	558	518	724	1,220	745	188
12	706	532	560	709	709	488	560	486	706	1,220	742	202
13	706	526	548	712	712	486	570	466	727	1,260	739	209
14	703	514	575	721	706	504	532	468	721	950	739	*209
15	709	500	622	721	661	516	520	486	903	721	736	210
16	709	500	646	715	585	514	526	502	1,170	715	736	210
17	706	514	643	709	582	488	536	504	1,240	712	733	209
18	706	520	640	706	580	474	526	510	1,240	742	745	209
19	706	520	649	712	575	375	524	516	1,240	769	751	219
20	709	518	664	715	600	412	528	444	1,250	754	742	226
21	709	518	688	715	608	496	494	466	1,250	751	736	226
22	709	516	697	712	575	496	478	494	1,240	745	736	224
23	709	516	715	709	572	498	480	502	1,240	739	736	224
24	709	514	724	715	550	486	514	504	1,240	736	733	223
25	706	514	721	718	524	470	534	510	1,230	727	*736	223
26	706	514	718	694	522	474	536	488	1,220	721	745	291
27	703	514	715	700	518	476	538	450	*1,240	718	742	349
28	688	512	709	706	534	476	526	468	1,270	730	739	366
29	676	510	*718	718	—	476	500	496	1,260	745	736	376
30	676	514	721	721	—	476	502	498	1,260	748	733	375
31	655	—	718	706	—	476	—	550	—	745	673	—
Total	21,775	15,941	19,548	22,123	17,891	15,067	15,644	15,296	29,323	29,468	22,840	23,96
Mean	702	531	631	714	639	486	521	493	977	951	737	280
Max.	724	595	724	721	715	516	570	550	1,270	1,260	751	610
Min.	655	500	514	694	518	375	478	444	661	712	673	188
Ac-ft	43,190	31,620	38,770	43,880	35,490	29,880	31,030	30,340	58,160	58,450	45,300	16,650

Calendar year 1960: Max 1,840 Min 496 Mean 672 Acres-feet 487,800
 Water year 1960-61: Max 1,270 Min 188 Mean 639 Acres-feet 462,800

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2772. Cherry Lake near Hetch Hetchy, Calif.

Location.--Lat 37°58'30", long 119°53'45", in NW¼ sec.5, T.1 N., R.19 E., on upstream face of Cherry Valley Dam on Cherry Creek, 4.2 miles upstream from Eleanor Creek, 7 miles north of Early Intake, and 7.3 miles northwest of Hetch Hetchy.

Drainage area.--117 sq mi.

Records available.--August 1956 to September 1961. Prior to October 1959, published as Lake Lloyd near Hetch Hetchy.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by city and county of San Francisco).

Extremes.--Maximum contents during year, 81,800 acre-ft June 8 (elevation, 4,576.6 ft); minimum, 140 acre-ft Mar. 3 (elevation, 4,457.1 ft).

1956-61: Maximum contents, 269,300 acre-ft July 1-3, 1957 (elevation, 4,700.6 ft); minimum, that of Mar. 3, 1961.

Remarks.--Reservoir is formed by a rock fill dam completed in 1956; storage began in December 1955. Usable capacity, 268,180 acre-ft between elevations 4,430 ft (bottom of sluice gates) and 4,700 ft (top of spillway gates) above mean sea level. Additional storage of 70 acre-ft is not available for release. Water is released down Cherry Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Unmeasured diversion from Lake Eleanor into Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake through tunnel to Cherry powerhouse near mouth of Cherry Creek began on Aug. 1, 1960.

Cooperation.--Record of gage heights furnished by city and county of San Francisco.

Capacity table, (elevation, in feet, and contents, in acre-feet)

4457	140	4500	6,400
4460	200	4510	12,400
4470	500	4530	29,700
4480	1,100	4550	50,600
4490	2,800	4590	98,900

Contents, in thousands of acre-feet, at 8 a.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69.3	49.1	34.6	21.8	7.72	0.16	20.2	51.2	74.5	68.6	33.3	28.3
2	(a)	48.4	35.7	(a)	7.36	1.6	20.9	51.8	75.0	67.6	32.2	28.0
3	68.1	47.8	35.4	20.8	7.06	1.4	22.4	52.3	75.5	66.9	31.1	28.0
4	67.4	47.1	35.2	20.2	6.70	3.6	24.4	52.9	76.1	(a)	30.0	(a)
5	66.9	46.5	35.1	19.8	6.28	.72	26.7	53.2	77.2	64.7	29.0	28.0
6	66.2	46.1	34.5	19.3	5.92	.98	28.8	53.2	77.9	63.4	28.1	2.78
7	65.6	45.8	34.0	18.8	5.60	1.30	30.5	53.5	78.8	62.1	27.7	2.76
8	(a)	(a)	33.5	18.4	5.16	1.73	31.8	54.3	79.6	60.9	26.6	2.74
9	64.2	44.6	32.8	18.0	4.80	2.22	32.9	54.8	80.0	59.9	25.6	2.72
10	63.7	43.8	32.2	17.5	4.64	2.68	33.8	55.6	80.5	59.2	24.5	2.70
11	63.0	(a)	31.9	17.0	4.40	3.19	34.5	56.7	81.0	57.9	23.4	2.68
12	(a)	42.5	31.6	16.5	5.32	3.64	35.4	57.2	81.7	56.5	22.4	2.68
13	61.4	42.3	31.1	15.9	(a)	4.04	36.2	57.4	81.8	55.3	21.5	2.68
14	(a)	42.2	30.6	15.4	5.08	4.64	37.0	57.5	81.8	54.1	21.1	2.68
15	60.0	41.6	30.0	14.9	4.92	5.28	37.7	58.3	81.8	52.5	20.2	2.68
16	59.3	41.1	29.4	14.4	4.32	6.00	38.8	59.0	81.7	51.4	19.0	2.68
17	58.7	40.7	28.9	13.8	3.40	6.82	40.4	60.0	81.0	50.6	17.8	2.74
18	58.1	40.1	28.6	13.3	3.25	7.54	42.2	61.1	80.5	49.3	16.8	2.80
19	57.3	39.8	28.2	12.8	3.04	8.26	43.6	62.3	80.4	48.0	15.7	2.80
20	56.5	39.4	27.7	12.2	2.83	8.92	44.3	63.3	79.7	46.7	14.8	2.80
21	55.9	39.2	27.2	11.7	2.60	9.88	44.7	64.7	78.8	45.4	14.2	2.80
22	55.1	38.7	26.7	11.4	2.46	10.7	45.0	66.3	77.9	44.0	13.1	2.78
23	54.6	38.2	26.3	11.0	2.30	11.9	45.5	67.9	77.1	42.9	12.1	2.78
24	54.0	(a)	25.7	10.5	1.94	13.3	46.0	69.0	76.0	42.1	11.1	2.78
25	53.3	37.2	25.3	10.1	1.52	14.6	46.3	70.3	75.1	39.9	10.1	2.78
26	52.5	36.7	(a)	9.70	1.10	15.5	46.7	71.6	74.5	39.7	8.92	2.74
27	51.8	36.3	24.8	9.52	.86	16.5	47.3	72.7	73.4	38.6	7.96	2.72
28	51.4	36.2	24.3	9.10	3.8	17.3	48.0	73.4	72.2	37.4	7.42	2.72
29	50.8	35.8	23.6	8.68	-	17.9	49.0	74.2	71.1	36.2	6.12	2.83
30	50.3	35.3	23.0	8.32	-----	18.6	50.1	74.2	70.0	35.1	5.08	2.89
31	49.7	-----	22.3	8.02	-----	19.5	-----	74.2	-----	34.4	3.91	-----
(f)	4,549.2	4,535.5	4,522.0	4,502.7	4,466.0	4,518.9	4,549.5	4,570.5	4,566.9	4,534.7	4,493.7	4,490.3
(*)	-20,300	-14,400	-13,000	-14,280	-7,640	+19,120	+30,600	+24,100	-4,200	-35,600	-30,490	-1,020

Calendar year 1960: † +12,420

Water year 1960-61: ‡ -67,110

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

a No elevation record.

SAN JOAQUIN RIVER BASIN

625

11-2773. Cherry Creek below Cherry Valley Dam, near Hetch Hetchy, Calif.

Location.--Lat 37°58'04", long 119°54'59", in SW¼ sec.5, T.1 N., R.19 E., on right bank 0.7 mile downstream from Cherry Valley Dam, 3.5 miles upstream from Eleanor Creek, 6.7 miles north of Early Intake, and 7.2 miles west of Hetch Hetchy.

Drainage area.--118 sq mi.

Records available.--November 1956 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 4,337.08 ft above mean sea level (levels by city and county of San Francisco).

Extremes.--Maximum discharge during year, 446 cfs Mar. 7 (gage height, 5.62 ft); minimum daily, 2.3 cfs Apr. 19.
1956-61: Maximum discharge, 3,830 cfs Apr. 25, 1958 (gage height, 9.95 ft); minimum daily, 1.6 cfs Apr. 10, 1957.

Remarks.--Records good. Flow regulated by Cherry Lake (see preceding page). Diversion between Lake Eleanor and Cherry Lake began Mar. 6, 1960. Diversion from Cherry Lake to Cherry powerhouse began Aug. 1, 1960.

Cooperation.--Water-stage-recorder graph and five discharge measurements furnished by city and county of San Francisco.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

2.6	2.0	3.0	11
2.7	3.5	3.2	20
2.8	5.5	3.4	33
2.9	8.0		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	4.5	6.5	5.1	4.5	3.5	5.5	4.9	7.0	11	13	14
2	4.1	4.5	5.3	5.1	4.9	4.7	5.5	4.9	7.0	11	13	14
3	*4.1	4.9	4.9	4.9	4.7	5.5	5.5	4.9	7.0	11	13	13
4	4.1	4.7	4.5	4.9	4.5	6.0	5.5	5.1	6.8	13	13	11
5	4.1	4.7	4.5	4.9	4.5	6.2	5.5	5.8	7.0	13	13	11
6	4.7	4.9	4.3	4.9	4.5	6.5	5.5	6.2	7.0	13	12	11
7	4.3	4.7	4.3	4.9	4.5	27	5.5	6.2	7.0	12	12	11
8	4.3	4.7	4.3	4.9	4.5	6.8	5.3	6.2	7.0	12	12	11
9	4.3	4.5	4.3	4.9	4.5	6.8	5.1	6.2	7.2	13	11	11
10	4.3	4.5	4.3	4.9	4.5	6.8	5.1	6.2	7.2	13	11	11
11	4.3	4.9	4.3	4.7	5.1	6.5	5.1	6.2	7.5	13	13	11
12	4.5	5.1	4.3	4.7	4.7	6.5	5.1	6.2	7.5	13	10	11
13	4.5	5.1	4.1	4.7	4.7	6.8	*5.1	6.2	7.5	13	10	11
14	4.5	4.9	4.1	4.7	4.5	6.8	4.9	6.2	7.2	13	11	11
15	4.5	4.9	4.1	4.7	4.9	7.2	4.5	6.2	7.2	13	13	11
16	4.5	4.9	4.1	4.7	4.5	7.2	3.7	6.2	7.2	13	13	12
17	4.7	4.7	4.1	4.7	4.5	5.5	3.4	6.2	7.2	13	12	12
18	4.9	4.9	4.1	4.7	4.5	3.9	3.4	6.2	7.2	13	11	12
19	4.9	4.9	4.1	4.7	4.5	3.7	2.3	6.2	7.2	13	11	12
20	4.9	4.7	*4.1	4.5	4.5	3.9	2.4	6.5	7.2	13	12	12
21	4.7	4.7	4.1	4.5	4.5	4.3	5.1	6.5	7.2	13	13	12
22	4.9	4.7	4.1	4.5	4.5	5.1	6.0	6.5	7.2	13	12	12
23	4.9	4.7	5.1	4.5	4.3	5.3	5.8	6.5	7.2	13	12	12
24	4.9	4.5	7.2	4.5	4.3	5.3	5.8	6.5	7.2	13	*11	12
25	4.7	5.1	7.2	4.5	4.3	5.3	4.9	6.5	7.2	13	11	12
26	4.7	4.9	7.2	4.9	4.3	5.3	4.5	6.5	7.2	13	11	12
27	4.7	4.9	7.2	4.5	4.1	5.5	5.5	6.5	7.2	13	11	12
28	4.7	4.7	7.2	4.5	4.1	5.3	5.3	6.5	*7.0	13	11	12
29	4.7	4.5	7.2	4.5	-	5.3	5.1	6.8	7.0	13	12	12
30	4.7	4.3	6.0	4.5	-	5.3	4.9	6.8	9.5	13	14	12
31	4.5	5.1	5.1	4.5	-	5.3	-	6.8	-	13	14	-
Total	143.4	142.6	156.2	146.1	126.4	195.1	146.8	191.3	217.0	395	371	353
Mean	4.63	4.75	5.04	4.71	4.51	6.29	4.89	6.17	7.23	12.7	12.0	11.8
Max.	6.8	5.1	7.2	5.1	5.1	27	6.0	6.8	9.5	13	14	14
Min.	4.1	4.3	4.1	4.5	4.1	3.5	2.3	4.9	6.8	11	10	11
Ac-ft	284	283	310	290	251	387	291	379	430	783	736	700
(†)	19,900	17,730	18,330	17,570	19,220	1,490	22,480	34,590	30,170	36,660	31,250	272

Calendar year 1960:

Max 1.810

Min 2.2

Mean 168

Acre-feet 122,000

† -

Water year 1960-61:

Max 27

Min 2.3

Mean 7.08

Acre-feet 5,120

† 249,700

* Discharge measurement made on this day.

† Diversion, in acre-feet, to Cherry powerhouse, furnished by city and county of San Francisco.

• No gage-height record.

SAN JOAQUIN RIVER BASIN

11-2775. Lake Eleanor near Hetch Hetchy, Calif.

Location.--Lat 37°58'30", long 119°52'45", in NW¹/₄ sec. 3, T.1 N., R.19 E., on downstream side of dam on Eleanor Creek, 720 ft from left bank, 1.7 miles upstream from Miguel Creek, and 5.5 miles northwest of Hetch Hetchy.

Drainage area.--79 sq mi, approximately.

Records available.--June 1918 to September 1961. Prior to October 1930, published in WSP 1315-A. Published as "near Sequoia " 1919-20.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by city and county of San Francisco). Prior to Oct. 1, 1927, staff gage on upstream side of dam at same site and datum.

Extremes.--Maximum contents during year, 13,500 acre-ft Apr. 5 (elevation, 4,645.9 ft); minimum not determined.

1919-61: Maximum contents, 31,000 acre-ft Dec. 11, 1937, from capacity table then in use (elevation, 4,663.4 ft); no usable contents at times in 1921, 1929-30, 1956-60.

Remarks.--Reservoir is formed by multiple-arch dam completed in 1918; storage began June 23, 1918. Usable capacity, 26,100 acre-ft between elevations 4,620.9 ft (natural outlet of old lake) and 4,660.0 ft (top of 5-foot flashboards) above mean sea level. Water is released down Eleanor Creek for power development and domestic supply as part of Hetch Hetchy system of city and county of San Francisco. Figures given herein represent usable contents.

Cooperation.--Water-stage-recorder graph furnished by city and county of San Francisco.

Capacity table (elevation, in feet, and contents, in acre-feet)

4,626	550	4,634	4,700	4,642	10,300
4,628	1,480	4,636	5,960	4,644	11,900
4,630	2,450	4,638	7,330	4,646	13,500
4,632	3,580	4,640	8,710		

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961											
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	2,260	1,240	2,960	5,680	7,610	11,700	12,400	12,600	12,200	11,300	9,100
2	2,210	1,190	3,520	5,750	7,880	11,700	12,700	12,500	12,300	11,300	9,020
3	2,210	1,190	3,800	5,750	8,090	11,700	13,100	12,500	12,400	11,300	8,870
4	2,160	1,140	4,030	5,820	8,230	11,800	13,400	12,400	12,300	11,200	8,710
5	2,110	1,140	4,140	5,820	8,360	11,900	13,400	12,400	12,300	11,200	8,640
6	2,060	1,090	4,250	5,890	8,500	11,900	13,200	12,400	12,400	11,200	8,570
7	2,010	1,090	4,310	5,890	8,570	11,900	13,000	12,500	12,400	11,200	8,430
8	2,010	1,040	4,370	5,890	8,710	11,900	12,900	12,600	12,300	11,200	8,360
9	1,970	1,040	4,420	5,960	8,950	12,000	12,700	12,600	12,300	11,200	8,290
10	1,920	1,000	4,480	5,960	9,260	12,000	12,600	12,700	12,300	11,100	8,230
11	1,920	1,000	4,540	6,020	10,100	12,000	12,500	12,700	12,200	11,100	8,160
12	1,870	1,040	4,590	6,020	10,600	12,000	12,500	12,500	12,100	11,100	8,090
13	1,820	1,090	4,650	6,020	10,900	12,000	12,500	12,400	12,100	11,000	8,090
14	1,820	1,090	4,700	6,090	11,300	12,000	12,400	12,400	12,100	11,000	8,020
15	1,770	1,140	4,700	6,090	11,600	12,100	12,500	12,400	12,000	10,900	7,950
16	1,720	1,140	4,760	6,160	11,700	12,100	12,600	12,400	12,000	10,900	7,880
17	1,670	1,190	4,820	6,160	11,800	12,200	12,700	12,400	12,000	10,900	7,810
18	1,670	1,330	4,820	6,230	11,800	12,100	12,700	12,500	11,900	10,900	7,740
19	1,620	1,380	4,870	6,230	11,800	12,100	12,600	12,500	11,900	10,800	7,680
20	1,620	1,430	4,930	6,300	11,800	12,200	12,400	12,600	11,800	10,700	7,680
21	1,580	1,480	4,990	6,300	11,900	12,300	12,400	12,600	11,800	10,700	7,610
22	1,530	1,530	5,040	6,370	11,900	12,400	12,400	12,700	11,700	10,600	7,610
23	1,530	1,580	5,160	6,370	11,900	12,600	12,400	12,600	11,600	10,600	7,540
24	1,480	1,580	5,210	6,440	11,900	12,600	12,400	12,600	11,600	10,500	7,470
25	1,430	1,620	5,340	6,440	11,900	12,500	12,400	12,600	11,600	10,300	7,400
26	1,380	1,670	5,410	6,640	11,800	12,400	12,400	12,600	11,500	10,100	7,330
27	1,380	1,770	5,480	6,780	11,800	12,400	12,500	12,500	11,400	9,980	7,260
28	1,330	1,820	5,480	6,920	11,700	12,300	12,500	12,400	11,400	9,740	7,260
29	1,330	1,920	5,540	7,060	---	12,200	12,600	12,400	11,300	9,580	7,260
30	1,290	1,960	5,610	7,190	---	12,200	12,600	12,200	11,300	9,420	7,190
31	1,240	---	5,680	7,400	---	12,300	---	12,200	---	9,260	7,190
(†)	4,627.5	4,629.0	4,635.6	4,638.1	4,643.8	4,644.5	4,644.9	4,644.4	4,643.3	4,640.7	4,637.8
(‡)	-1,060	+720	+3,720	+1,720	+4,300	+600	+300	-400	-900	-2,040	-2,070

Calendar year 1960..... +5,680

Water year 1960-61..... -1,480

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

627

11-2780. Eleanor Creek near Hetch Hetchy, Calif.

Location.--Lat 37°58'10", long 119°52'50", in SW¼ sec.3, T.1 N., R.19 E., in Yosemite National Park, on right bank 0.5 mile downstream from Lake Eleanor Dam, 1.1 miles upstream from Miguel Creek, and 5.5 miles northwest of Hetch Hetchy.

Drainage area.--80 sq mi, approximately.

Records available.--October 1909 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Sequoia" 1910-18.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,500 ft (from topographic map). November 1909 to November 1915, staff gage and water-stage recorder at site 1 mile upstream at different datum.

Average discharge.--50 years (1909-59), 223 cfs (161,400 acre-ft per year), prior to diversion to Cherry Lake.

Extremes.--Maximum discharge during year, 149 cfs Sept. 6-9 (gage height, 2.86 ft); minimum daily, 2.9 cfs Dec. 22.
1909-61: Maximum discharge, 11,700 cfs Nov. 19, 1950 (gage height, 14.95 ft), from rating curve extended above 2,000 cfs on basis of velocity-area studies; no flow at times in 1910, 1930-31, 1933, 1956.

Remarks.--Records good. Flow regulated by Lake Eleanor beginning in 1918 (see preceding page). Diversion from Lake Eleanor to Cherry Lake began in March 1960.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by city and county of San Francisco.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.3	2.6	2.0	38
1.4	5.4	2.3	67
1.5	10	2.6	107
1.7	20	3.0	180

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	17	20	4.8	5.1	5.1	5.4	6.3	4.6	12	16	14
2	17	17	20	4.8	5.4	5.4	4.8	6.3	4.6	13	16	14
3	17	18	19	4.8	5.4	5.9	4.8	6.3	4.6	13	16	14
4	*17	18	19	4.8	5.4	5.4	4.8	6.3	4.6	14	16	14
5	17	18	19	4.8	5.4	5.4	4.8	6.3	4.6	14	16	57
6	17	18	18	4.8	5.4	5.4	4.8	6.3	4.6	14	16	121
7	17	18	18	4.8	5.4	5.9	4.8	5.4	4.8	14	15	149
8	17	18	18	4.8	5.4	5.9	4.8	4.8	4.8	15	15	149
9	17	18	18	4.8	5.4	6.3	4.8	4.8	4.8	14	15	149
10	17	18	18	4.6	6.3	6.3	4.8	4.8	4.8	13	15	147
11	17	18	18	4.6	7.2	6.3	4.8	5.1	4.8	14	15	145
12	17	18	19	4.6	6.8	6.8	4.8	5.1	4.8	14	16	145
13	17	18	19	4.6	6.8	5.9	*5.1	5.4	4.8	16	15	*143
14	17	18	19	4.6	7.2	6.8	5.1	5.9	4.6	16	15	145
15	17	18	19	4.6	6.8	7.2	5.1	5.9	4.6	16	15	145
16	17	18	19	4.6	5.9	7.2	5.1	5.4	4.6	16	15	145
17	17	18	19	4.3	6.3	7.2	5.1	5.9	4.6	16	15	143
18	17	18	19	4.3	6.3	7.2	5.1	5.9	4.8	*16	15	143
19	17	18	19	4.3	6.3	7.2	5.1	5.9	4.8	16	15	145
20	17	18	19	4.3	5.4	6.8	5.1	5.9	4.8	16	15	147
21	17	18	8.8	4.3	5.4	6.8	5.1	4.8	4.8	16	15	147
22	17	18	2.9	4.6	5.9	6.3	5.4	4.8	4.8	16	15	147
23	17	18	4.0	4.6	5.4	5.9	5.4	4.8	4.8	16	15	145
24	17	18	4.8	4.6	5.9	5.9	5.9	4.8	4.8	16	15	143
25	17	18	4.6	4.8	5.1	6.3	5.9	4.6	4.8	16	15	145
26	18	18	4.6	5.1	5.1	6.3	5.9	4.6	4.8	16	15	69
27	18	18	4.6	5.1	5.1	6.8	5.9	4.6	4.8	16	15	18
28	18	18	4.6	5.1	5.1	6.3	5.9	4.3	*4.8	16	15	17
29	18	18	4.6	5.1	—	5.9	5.9	*4.6	4.8	16	15	16
30	18	18	4.8	5.1	—	5.4	6.3	4.6	8.9	16	15	17
31	17	—	4.8	5.1	—	5.4	—	4.6	—	16	15	—
Total	532	538	429.1	146.1	162.8	192.9	156.6	163.1	146.1	468	472	1138
Mean	17.2	17.9	13.8	4.71	5.81	6.22	5.22	5.33	4.87	15.1	15.2	105
Max.	18	18	20	5.1	7.2	7.2	6.3	6.3	8.9	16	16	149
Min.	17	17	2.9	4.3	5.1	5.1	4.8	4.3	4.6	12	15	14
Ac-ft	1,060	1,070	851	290	323	383	311	327	290	928	936	6,220
Calendar year 1960:				Max 498	Min 2.9	Mean 67.9		Acres-feet 49,280				
Water year 1960-61:				Max 149	Min 2.9	Mean 17.9		Acres-feet 12,990				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2782. Cherry Creek Canal near Early Intake, Calif.

Location.--Lat 37°53'36", long 119°57'15", in S½ sec.36, T.1 N., R.18 E., on left bank 1.3 miles northeast of Early Intake and 10 miles southwest of Hetch Hetchy.

Records available.--April 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 2,700 ft (from topographic map).

Extremes.--1956-61: Maximum daily discharge, 194 cfs July 30, 1959; minimum daily, 0.7 cfs Dec. 28-30, 1960.

Remarks.--Records good. Canal diverts from left bank of Cherry Creek near Early Intake for power development at Early Intake as part of Hetch Hetchy system of city and county of San Francisco.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by city and county of San Francisco.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	19	17	0.9	6.8	6.3	22	9.3	10	11	13	12
2	21	19	28	1.0	6.8	*6.3	20	*8.6	10	12	13	12
3	20	20	28	2.0	6.8	6.3	17	8.4	10	12	13	12
4	*20	21	25	2.8	6.6	6.3	16	8.4	10	12	13	12
5	20	20	21	2.8	6.0	6.3	16	8.4	10	12	13	28
6	22	22	20	2.8	5.7	12	16	8.4	10	12	13	97
7	21	21	20	2.8	2.5	12	15	8.4	10	12	13	143
8	20	20	20	2.8	2.7	11	15	11	10	12	13	145
9	20	18	20	2.8	5.7	11	14	13	10	12	13	145
10	20	*18	20	2.9	4.9	11	11	*12	10	12	13	144
11	20	18	20	2.9	6.3	11	9.2	12	10	12	13	143
12	20	20	19	2.9	6.3	11	9.2	12	10	12	13	143
13	20	21	17	2.9	6.3	12	*9.2	12	10	12	13	*142
14	20	22	17	2.9	6.3	13	9.2	12	10	12	13	142
15	20	21	17	2.9	6.2	17	9.2	12	10	12	13	142
16	19	18	17	2.5	6.5	22	9.3	12	10	12	12	142
17	19	18	17	2.4	6.5	24	9.3	12	10	13	12	142
18	19	18	17	2.5	6.5	22	9.3	12	10	13	13	139
19	19	18	17	2.6	6.5	20	9.2	12	10	13	13	138
20	19	18	17	2.6	6.5	19	9.2	12	9.9	13	13	138
21	19	17	*17	2.6	6.5	19	6.0	12	9.4	13	11	138
22	19	16	5.8	2.6	6.5	17	3.7	12	9.6	13	11	137
23	19	16	2.7	2.5	6.3	19	3.7	11	9.8	13	11	137
24	19	16	5.7	2.5	6.3	20	7.8	11	9.8	13	11	137
25	19	16	5.6	5.1	6.3	20	11	11	9.6	13	11	137
26	19	17	5.4	15	6.3	20	11	11	9.6	13	11	103
27	19	17	2.7	13	6.3	24	11	11	9.6	13	11	24
28	20	16	.7	5.9	6.3	26	11	11	*9.6	13	12	22
29	19	16	.7	5.9	-	26	11	*10	9.2	13	12	22
30	19	16	.7	6.5	23	23	11	9.9	9.2	13	12	22
31	19	16	.8	6.8	23	23	10	10	9.2	13	12	22
Total	513	553	4418	1191	1692	4985	3415	3558	2953	386	383	3040
Mean	19.8	18.4	14.3	3.84	6.04	16.1	11.4	10.8	9.84	12.5	12.4	101
Max.	24	22	28	15	6.8	26	22	13	10	13	13	145
Min.	19	16	0.7	0.9	2.5	6.3	3.7	8.4	9.2	11	11	12
Ac-ft	1,220	1,100	876	236	336	989	677	666	586	766	760	6,030

Calendar year 1960: Max 187 Min 0.7 Mean 102 Acre-feet 74,090
 Water year 1960-61: Max 145 Min 0.7 Mean 19.7 Acre-feet 14,240

* Discharge measurement made on this day.

11-2783. Cherry Creek near Early Intake, Calif.

Location (revised).--Lat 37°53'40", long 119°57'42", in SE $\frac{1}{4}$ sec.35, T.1 N., R.18 E., on right bank 1.2 miles upstream from mouth, 1.3 miles north of Early Intake, and 10.3 miles southwest of Hetch Hetchy.

Drainage area.--226 sq mi.

Records available.--May 1956 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 2,272.00 ft above mean sea level (levels by city and county of San Francisco).

Extremes.--Maximum discharge during year, 124 cfs Dec. 1 (gage height, 4.07 ft); minimum daily, 1.1 cfs Dec. 23.

1956-61: Maximum discharge, 4,940 cfs May 6, 1958 (gage height, 10.46 ft); minimum daily, 0.4 cfs Oct. 29-31; Nov. 9-13, 1957.

Remarks.--Records good. Flow regulated by Cherry Lake (see p. 624), and Lake Eleanor (see p. 626). Cherry Creek Canal diverts about 1.0 mile upstream from station (see preceding page). Diversion from Cherry Lake to Cherry powerhouse began Aug. 1, 1960. Water is returned to creek 1.2 miles below station.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by city and county of San Francisco.

Rating table, (gage height, in feet, and discharge,
in cubic feet per second)

1.9	1.1	2.5	8.0
2.0	1.5	2.7	13
2.2	3.4	3.0	26
2.4	6.2	3.3	44

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4	2.7	* 2.2	2.6	8.0	5.9	2.5	7.1	1.1	1.1	1.3	1.6
2	3.9	2.8	4.3	2.5	9.0	* 5.8	2.3	* 8.5	1.0	1.4	1.2	1.7
3	2.8	3.0	2.4	2.8	1.2	7.5	2.7	8.2	9.5	1.6	1.3	1.6
4	* 2.8	3.7	1.3	5.8	8.0	9.5	4.4	7.8	7.8	1.6	1.2	1.5
5	2.8	3.0	1.4	5.2	7.6	1.0	3.7	7.6	6.7	1.6	1.2	1.7
6	3.4	3.4	5.0	5.4	7.6	1.2	3.0	1.0	6.0	1.6	1.2	4.1
7	3.3	3.7	4.6	5.8	1.0	1.8	2.8	1.7	5.8	1.6	1.2	2.3
8	3.1	3.0	4.4	5.3	1.1	1.8	2.6	1.2	6.0	1.5	1.2	1.8
9	2.9	3.5	4.4	5.3	8.5	7.8	2.5	7.6	5.9	1.5	1.2	* 1.8
10	2.8	3.3	4.3	5.3	8.5	9.2	3.7	7.1	5.6	1.3	1.1	1.7
11	2.9	3.3	4.3	5.3	1.0	9.0	7.3	7.6	5.4	1.3	1.1	1.7
12	2.9	8.2	4.4	5.3	2.0	8.2	7.8	6.7	5.4	1.4	2.0	1.6
13	2.9	1.0	6.4	5.2	1.0	6.9	* 9.2	6.0	5.2	1.4	1.0	1.6
14	2.9	9.7	6.4	5.2	9.0	5.2	7.8	5.3	4.7	1.6	1.0	1.6
15	2.8	3.0	6.4	5.3	9.2	1.0	7.1	4.8	4.4	1.6	1.2	2.1
16	2.7	2.5	6.4	5.0	1.2	3.3	6.2	4.4	4.2	1.6	1.3	2.3
17	2.8	3.8	6.4	4.4	9.8	3.4	5.4	3.9	4.0	1.5	1.3	2.2
18	2.8	4.2	6.4	4.6	8.8	3.0	4.7	3.2	3.8	1.5	1.3	1.9
19	2.8	5.0	6.2	4.7	8.0	2.3	4.6	3.5	3.7	1.4	1.2	2.1
20	2.8	3.8	6.2	4.7	7.6	2.1	3.5	5.2	4.0	1.4	1.2	2.5
21	2.8	3.8	* 6.2	4.7	7.6	2.8	5.1	4.6	4.3	1.4	1.4	2.4
22	2.8	4.7	2.8	4.7	7.3	2.8	2.0	4.6	4.3	1.4	1.5	2.5
23	2.8	4.6	1.1	4.7	6.9	5.1	2.1	4.7	4.3	1.4	1.5	2.4
24	2.8	4.6	6.5	4.7	6.7	6.9	1.5	4.2	4.2	1.4	1.5	2.1
25	2.7	4.6	1.1	4.8	6.6	1.2	9.8	3.9	4.0	1.4	1.5	2.1
26	2.7	1.2	1.1	7.9	6.6	8.8	1.0	3.5	4.2	1.3	1.4	1.4
27	2.7	8.2	8.0	1.8	6.4	9.2	1.0	3.3	3.9	1.3	1.4	2.9
28	2.7	5.9	4.4	7.0	6.2	1.0	9.8	3.2	3.8	1.3	1.5	5.4
29	2.7	5.6	4.3	6.7	-	4.6	8.2	4.2	* 3.4	1.3	1.4	5.8
30	2.7	5.8	4.4	8.8	-	3.1	6.9	5.2	3.5	1.2	1.5	4.4
31	2.7	-	3.7	7.1	-	2.8	-	6.7	-	1.3	1.6	-
Total	91.6	145.4	215.7	158.6	248.5	225.2	209.6	191.6	159.0	44.2	40.9	541.5
Mean	2.95	4.85	6.96	5.12	8.89	7.26	6.99	6.18	5.30	14.3	13.2	18.0
Max.	5.4	1.2	4.3	8.8	2.0	1.8	2.1	1.7	1.1	1.6	2.0	4.1
Min.	2.7	2.5	1.1	1.8	6.2	2.1	2.3	3.2	3.4	1.1	1.1	2.9
Ac-ft	182	288	428	315	494	447	416	380	315	877	811	1,070
(†)	19,900	17,730	18,330	17,570	19,220	1,490	22,480	34,590	30,170	36,660	31,250	272
Calendar year 1960 :				Max 1.730	Min 0.9	Mean 160		Acra-foot 115,800	† -			
Water year 1960-61 :				Max 4.3	Min 1.1	Mean 8.32		Acra-foot 6,020	† 249,700			

* Discharge measurement made on this day.

† Diversion, in acre-feet, to Cherry powerhouse, furnished by city and county of San Francisco.

SAN JOAQUIN RIVER BASIN

11-2810. South Fork Tuolumne River near Oakland Recreation Camp, Calif.

Location.--Lat 37°49'16", long 120°00'48", in SE $\frac{1}{4}$ sec. 29, T.1 S., R.18 E., on right bank 75 ft downstream from highway bridge on Big Oak Flat Road, 0.5 mile southwest of Oakland Recreation Camp, and 0.6 mile upstream from Middle Tuolumne River.

Drainage area.--87.6 sq mi.

Records available.--March 1923 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 2,800 ft (from topographic map). Prior to Nov. 22, 1931, at site 50 ft upstream at same datum.

Average discharge.--38 years, 90.1 cfs (65,230 acre-ft per year).

Extremes.--Maximum discharge during year, 615 cfs Dec. 1 (gage height, 4.35 ft); minimum not determined.

1923-61: Maximum discharge, 11,900 cfs Dec. 23, 1955 (gage height, 10.9 ft, from floodmarks), from rating curve extended above 1,300 cfs on basis of slope-area measurement of peak flow; minimum, 0.3 cfs Aug. 23, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No storage or diversion.

Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by city and county of San Francisco.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-3, Sept. 15-30)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

0.6	3.5	1.7	26	0.2	0.7	1.3	14
.7	4.5	2.0	44	.3	1.2	1.7	25
.9	6.8	2.4	82	.5	2.4	2.1	51
1.1	9.6	2.8	133	.7	4.2	2.4	81
1.3	14	3.0	165	1.0	7.9	2.7	119

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.8	5.5	161	9	24	20	54	86	51	6.9		
2	3.9	5.6	117	9	28	21	62	78	54	6.6	a 1	
3	3.9	6.9	41	9	35	23	83	78	55	7.2		
4	4.0	11	27	9	26	23	102	76	45	9.2	1.2	
5	* 3.9	9.6	20	9	23	22	107	65	40	8.9		
6	5.8	14	17	9	22	27	101	64	37	7.5		
7	9.0	15	16	9	22	21	82	70	34	6.9		a 1
8	7.2	11	15	9	21	24	68	83	31	6.3		
9	6.7	9.2	14	8	22	27	72	94	28	5.8	a1	
10	6.6	8.6	14	8	24	27	67	96	26	5.0		
11	6.4	8.6	14	8	48	24	69	* 82	24	4.5		
12	6.4	18	13	9	50	24	82	69	* 22	4.2		
13	6.4	33	13	9	35	23	* 66	60	21	4.1		
14	6.4	24	13	9	31	24	68	67	19	3.9	1.6	(*)
15	6.2	18	12	9	30	* 38	72	74	17	3.6	1.1	1.2
16	6.0	14	11	10	32	36	89	72	16	3.6	a 1	1.5
17	6.0	13	11	10	30	46	98	71	14	3.4	a 1	2.5
18	5.8	13	11	10	26	39	92	72	14	3.2	1.6	2.8
19	5.8	15	11	10	23	38	78	79	13	3.0	1.4	2.7
20	5.8	13	11	10	24	38	62	91	13	2.8	a 1	2.5
21	5.7	12	* 13	12	* 24	43	54	80	11	2.6	* a 1.8	2.5
22	5.5	11	14	13	24	44	59	72	11	2.7	a 1.6	2.4
23	5.4	11	14	12	24	63	57	65	10	2.9	* a 1.4	2.3
24	5.4	11	14	13	23	59	49	58	9.3	4.0	1	2.3
25	5.4	11	14	13	22	58	56	57	8.9	4.8		2.3
26	5.4	18	15	36	22	50	55	53	8.7	2.6		2.2
27	5.5	15	13	32	21	56	59	47	8.1	2.2		2.1
28	5.7	13	11	22	21	57	68	44	7.5	2.0	a 1	2.0
29	5.8	* 13	10	20	—	46	80	40	* 7.2	1.7		2.0
30	5.8	14	10	22	—	46	81	39	6.9	1.3		2.0
31	5.7	—	10	22	—	50	—	42	—	1.1		—
Total	177.3	395.0	700	399	757	1137	2192	2124	662.6	134.5	34.7	49.3
Mean	5.72	13.2	22.6	12.9	27.0	36.7	73.1	66.5	22.1	4.34	1.12	1.64
Max.	9.0	33	161	36	50	63	107	96	55	9.2	1.8	2.8
Min.	3.8	5.5	10	8	21	20	49	39	6.9	1.1	—	—
Ac-ft	352	783	1,390	791	1,500	2,260	4,350	4,210	1,310	267	69	96

Calendar year 1960:

Max 708

Min 3.4

Mean 48.1

Acre-feet 34,930

Water year 1960-61:

Max 161

Min —

Mean 24.0

Acre-feet 17,380

* Discharge measurement made on this day.

a No gage-height record.

Note.---Stage-discharge relation affected by ice Dec. 8-21, Dec. 29 to Jan. 20.

11-2820. Middle Tuolumne River at Oakland Recreation Camp, Calif.

Location.--Lat 37°49'40", long 120°00'40", in NW 1/4 sec. 28, T.1 S., R.18 E., on left bank 1,000 ft downstream from Oakland Recreation Camp, 0.5 mile upstream from South Fork Tuolumne River, and 4 miles east of Buck Meadows Post Office.

Drainage area.--71.0 sq mi.

Records available.--October 1916 to September 1961. Monthly discharge only for October 1916, published in WSP 1315-A. Published as Middle Fork of Tuolumne River near Buck Meadows 1917-32 and as "near Buck Meadows" 1933-40.

Gage.--Water-stage recorder. Altitude of gage is 2,800 ft (from topographic map).

Average discharge.--45 years, 72.7 cfs (52,630 acre-ft per year).

Extremes.--Maximum discharge during year, 241 cfs Dec. 1 (gage height, 3.57 ft); no flow Sept. 7-14.

1916-61: Maximum discharge, 4,920 cfs Dec. 23, 1955 (gage height, 11.75 ft from flood profile, 11.05 ft from floodmarks inside gage well), from rating curve extended above 1,400 cfs on basis of slope-area measurement of peak flow; no flow Sept. 4-14, 1924, Aug. 12 to Oct. 5, 1931, Sept. 11-17, 1934, Sept. 7-14, 1961.

Remarks.--Records good except those for periods of ice effect, which are fair. Small diversion above station for irrigation.

Cooperation.--Water-stage-recorder graph and 11 discharge measurements furnished by city and county of San Francisco.

Rating tables, except periods of ice effect (gage height, in feet, and discharge in cubic feet per second)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

0.5	0.4	1.2	7.2	0.3	0	1.3	11
.6	.7	1.5	15	.5	.1	1.5	16
.7	1.4	2.0	36	.6	.6	1.8	27
.8	2.2	2.5	71	.7	1.4	2.2	48
1.0	4.4			.9	3.6	2.6	80
				1.1	7.0	3.0	130

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	* 1.3	52	3.0	7.8	9.0	29	97	76	6.5	0.2	0.1
2	.6	1.3	63	3.1	9.5	9.5	33	91	83	5.7	.2	.1
3	.6	1.8	21	3.0	13	11	43	94	82	5.9	.3	.1
4	.6	2.7	13	3.0	9.2	12	65	97	67	7.6	.3	.1
5	* .5	3.0	9.0	3.0	7.8	11	73	85	61	9.6	.2	.1
6	.7	4.0	6.9	3.0	7.2	13	79	80	57	8.4	.1	.1
7	1.3	4.5	5.6	3.0	7.2	9.5	69	76	51	6.8	.1	0
8	1.8	4.2	5.0	3.0	7.1	9.7	57	88	46	5.9	.1	0
9	2.2	3.2	5.0	2.5	7.4	12	57	102	43	4.9	.1	0
10	1.9	2.9	5.0	2.5	8.2	12	55	117	39	4.1	.1	0
11	1.6	3.0	5.0	2.5	16	12	55	* 109	36	3.2	.1	0
12	1.3	6.3	5.0	3.0	21	11	69	85	* 34	3.1	.1	0
13	1.3	13	5.0	3.0	15	11	* 56	80	31	2.9	.1	0
14	1.4	11	5.0	3.0	13	12	57	95	27	2.6	.1	0
15	1.3	6.0	4.5	3.0	13	* 21	61	111	24	2.4	.3	.1
16	1.3	4.8	4.5	3.5	15	18	78	111	22	2.2	1.0	.1
17	1.2	4.3	4.5	3.5	14	27	98	112	20	1.5	.8	.1
18	1.2	4.4	4.5	3.7	12	19	96	117	18	1.5	.5	.2
19	1.1	4.5	4.5	3.9	9.5	19	81	114	17	1.3	.5	.7
20	1.3	4.9	4.9	3.7	11	18	66	115	15	1.2	.6	1.0
21	1.3	4.3	* 5.3	3.9	11	20	59	117	12	1.0	* .8	1.0
22	1.3	4.0	4.7	4.2	10	22	61	112	12	1.0	.4	1.1
23	1.3	3.8	5.1	4.2	10	30	56	102	12	.9	.2	.9
24	1.3	3.8	5.1	4.3	11	32	46	95	11	.8	.1	.8
25	1.3	3.6	4.7	4.5	10	31	51	96	10	.8	.1	.8
26	1.3	9.3	5.2	11	10	28	52	88	9.4	.6	.1	.7
27	1.3	6.0	4.5	12	9.7	33	57	77	9.0	.5	.1	.6
28	1.3	4.7	4.0	7.2	9.5	34	62	73	8.4	.3	.9	.5
29	1.4	* 5.4	3.7	6.8		25	73	69	* 7.4	.2	.1	.5
30	1.4	4.8	3.5	7.6		24	82	67	6.8	.2	.1	.4
31	1.4		3.5	7.1		26		65		.2	.1	
Total	38.4	140.8	282.2	134.7	305.1	581.7	1876	2937	947.0	93.8	8.8	10.1
Mean	1.24	4.69	9.10	4.35	10.9	18.8	62.5	94.7	31.8	3.03	0.28	0.34
Max.	2.2	13	63	12	21	34	98	117	83	9.6	1.0	1.1
Min.	0.5	1.3	3.5	2.5	7.1	9.0	29	65	6.8	0.2	0.1	0
Ac-ft	76	279	560	267	605	1,150	3,720	5,830	1,880	186	17	20

Calendar year 1960:

Max 293

Min 0.5

Mean 35.6

Acre-feet 25,840

Water year 1960-61:

Max 117

Min 0

Mean 20.2

Acre-feet 14,590

Peak discharge (base, 370 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 8-19, Dec. 30 to Jan. 1, Jan. 3-17.

SAN JOAQUIN RIVER BASIN

11-2835. Clavey River near Buck Meadows, Calif.

Location.--Lat 37°54'00", long 120°04'15", in SE¼NE¼ sec.35, T.1 N., R.17 E., on right bank 300 ft upstream from Forest Service road bridge, 1.7 miles downstream from Quilty Creek, and 6 miles north of Buck Meadows Post Office.

Drainage area.--144 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 2,374.08 ft above mean sea level.

Extremes.--Maximum discharge during year, 576 cfs Apr. 4 (gage height, 7.07 ft); minimum, 3.4 cfs Sept. 7, 8.

1959-61: Maximum discharge, 3,420 cfs Feb. 8, 1960 (gage height, 11.52 ft), from rating curve extended above 700 cfs; minimum, that of Sept. 7, 8, 1960.

Remarks.--Records good. No storage or large diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 30				July 1 to Sept. 30	
1.6	6.4	4.2	106	1.3	3.4
1.8	10	5.0	179	1.4	4.0
2.2	19	6.0	324	1.5	5.1
2.8	36	7.0	555		
3.5	64				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	11	14.2	24	62	58	193	246	131	15	4.4	3.9
2	7.7	11	22.0	22	72	64	237	203	152	14	4.4	3.8
3	7.7	13	89	23	85	70	360	197	136	15	4.4	3.7
4	7.4	21	60	*26	68	68	392	198	122	18	4.4	3.6
5	7.4	17	48	23	62	66	*360	163	115	19	4.4	3.6
6	*12	20	39	24	58	70	311	155	119	16	4.4	*3.6
7	17	*27	35	25	60	60	267	187	111	15	4.3	3.5
8	14	19	*35	23	57	71	204	263	103	14	4.2	3.5
9	14	17	35	24	60	77	218	*260	94	13	4.1	3.6
10	13	16	33	24	80	72	190	284	85	12	4.0	3.7
11	13	16	34	23	175	76	187	246	81	11	4.0	3.7
12	13	28	29	23	152	74	236	195	70	10	4.3	3.6
13	12	45	29	23	108	74	171	172	63	11	4.6	3.6
14	12	37	31	25	90	81	181	184	59	9.9	5.0	3.6
15	12	28	31	24	93	115	193	210	51	9.1	5.0	3.6
16	12	24	30	24	87	90	247	193	*44	8.5	4.6	4.2
17	12	24	31	26	84	115	249	193	39	7.9	*4.1	9.9
18	12	26	31	23	76	*110	*251	204	42	7.7	4.2	9.1
19	11	33	30	24	66	110	179	189	41	7.0	4.1	7.4
20	11	28	29	24	70	123	134	189	37	*6.7	4.2	6.4
21	11	26	31	26	73	165	118	201	32	6.2	4.6	5.8
22	11	25	31	27	85	178	126	190	28	6.2	4.0	5.9
23	11	24	32	25	77	249	130	179	24	6.1	3.8	5.9
24	11	23	34	26	73	216	118	156	23	5.8	3.8	6.1
25	11	23	34	26	68	171	125	163	21	5.5	3.6	5.8
26	11	31	34	58	65	143	147	154	20	5.4	3.6	5.4
27	11	26	30	53	60	145	186	123	19	5.0	3.7	5.1
28	11	26	27	41	57	135	223	123	18	4.9	3.9	5.0
29	11	26	25	42	—	131	267	115	46	4.6	4.3	5.8
30	11	28	28	47	—	145	262	101	16	4.4	4.0	7.0
31	11	—	26	50	—	185	—	105	—	4.4	3.9	—
Total	548.6	719	1,373	898	2,223	3,507	6,462	5,741	1,912	298.3	130.3	149.4
Mean	11.2	24.0	44.3	29.0	79.4	113	215	185	63.7	9.62	4.20	4.98
Max.	17	45	220	58	175	249	392	284	152	19	5.0	9.9
Min.	7.4	11	25	22	57	58	118	101	16	4.4	3.6	3.5
Ac-ft	591	1,439	2,720	1,780	4,429	6,950	12,860	11,390	3,790	592	258	296
Calendar year 1960:			Max 1,020	Min 6.6	Mean 128			Acre-feet 92,920				
Water year 1960-61:			Max 392	Min 3.5	Mean 65.1			Acre-feet 47,140				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2845. Big Creek near Groveland, Calif.

Location.--Lat 37°51'28", long 120°12'02", in NE¼ sec.15, T.1 S., R.16 E., on right bank 0.5 mile downstream from unnamed tributary and 2.0 miles northeast of Groveland.

Drainage area.--25.0 sq mi.

Records available.--October 1931 to September 1933, July 1959 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 2,450 ft (from topographic map).

Extremes.--Maximum discharge during year, 42 cfs Dec. 2 (gage height, 2.49 ft); no flow for several months.

1931-33, 1959-61: Maximum discharge, 3,000 cfs Feb. 6, 1932 (gage height, 6.70 ft), from rating curve extended above 1,300 cfs; no flow for several months each year.

Maximum stage known, 7.6 ft (discharge, about 4,300 cfs), from flood marks in old gage well.

Remarks.--Records good. No storage or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.6	0	2.0	5.9
1.7	.2	2.1	10
1.8	.8	2.3	23
1.9	2.5		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	6.0	0.2	1.2	0.5	1.3	0.5	0.3			
2		0	18	.2	2.1	.5	1.2	.5	.3			
3		0	2.1	.2	3.0	.5	1.1	.4	.3			
4		0	1.1	.2	1.7	.5	1.0	.4	.2			
5		0	.7	.2	1.3	.6	1.0	.3	.2			
6	(*)	0	.5	.2	1.1	1.7	.8	1.2	.2			(*)
7		0	.4	.2	1.0	*1.8	.8	3.6	.2			
8		0	.3	.2	.8	1.3	.7	1.5	.1			
9		0	.3	.2	*.7	1.5	.7	* 1.1	.1			
10		0	.3	.2	.7	1.3	.6	1.0	.1			
11		0	.3	.2	3.7	1.1	.5	.8	.1			
12		0	.3	.2	4.7	1.0	.5	.8	.1			
13		0	.2	.2	2.1	.8	.8	.7	.1			
14		0	.2	.2	1.5	.8	.6	.6	.1			
15		0	.2	.2	1.5	1.4	.5	.5	0			
16		0	.2	.2	2.3	8.1	.4	.4	* 0			
17		0	.2	.2	1.5	17	*.4	.4	0		(*)	
18		0	.3	.2	1.2	8.1	.4	.4	0			
19		0	.3	.2	1.1	4.7	.3	.4	0			
20		0	.3	.2	.8	3.6	.3	.4	0	(*)		
21		0	.3	.2	.8	2.8	.3	.4	0			
22		0	.3	.2	.8	2.3	2.7	.4	0			
23		0	.3	.2	.7	3.3	3.6	.3	0			
24		0	.3	.2	.6	3.0	2.5	.3	0			
25		0	.3	.2	.6	4.3	1.5	.3	0			
26		2.7	.3	3.1	.6	2.8	1.2	.3	0			
27		.5	.3	2.3	.5	2.8	.8	.2	0			
28		.3	.3	1.2	.5	2.5	.7	.2	0			
29		.2	.2	1.0	—	1.8	.6	.2	0			
30		.2	.2	1.2	—	1.7	.5	.2	0			
31		.2	.2	1.2	—	1.5	—	.3	—			
Total	0	3.9	35.2	15.0	59.1	98.2	28.3	19.0	2.4	0	0	0
Mean	0	0.13	1.14	0.48	1.40	3.17	0.94	0.61	0.08	0	0	0
Max.	0	2.7	18	3.1	4.7	17	3.6	3.6	0.3	0	0	0
Min.	0	0	0.2	0.2	0.5	0.5	0.3	0.2	0	0	0	0
Ac-ft	0	7.7	70	30	78	195	50	38	4.8	0	0	0
Calendar year 1960:			Max	432	Min	0	Mean	5.66	Acres-feet	4,110		
Water year 1960-61:			Max	18	Min	0	Mean	0.65	Acres-feet	480		

Peak discharge (base, 220 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-2850. North Fork Tuolumne River above Dyer Creek, near Tuolumne, Calif.

Location.--Lat 37°58'53", long 120°12'20", in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.2 N., R.16 E., on left bank at Riverside Guard Station, 0.2 mile upstream from Dyer Creek, and 2.2 miles northeast of Tuolumne.

Drainage area.--68.7 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 2,200 ft (from topographic map).

Extremes.--Maximum discharge during year, 350 cfs Dec. 1 (gage height, 2.62 ft); minimum, 0.3 cfs Aug. 25, 26.
1958-61: Maximum discharge, 1,460 cfs Feb. 16, 1959 (gage height, 4.03 ft); minimum, that of Aug. 25, 26, 1961.
Flood of December 1955 reached a stage of 10.7 ft, from floodmarks.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No storage or large diversions above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0.1
1.1	.9
1.2	2.8
1.3	6.5
1.4	14
1.5	23
1.7	51
1.9	88
2.1	140

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a 2.1	5.4	8.5	7.7	2.2	1.6	5.0	3.5	2.0	3.4	0.8	0.8
2	a 2.1	5.0	11.9	7.7	2.8	1.5	4.8	3.3	1.9	3.1	.8	.8
3	a 2.1	7.7	4.0	7.7	3.8	1.6	4.6	3.2	1.7	3.7	.8	.8
4	a 2.1	1.2	2.7	9.1	2.8	1.6	4.6	3.1	1.5	4.6	.8	.5
5	a 2.1	8.4	2.0	8.4	2.1	1.7	4.4	3.0	1.4	3.7	.8	.4
6	*a 4.0	1.3	1.5	8.4	1.9	2.4	*4.0	3.6	1.4	3.1	.8	*.5
7	6.5	1.3	1.4	9.1	1.8	*2.0	3.8	5.1	1.3	2.6	.8	.5
8	4.6	9.1	*1.4	8.4	1.7	2.1	3.3	5.1	1.2	2.6	.7	.6
9	5.0	8.4	1.4	9.1	*1.8	2.6	3.1	4.2	1.1	2.6	.7	1.2
10	4.6	7.7	1.3	*8.4	1.9	2.7	3.1	*4.2	1.0	2.3	.7	.8
11	4.6	7.7	1.3	8.4	4.1	2.6	2.7	4.2	1.0	2.1	.7	.8
12	4.6	1.6	1.2	8.4	4.6	2.4	2.8	4.0	1.1	2.1	.6	.8
13	4.6	2.7	1.2	8.4	3.6	2.3	3.0	3.8	1.0	2.1	.4	.7
14	4.6	*2.3	1.2	8.4	3.1	2.3	2.8	3.3	9.1	1.7	.4	.7
15	4.6	1.5	1.2	8.4	3.2	4.0	2.4	3.2	8.4	1.7	.5	.7
16	4.6	1.2	1.2	7.7	3.2	3.6	2.3	3.1	*7.7	1.5	.7	1.5
17	4.6	1.1	1.2	7.7	3.2	4.8	2.3	2.8	a 7.7	1.5	*.7	3.1
18	4.6	1.2	1.2	7.7	2.8	4.2	*2.3	2.7	7.1	1.5	.7	2.8
19	5.0	1.4	1.1	7.7	2.4	4.2	2.2	2.8	7.1	1.4	.7	2.6
20	5.0	1.1	1.1	7.7	2.3	4.6	2.1	2.8	7.1	*1.4	.7	2.3
21	4.6	1.0	1.1	8.4	2.2	4.8	2.1	2.6	5.9	1.4	.7	2.1
22	4.6	1.1	1.1	7.7	2.2	4.5	3.3	2.3	5.4	1.2	.7	2.1
23	4.6	9.8	1.1	7.7	2.1	5.8	3.3	2.2	5.4	1.2	.6	2.3
24	4.6	9.8	1.0	7.7	2.0	5.8	2.8	2.0	5.0	1.4	.4	2.1
25	4.6	9.8	9.8	7.7	1.9	6.5	3.3	1.9	4.6	1.2	.3	1.7
26	4.6	2.6	9.8	2.6	1.8	5.6	3.8	1.8	4.3	1.2	.3	1.5
27	5.0	1.5	9.8	2.1	1.7	6.6	4.2	1.7	3.7	1.0	.4	1.5
28	5.0	1.3	8.4	1.4	1.6	6.6	3.8	1.6	3.4	1.2	.8	2.6
29	5.0	1.2	8.4	1.4	-	6.1	3.6	1.5	3.4	1.4	.8	2.3
30	5.0	1.2	9.1	1.7	-	5.8	3.5	1.5	*3.7	1.0	.8	2.1
31	4.6	-	9.1	1.8	-	5.3	-	1.7	-	.8	.8	-
Total	134.2	366.8	587.4	313.7	70.8	118.2	99.3	91.8	275.0	61.7	20.4	43.2
Mean	4.33	12.2	18.9	10.1	25.3	38.1	33.1	29.6	9.17	1.99	0.66	1.44
Max.	6.5	27	11.9	26	4.6	6.6	5.0	5.1	20	4.6	0.8	3.1
Min.	2.1	5.0	8.4	7.7	1.6	1.5	2.1	1.5	3.4	0.8	0.3	0.4
Ac-ft	266	728	1,170	622	1,400	2,346	1,970	1,820	545	122	40	86

Calendar year 1960: Max 630 Min 2.1 Mean 33.4 Acra-feet 24,260
Water year 1960-61: Max 119 Min 0.3 Mean 15.4 Acra-feet 11,110

Peak discharge (base, 600 cfs).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record.

SAN JOAQUIN RIVER BASIN

635

11-2865. Woods Creek near Jacksonville, Calif.

Location.--Lat 37°51'30", long 120°23'45", in SE 1/4 sec. 11, T.1 S., R.14 E., on right bank 200 ft downstream from Blue Gulch, 1.5 mile upstream from mouth, and 1.5 mile northwest of Jacksonville.

Drainage area.--97.8 sq mi.

Records available.--October 1925 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 653.65 ft above mean sea level, unadjusted. Prior to Oct. 1, 1947, at datum 2.00 ft higher.

Average discharge.--36 years, 58.9 cfs (42,640 acre-ft per year); median of yearly mean discharges, 47 cfs (34,000 acre-ft per year).

Extremes.--Maximum discharge during year, 540 cfs Dec. 2 (gage-height, 5.33 ft); no flow Oct. 1 to Nov. 3, July 1 to Sept. 30.

1925-61: Maximum discharge, 14,400 cfs Dec. 23, 1955 (gage-height, 14.66 ft), from rating curve extended above 2,400 cfs on basis of slope-area measurement of peak flow; no flow for parts of most years.

Remarks.--Records good. Tuolumne Canal (see p. 654) diverts water from the Stanislaus River Basin into Woods Creek Basin for power, irrigation, and domestic supply in the vicinity of Sonora upstream from the station. Some of the diverted water, up to 2 cfs, returns to the Stanislaus River Basin, and up to 4 cfs enters the Tuolumne River Basin upstream from Woods Creek.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	0	2.4	18
1.6	.2	2.7	36
1.7	.6	3.0	62
1.8	1.3	3.5	122
1.9	2.6	4.0	204
2.0	4.5	4.5	312
2.2	10		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	8.9	10	17	9.9	16	7.6	7.0			
2		0	30.4	9.5	22	9.9	14	7.6	9.9			
3		0	5.6	8.6	33	9.9	13	7.3	17			
4		*.1	28	8.3	19	9.9	13	6.7	17			
5		.9	20	7.9	14	10	14	6.7	16			
6		4.8	17	7.6	13	20	14	7.6	15			
7	(*)	3.8	15	8.3	12	* 25	14	33	14			(*)
8		3.2	14	8.6	11	16	13	15	12			
9		5.1	12	8.6	* 11	16	12	12	14			
10		5.1	11	* 8.9	11	16	10	* 10	16			
11		4.0	10	10	38	14	10	11	16			
12		8.9	10	9.9	135	13	10	8.9	16			
13		10	9.5	8.9	36	12	12	7.9	15			
14		13	8.9	8.6	24	13	10	7.3	13			
15		12	* 8.9	8.6	22	100	9.2	6.7	12			
16		8.3	8.9	8.9	38	7.9	8.9	6.5	8.9			
17		7.0	8.9	8.6	24	152	* 8.3	5.9	6.5			
18		7.0	8.9	8.3	18	54	7.6	5.3	2.8			
19		7.3	8.6	7.9	16	37	7.6	4.2	1.5			
20		5.9	8.3	7.6	16	103	7.9	4.0	1.0	(*)		
21		4.8	7.6	7.3	14	* 4.9	7.9	4.8	.7			
22		5.1	8.3	7.3	13	32	22	4.5	.5			(*)
23		4.8	8.3	7.0	12	37	28	3.2	.4			
24		5.1	8.3	7.3	12	75	22	2.3	.2			
25		6.2	8.3	7.0	11	22.9	14	2.0	.2			
26		8.6	8.3	26	11	68	12	1.7	.1			
27		4.6	8.6	25	10	49	10	2.4	.1			
28		2.2	8.6	13	9.9	43	9.9	3.5	.1			
29		18	8.3	11	—	31	8.6	3.5	.1			
30		15	8.3	15	—	25	7.9	3.8	*.1			
31		—	8.3	16	—	18	—	5.1	—			
Total	0	319.4	748.1	315.5	622.9	1375.6	366.8	218.0	233.1	0	0	0
Mean	0	10.6	24.1	10.2	22.2	44.4	12.2	7.03	7.77	0	0	0
Max.	0	86	304	26	135	229	28	33	17	0	0	0
Min.	0	0	7.6	7.0	9.9	9.9	7.6	1.7	0.1	0	0	0
Ac-ft	0	634	1,480	626	1,240	2,730	728	432	468	0	0	0

Calendar year 1960 : Max 1,810 Min 0 Mean 34.0 Acre-feet 24,660

Water year 1960-61 : Max 304 Min 0 Mean 11.5 Acre-feet 8,330

Peak discharge (base, 900 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-2875. Don Pedro Reservoir near La Grange, Calif.

Location.--Lat 37°42'48", long 120°24'14", in SW $\frac{1}{4}$ sec. 35, T.2 S., R.14 E., 300 ft from left bank on upstream face of Don Pedro Dam on Tuolumne River, 1 mile downstream from Rogers Creek, and 5.5 miles upstream from La Grange.

Drainage area.--1,539 Sq mi.

Records available.--September 1923 to September 1961. 1923-24 (year-end contents only) and October 1924 to September 1930 month-end contents, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Turlock Irrigation District). Prior to Feb. 1, 1941, staff gage at same site and datum.

Extremes.--Maximum contents during year, 164,900 acre-ft Apr. 10 (elevation, 562.0 ft); minimum, 40,400 acre-ft Oct. 1 (elevation, 488.4 ft).

1924-61: Maximum contents, 292,100 acre-ft June 13, 1937 (elevation, 606.1 ft); minimum, 29,200 acre-ft Sept. 1-3, 5, 1934; minimum elevation, 475.0 ft Sept. 1, 2, 1934.

Remarks.--Reservoir is formed by concrete gravity-type dam, completed about Jan. 1, 1923; storage began Nov. 14, 1922. Total capacity, 290,400 acre-ft at elevation 605.55 ft (top of drum type spillway gates), of which 30,000 acre-ft below elevation 476 ft (mutually agreed-upon minimum) is not available for release. Water passes through powerplant at dam and down Tuolumne River to La Grange Dam, 4 miles downstream, where it is diverted into Turlock and Modesto Canals for irrigation. This reservoir is operated jointly by Turlock and Modesto Irrigation Districts. Figures given herein represent total contents.

Cooperation.--Water-stage-recorder graph furnished by Turlock and Modesto Irrigation Districts.

Capacity table (elevation, in feet, and contents, in acre-feet)

489	40,900	515	71,000	545	124,300
490	41,900	520	78,100	550	135,800
495	46,900	525	85,800	555	147,700
500	52,200	530	94,100	560	159,900
505	57,900	535	103,400	565	172,500
510	64,200	540	113,500		

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41.8	67.7	70.7	72.7	94.8	143.1	159.7	128.9	131.2	117.9	103.8	77.9
2	43.1	66.9	73.5	73.5	96.3	143.4	161.1	128.0	131.4	117.9	103.4	76.1
3	43.7	65.4	74.6	73.2	98.1	143.8	162.1	126.8	131.6	117.7	102.2	74.1
4	44.4	64.7	75.5	72.5	100.0	144.3	162.9	125.7	131.8	118.4	100.0	72.8
5	43.7	64.1	74.8	72.4	101.8	144.8	163.6	124.6	131.2	118.6	98.1	71.0
6	43.4	63.7	74.6	72.2	103.4	144.8	163.9	123.4	130.9	118.8	96.6	69.2
7	44.0	62.6	74.1	73.1	104.9	145.0	164.4	121.9	130.9	118.6	94.1	68.0
8	45.2	62.2	73.9	74.3	106.5	145.5	164.6	122.3	130.2	118.4	93.1	66.7
9	46.6	62.1	73.4	74.8	108.1	145.8	164.8	123.4	130.0	118.2	91.7	65.9
10	47.0	62.1	73.4	76.0	109.9	145.8	164.1	125.0	130.0	116.9	91.5	65.1
11	47.9	62.2	73.7	76.5	112.2	146.0	162.9	126.6	129.8	115.8	90.9	62.4
12	48.4	62.8	72.7	77.0	115.4	146.7	161.6	127.7	128.4	114.7	90.9	58.5
13	48.7	63.7	72.0	77.7	117.5	146.5	160.2	129.1	127.3	113.9	91.7	55.0
14	49.6	63.7	71.4	78.9	119.5	146.2	158.7	130.2	125.2	113.0	91.2	52.4
15	50.7	64.1	71.4	79.8	121.0	147.0	157.7	130.4	123.2	112.2	91.0	50.9
16	52.1	64.2	71.5	79.9	122.5	147.4	156.7	130.7	121.7	112.2	90.4	50.6
17	52.5	64.5	72.2	80.2	125.0	148.4	155.0	131.2	121.4	109.7	89.7	50.4
18	53.7	65.3	72.9	80.5	126.6	149.1	153.5	131.4	122.3	108.1	88.3	50.2
19	54.9	66.2	72.1	81.0	127.7	150.1	151.6	131.6	121.7	106.9	88.0	50.2
20	55.9	67.3	72.2	81.3	129.3	150.8	149.6	132.1	121.2	106.1	87.2	50.1
21	56.8	67.0	71.8	82.0	130.9	151.3	147.4	132.3	120.6	105.5	85.1	50.1
22	58.6	66.9	71.5	83.2	132.6	152.1	145.8	132.3	119.9	105.7	84.2	50.2
23	60.5	66.6	71.4	83.9	133.9	152.8	143.4	132.6	119.2	106.3	83.6	50.4
24	61.5	68.0	71.7	84.6	136.0	153.5	141.2	132.6	119.0	105.7	82.9	50.4
25	62.9	68.6	72.5	85.4	137.7	155.0	139.1	132.6	119.0	105.1	82.6	50.2
26	63.8	70.0	72.9	86.7	139.1	156.0	137.2	132.6	117.9	104.5	82.8	50.0
27	64.2	71.1	72.5	88.0	140.5	156.2	135.3	132.6	117.7	104.2	83.6	49.6
28	64.9	70.6	72.1	89.3	141.9	156.5	133.7	131.9	117.7	103.4	82.8	49.5
29	66.1	70.4	71.8	90.7	---	157.2	132.1	131.4	117.9	103.4	81.9	49.5
30	67.5	70.6	71.5	91.9	---	157.7	130.2	131.2	117.9	104.2	80.5	49.5
31	68.0	---	71.5	93.1	---	158.4	---	131.2	---	104.2	79.3	---
(+)	512.8	514.7	515.4	529.4	552.6	559.4	547.6	548.0	542.1	535.4	520.8	497.5
(±)	+27,600	+2,600	+900	+21,600	+48,800	+16,500	-28,200	+1,000	-13,300	-13,700	-24,900	-29,800

Calendar year 1960.....* +24,000

Water year 1960-61.....* +9,100

† Elevation, in feet, at end of month.

* Change in contents in acre-feet.

11-2880. Tuolumne River above La Grange Dam, near La Grange, Calif.

Location.--Lat 37°42'35", long 120°24'45", in NE¼ sec.3, T.3 S., R.14 E., on left bank 0.5 mile downstream from Don Pedro Dam, 3.5 miles upstream from La Grange Dam, and 5 miles upstream from La Grange.

Drainage area.--1,534 sq mi.

Records available.--August 1895 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at La Grange," 1895-1912, as "near La Grange" or "at La Grange Dam, near La Grange," 1913-17. August 1895 to September 1917 at La Grange Dam, 3.5 miles downstream, records equivalent if flow of Sierra and San Francisco Power Co.'s canal (abandoned in 1926) and Modesto and Turlock canals is added to flow at La Grange Dam.

Gage.--Water-stage recorder. Altitude of gage is 330 ft (from topographic map). Prior to Mar. 31, 1908, and Sept. 25 to Dec. 5, 1908, staff gage at site 5 miles downstream below point of re-entrance of Sierra and San Francisco Power Co.'s canal, at different datum. Apr. 1 to Sept. 24, 1908, and Dec. 5, 1908, to Feb. 29, 1916, staff gage at site 3.5 miles downstream at La Grange Dam, diversion point of Turlock and Modesto Canals, at different datum.

Average discharge.--65 years (1896-1961), 2,523 cfs (1,827,000 acre-ft per year), adjusted for Hetch Hetchy diversion to San Francisco.

Extremes.--Maximum discharge during year, 2,940 cfs Aug. 31 (gage height, 9.54 ft); minimum daily, 60 cfs Nov. 24. 1895-61: Maximum discharge, 61,000 cfs Dec. 8, 1950 (gage height, 43.8 ft); minimum daily, 2.1 cfs Dec. 27, 1922.

Remarks.--Records excellent. Flow regulated by Don Pedro powerplant, Don Pedro Reservoir (see preceding page), Hetch Hetchy Reservoir (see p. 622), Cherry Lake (see p. 624) and Lake Eleanor (see p. 626). Tuolumne Canal (see p. 654) diverts water from the Stanislaus River basin into the Tuolumne River basin for power, irrigation, and domestic supply in the vicinity of Sonora upstream from station. Diversion through Hetch Hetchy aqueduct to San Francisco began Oct. 19, 1934; an average of 227 cfs was diverted during 1961 water year.

Cooperation.--Water-stage-recorder graph and seven discharge measurements furnished by city and county of San Francisco.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.9	49	6.5	600
5.2	102	7.0	900
5.5	175	8.0	1,590
6.0	355	9.0	2,410

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	210	1,050	841	316	219	388	291	1,960	1,330	1,830	1,200	1,530
2	187	1,220	752	438	338	401	184	1,930	1,370	1,560	1,310	1,140
3	473	1,390	581	1,100	254	341	722	1,930	1,220	1,680	1,690	1,090
4	501	964	438	1,120	161	368	1,060	1,960	1,180	1,410	2,180	894
5	1,040	1,130	972	1,130	146	219	1,120	1,950	1,360	1,560	2,030	1,040
6	1,060	642	992	945	236	327	1,180	1,960	1,450	1,720	1,810	1,070
7	646	1,030	1,080	493	248	415	1,150	1,870	1,320	1,850	2,020	848
8	295	881	1,100	299	207	326	1,030	1,280	1,390	1,880	1,680	744
9	145	725	1,100	501	289	409	910	904	1,340	1,670	1,830	561
10	610	694	873	421	170	549	1,340	905	1,180	2,170	1,090	591
11	428	680	570	674	126	266	1,780	823	1,180	2,230	*1,450	1,400
12	600	387	1,230	631	92	151	1,960	785	1,540	2,240	1,130	2,120
13	727	220	1,210	630	199	570	1,950	709	1,710	2,180	724	1,920
14	460	*758	1,260	377	228	614	1,960	518	1,990	2,130	1,010	1,510
15	335	513	*982	466	249	511	1,560	1,130	2,090	1,600	1,200	930
16	202	786	903	817	221	599	1,550	1,280	2,070	1,220	1,390	292
17	559	649	674	714	213	484	2,010	1,240	1,980	2,050	1,510	201
18	477	380	560	748	216	300	2,100	1,310	1,200	2,050	1,790	280
19	582	271	1,230	733	101	214	2,110	1,260	1,960	1,800	1,320	148
20	678	119	946	728	217	365	2,120	1,100	1,960	1,520	1,450	204
21	637	661	1,240	546	180	489	2,140	1,060	2,110	1,490	1,880	131
22	251	823	1,150	267	121	317	2,140	1,270	2,080	1,180	1,590	138
23	178	872	1,080	607	253	427	2,130	1,220	2,000	802	1,450	81
24	486	60	813	484	206	620	2,140	1,220	1,940	1,290	1,500	74
25	449	296	515	527	185	347	2,190	*1,260	1,550	1,430	1,240	147
26	643	309	610	427	150	152	2,090	1,250	2,030	1,400	1,010	*255
27	767	162	1,140	*413	277	657	1,920	1,140	1,900	1,490	644	337
28	667	888	1,100	358	236	651	1,940	1,200	1,710	1,550	1,260	226
29	382	755	1,110	323	—	407	1,940	1,250	1,620	1,190	1,610	104
30	228	627	1,110	365	—	407	1,930	1,160	1,800	676	1,900	78
31	711	—	991	414	—	355	—	1,240	—	1,060	1,730	—
Total	15,614	19,942	29,153	18,012	5,738	12,646	48,647	40,074	49,560	42,908	45,628	20,084
Mean	504	665	940	581	205	408	1,622	1,293	1,652	1,610	1,470	669
Max.	1,060	1,390	1,260	1,130	338	657	2,190	1,960	2,110	2,240	2,180	2,120
Min.	145	60	438	267	92	151	184	518	1,180	676	644	74
Ac-ft	30,970	39,550	57,820	35,730	11,380	25,080	96,490	79,490	98,300	98,990	90,500	39,840

Calendar year 1960: Max 2,650 Min 60 Mean 1,185 Acre-feet 859,900
 Water year 1960-61: Max 2,240 Min 60 Mean 972 Acre-feet 704,100

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2890. Modesto Canal near La Grange, Calif.

Location--Lat 37°40'04", long 120°27'26", in SW¼ sec.17, T.3 S., R.14 E., on right bank 0.5 mile northeast of La Grange and 1 mile downstream from intake at La Grange Dam.

Records available--April 1903 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage--Water-stage recorder and concrete control. Datum of gage is 272.4 ft above mean sea level (levels by Modesto Irrigation District). Prior to July 1904, staff gage at approximately present site at different datum. July 1904 to March 1920, staff gage in concrete well 0.9 mile upstream and 460 ft below intake, set by water surface elevation to read same as previous gage. March 1920 to February 1924, staff gage and February 1924 to March 1932, water-stage recorder, 0.9 mile upstream and 500 ft below intake at different datum.

Average discharge--58 years, 389 cfs (281,600 acre-ft per year).

Extremes--1903-61: Maximum daily discharge, 1,820 cfs July 1, 1935; no flow at times.

Remarks--Records good. Canal diverts from right bank of Tuolumne River at La Grange Dam for irrigation in Modesto and Waterford Irrigation Districts.

Cooperation--Water-stage-recorder graph furnished by Modesto Irrigation District; nine discharge measurements furnished by city and county of San Francisco.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	177	171	13	5.9	8.5	45	712	429	732	666	598
2	77	177	151	13	8.0	13	13	710	429	515	694	572
3	82	177	153	15	8.0	331	300	710	425	722	698	568
4	80	172	152	16	8.0	359	785	710	427	515	700	209
5	147	60	278	16	8.0	203	788	710	432	733	694	69
6	111	11	296	15	7.7	151	795	708	432	747	694	69
7	18	123	326	9.0	7.4	77	760	652	427	742	692	64
8	19	174	322	8.7	7.4	79	745	628	481	715	690	71
9	19	168	328	9.8	7.4	83	740	630	504	522	692	74
10	20	166	189	8.4	7.4	*84	*755	634	502	614	680	73
11	16	156	144	14	7.4	33	760	484	504	648	690	*71
12	18	53	272	12	8.4	15	768	*402	510	646	692	70
13	20	8.4	318	11	10	76	742	400	511	646	668	69
14	19	111	321	3.3	9.0	110	735	398	593	644	644	69
15	15	149	301	2.0	9.8	187	712	405	670	642	604	65
16	15	169	290	2.2	3.3	222	738	398	687	642	610	66
17	16	167	162	2.2	1.7	219	752	396	688	656	612	69
18	*16	151	16	2.0	1.7	208	752	400	655	658	614	68
19	127	52	*17	2.0	1.7	164	752	398	691	638	608	62
20	176	7.4	17	2.2	1.7	179	755	475	687	658	612	66
21	180	102	19	1.2	1.7	204	752	524	726	658	608	64
22	67	169	18	1.0	1.7	158	752	511	705	656	606	66
23	19	165	18	1.7	2.0	206	752	511	*728	658	608	62
24	114	137	18	2.5	1.7	215	755	519	745	660	606	56
25	*154	79	14	8.4	1.4	68	758	515	544	660	606	59
26	164	9.0	9.0	7.4	2.0	9.0	760	466	744	666	608	67
27	170	9.0	16	5.9	2.0	93	728	450	740	668	606	68
28	171	112	*117	5.6	1.7	122	718	456	727	672	600	65
29	55	163	19	5.6	—	115	710	434	726	668	604	64
30	9.4	161	18	5.0	—	117	710	423	688	636	608	64
31	110	—	18	5.0	—	123	—	430	—	634	586	—
Total	2,500.4	1,534.8	4,508.0	2,261	144.1	4,231.5	20,587	16,199	17,757	20,271	19,900	1,677
Mean	74.2	118	145	7.29	5.15	136	686	523	592	654	642	123
Max.	180	177	328	16	10	359	795	712	745	747	700	598
Min.	9.4	7.4	9.0	1.0	1.4	8.5	13	396	425	515	586	56
Ac-ft	4,560	7,010	8,940	448	286	8,390	40,830	32,130	35,220	40,210	39,470	7,290
Calendar year 1960:				Max 1,080	Min 1.4	Mean 356	Acre-feet 258,800					
Water year 1960-61:				Max 795	Min 1.0	Mean 311	Acre-feet 224,800					

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

639

11-2895. Turlock Canal near La Grange, Calif.

Location.--Lat 37°40'00", long 120°26'25", in NE¼NW¼ sec.21, T.3 S., R.14 E., on right bank 2,400 ft downstream from intake at La Grange Dam and 1.2 miles east of La Grange.

Records available.--October 1898 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 265 ft (from topographic map). July 1, 1899, to Sept. 14, 1915, staff gage at different sites and datums near canal intake; Sept. 15, 1915, to Apr. 15, 1924, staff gage and Apr. 16, 1924, to winter of 1936-37, water-stage recorder, both at present site at datum 0.25 ft higher.

Average discharge.--63 years, 571 cfs (413,400 acre-ft per year).

Extremes.--1898-1961: Maximum daily discharge, 2,280 cfs June 12, 1949; no diversion for irrigation during some periods in each year. Prior to 1939, unmeasured small discharge during winter called zero.

Remarks.--Records good. Canal diverts from left bank of Tuolumne River at La Grange Dam for irrigation in Turlock Irrigation District and to supply town of La Grange. During fall and winter some unmeasured flow is diverted from canal at tunnel 0.3 mile above gage, passed through La Grange powerplant and returned to river.

Cooperation.--Water-stage-recorder graph furnished by Turlock Irrigation District; seven discharge measurements furnished by city and county of San Francisco.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	446	243	21	88	379	246	1250	898	1100	537	933
2	110	683	95	21	70	388	171	1220	942	1040	613	567
3	391	842	70	444	65	10	422	1220	799	960	992	524
4	421	406	65	508	65	93	275	1250	754	899	1480	685
5	895	757	203	527	65	16	334	1240	933	823	1340	968
6	948	193	76	364	60	176	387	1250	1020	975	1120	1000
7	628	496	124	20	60	338	392	1220	895	1110	1330	784
8	276	349	182	20	60	247	289	649	907	1160	994	673
9	126	190	183	20	60	326	170	274	838	1150	1140	487
10	210	156	78	19	60	*465	*588	271	680	1560	412	418
11	*110	136	39	161	60	233	1020	339	679	1580	763	*1330
12	185	11	363	22	65	136	1190	383	1030	1590	440	2050
13	306	10	256	32	65	494	1210	309	1200	1530	56	1850
14	59	184	300	19	65	504	1220	120	1400	1490	362	1440
15	45	118	95	73	65	324	846	724	1420	955	597	865
16	10	236	59	282	65	377	808	880	1380	578	777	226
17	92	111	14	186	65	265	1260	943	1290	1390	897	132
18	71	76	39	164	65	92	1350	910	547	1390	1180	212
19	76	70	511	148	65	50	1360	866	1270	1160	717	86
20	110	65	323	128	*65	186	1370	625	1270	865	842	138
21	86	*84	601	18	65	285	1390	540	1380	828	1270	67
22	190	300	551	17	65	159	1390	755	1370	526	983	72
23	150	298	492	42	65	221	1380	707	*1270	144	843	19
24	35	65	226	16	65	403	1390	704	1200	628	892	18
25	82	35	21	18	65	279	1430	747	1010	767	635	88
26	93	43	12	18	70	143	*1330	782	1290	739	399	188
27	194	43	467	16	70	564	1190	691	1160	825	38	269
28	128	339	384	16	23	529	1220	746	980	882	656	161
29	10	191	518	16	-	292	1230	814	892	526	1010	40
30	94	102	517	15	-	290	1220	734	1110	40	1290	14
31	91	-	416	15	-	232	-	811	-	426	1140	-
Total	61976	66577	72629	13386	1993	84143	28078	23874	31814	29636	25745	16304
Mean	200	222	234	109	7.12	271	936	770	1,060	956	830	543
Max.	948	842	601	527	23	564	1,430	1,250	1,420	1,590	1,480	2,050
Min.	8.2	3.5	3.9	15	6.0	9.3	170	120	679	40	58	14
Ac-ft	12,290	13,210	14,410	6,720	395	16,690	55,690	47,350	63,100	58,780	51,060	32,340
Calendar year 1960:			Max 1,710	Min 2.9		Mean 653			Acre-feet 474,200			
Water year 1960-61:			Max 2,050	Min 3.5		Mean 514			Acre-feet 372,000			

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2900. Tuolumne River at Modesto, Calif.

Location.--Lat 37°37'38", long 120°59'20", in SW $\frac{1}{4}$ sec.33, T.3 S., R.9 E., on left bank at bridge on U. S. Highway 99 in Modesto, 0.2 mile downstream from Dry Creek.

Records available.--1878-84, 1891-94, 1897 (gage heights only), January 1895 to December 1896, April 1940 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is mean sea level, unadjusted (levels by Modesto Irrigation District). Prior to July 11, 1947, at site 1,700 ft downstream, and July 11, 1947, to Nov. 16, 1953, at site 1,000 ft downstream at same datum.

Average discharge.--22 years (1895-96, 1940-61) 1,474 cfs (1,067,000 acre-ft per year).

Extremes.--Maximum discharge during year, 849 cfs Dec. 20 (elevation, 42.09 ft); minimum, 95 cfs June 18.
1895-96, 1940-61: Maximum discharge observed, 57,000 cfs Dec. 9, 1950 (elevation, 69.19 ft); minimum, that of June 18, 1961.

Remarks.--Records good. Flow regulated by reservoirs and powerplants above station. In addition to diversions into Modesto and Turlock Canals (see p. 638, 639), there are diversions for irrigation of about 1,300 acres between stations above LaGrange Dam and at Modesto. See Remarks for Tuolumne River above LaGrange Dam, near LaGrange.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Sept. 8-14)

41.0	72
41.2	170
41.5	355
42.1	860

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	265	505	542	730	608	374	176	149	154	123	134	113
2	259	550	574	608	616	303	176	149	160	123	134	109
3	240	565	660	505	520	222	176	149	165	128	134	104
4	234	565	616	730	599	205	187	154	154	118	139	118
5	222	574	542	740	448	187	187	160	149	128	134	113
6	228	574	512	750	362	193	176	170	144	128	139	113
7	240	565	720	730	394	193	170	199	149	123	134	118
8	240	574	761	710	407	187	176	*222	149	123	144	118
9	240	*550	720	505	362	187	170	187	154	123	134	144
10	234	550	720	574	355	187	182	170	149	128	134	144
11	329	550	710	520	342	182	170	160	149	128	134	134
12	462	565	690	558	296	182	170	154	149	128	139	139
13	498	558	590	710	259	182	*176	149	144	118	139	139
14	520	462	740	720	265	*176	176	149	144	118	139	*144
15	520	512	750	608	368	*187	182	149	134	123	144	134
16	512	455	720	550	*355	193	182	149	139	118	144	149
17	414	520	720	582	*414	205	182	144	134	*128	139	144
18	434	542	608	*690	381	193	176	144	123	118	*128	160
19	512	520	690	730	362	187	182	165	154	113	128	165
20	520	414	*761	750	316	187	176	160	139	109	144	154
21	528	381	761	761	322	187	170	165	134	109	149	154
22	528	455	761	740	*348	187	193	176	134	113	139	154
23	381	528	740	528	303	182	228	165	128	118	128	160
24	*247	528	730	558	336	182	228	160	134	128	128	154
25	322	420	730	730	362	182	199	149	154	134	118	149
26	434	310	730	680	310	187	187	154	149	128	118	139
27	505	388	670	730	310	193	*165	154	*144	118	113	139
28	542	394	720	680	381	187	154	160	134	123	123	144
29	550	483	750	574	—	187	149	170	123	128	118	154
30	520	528	750	565	—	193	144	160	123	134	123	144
31	498	—	740	616	—	182	—	154	—	134	118	—
Total	12,178	15,085	21,428	20,162	10,701	6,161	5,365	4,999	4,293	3,813	4,113	4,147
Mean	393	503	691	650	382	199	179	161	143	123	133	138
Max.	550	574	761	761	616	374	228	222	165	134	149	165
Min.	222	310	512	505	259	176	144	144	123	109	113	104
Ac-ft	24,150	29,920	42,500	39,990	21,230	12,220	10,640	9,920	8,520	7,560	8,160	8,230
Calendar year 1960				Max 1,810	Min 135		Mean 385					
Water year 1960-61				Max 761	Min 104		Mean 308					
									Acre-feet 279,400			
									Acre-feet 223,000			

* Discharge measurement made on this day.

11-2920. Middle Fork Stanislaus River at Kennedy Meadows, Calif.

Location.--Lat 38°17'50", long 119°44'25", in NE¹ sec.11, T.5 N., R.20 E., on right bank at upper end of Kennedy Meadows, 1.3 miles upstream from Deadman Creek, 1.6 miles downstream from Relief Reservoir, and 6.0 miles west of Sonora Pass.

Drainage area.--49.5 sq mi.

Records available.--October 1938 to September 1961. Records for water year 1946 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 6,320.1 ft above mean sea level (river-profile survey).

Average discharge.--23 years, 130 cfs (94,120 acre-ft per year).

Extremes.--Maximum discharge during year, 408 cfs June 5 (gage height, 4.21 ft); minimum daily, 11 cfs many days.

1938-61: Maximum discharge recorded, 1,700 cfs Nov. 20, 1950 (gage height, 6.66 ft), from rating curve extended above 900 cfs on basis of slope-area measurement of peak flow; minimum daily recorded, 7.2 cfs Feb. 11, 1948.

Remarks.--Records good except those for periods of ice effect, which are fair. No diversion. Flow regulated by Relief Reservoir (usable capacity, 15,600 acre-ft). Contents of Relief Reservoir was 858 acre-ft on Sept. 30, 1960, and 1,250 acre-ft on Sept. 30, 1961.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage-height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 30 to Sept. 5, Sept. 26-30)

1.1	10	3.0	133
1.2	13	3.5	221
1.5	23	4.0	345
2.0	47	5.0	700
2.5	80		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	11	b 15	b 11	13	* 18	47	82	89	70	27	22
2	207	11	b 14	b 11	14	18	60	79	144	68	27	22
3	201	12	b 14	b 12	13	18	84	79	197	90	27	22
4	197	12	b 13	b 12	13	18	104	79	261	119	27	* 24
5	193	11	b 12	b 12	13	b 16	100	72	324	88	29	55
6	193	12	11	b 12	13	b 16	94	70	348	71	27	192
7	187	12	b 12	b 12	14	b 15	85	69	* 348	62	27	250
8	181	11	b 12	b 12	14	b 15	76	71	354	57	26	247
9	176	11	b 12	12	15	b 16	75	82	313	54	25	245
10	193	11	b 13	13	18	b 16	72	93	313	51	25	243
11	211	11	b 13	13	25	16	72	81	298	49	27	239
12	197	b 11	13	13	21	17	77	72	234	47	28	239
13	177	b 11	13	13	18	17	70	68	205	* 45	26	236
14	80	b 11	13	13	17	18	70	74	252	45	25	* 234
15	14	b 11	13	13	b 17	20	75	87	265	41	24	232
16	13	b 11	13	13	b 17	19	88	97	258	40	24	234
17	13	b 12	13	13	b 17	19	101	109	250	39	24	232
18	13	b 12	13	13	b 17	19	101	122	225	37	23	297
19	* 12	13	12	13	b 17	18	80	118	205	36	25	357
20	12	13	13	13	18	21	70	112	195	34	25	351
21	11	13	12	13	19	23	* 63	129	167	33	24	345
22	11	13	13	13	20	27	58	* 137	150	32	23	336
23	11	13	13	13	18	35	54	134	143	31	23	327
24	11	13	12	13	b 18	29	52	143	133	33	23	318
25	11	* 13	13	13	b 18	27	54	158	132	33	23	315
26	11	13	13	14	b 17	26	55	143	127	32	22	321
27	11	b 12	b 12	13	17	25	58	120	114	31	23	310
28	11	b 12	b 12	13	18	23	60	119	98	29	23	303
29	11	b 13	b 12	13		23	69	106	79	29	23	290
30	11	13	12	13		25	75	89	72	28	23	278
31	11		b 12	13		36		83		28	23	
Total	2802	358	393	393	469	649	2199	3077	6293	1482	771	7116
Mean	90.4	11.9	12.7	12.7	15.8	20.9	73.3	99.3	210	47.6	24.9	237
Max.	211	13	15	14	25	36	104	158	354	119	29	357
Min.	11	11	11	11	13	16	47	68	72	28	22	22
Ac-ft	5,560	710	780	780	930	1,220	4,360	6,100	12,480	2,540	1,530	14,110

Calendar year 1960: Max 715 Min 8.7 Mean 84.4 Acre-feet 61,230
 Water year 1960-61: Max 357 Min 11 Mean 71.2 Acre-feet 51,570

* Discharge measurement made on this day.
 b Stage-discharge relation affected by ice.

11-2925. Clark Fork Stanislaus River near Dardanelle, Calif.

Location.--Lat 38°21'50", long 119°52'30", in SE $\frac{1}{4}$ sec.15, T.6 N., R.19 E., on right bank 0.3 mile upstream from mouth, and 3 miles northwest of Dardanelle.

Drainage area.--65.7 sq mi.

Records available.--October 1950 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 5,507.3 ft above mean sea level (river-profile survey).

Average discharge.--11 years, 146 cfs (105,700 acre-ft per year).

Extremes.--Maximum discharge during year, 559 cfs May 25 (gage height, 5.18 ft); minimum, 16 cfs Sept. 13, 14, 15, 16.

1950-61: Maximum discharge, 4,350 cfs Nov. 20, 1950 (gage height, 11.88 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; minimum, 11 cfs Apr. 3, 1958.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No storage or diversion.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1 15
2.3 26
2.5 41
3.0 96
4.0 268
5.0 505
5.2 565

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	*19	32	21	24	32	72	*176	*183	*60	*25	19
2	18	19	29	20	25	35	107	162	196	57	25	18
3	*19	20	28	21	25	34	178	178	221	69	27	18
4	18	21	28	*22	24	33	210	176	264	68	25	*18
5	18	21	26	22	24	32	181	152	314	58	26	18
6	22	23	25	22	26	30	176	138	336	55	29	18
7	22	22	25	22	25	37	154	133	336	56	25	18
8	20	21	26	22	26	35	133	152	336	48	24	18
9	20	21	26	22	31	32	a130	192	317	46	23	18
10	21	21	26	22	48	32	a120	212	312	44	23	18
11	22	22	26	22	53	32	a120	167	278	42	27	17
12	22	22	26	22	37	32	a150	147	262	39	32	17
13	22	21	26	22	41	33	a130	147	274	41	26	17
14	21	21	25	23	35	36	a120	181	274	39	24	17
15	19	20	25	23	35	38	a130	221	258	36	22	17
16	20	21	25	23	35	34	*a170	248	238	35	22	20
17	20	22	25	24	32	35	224	274	224	34	21	30
18	20	23	25	23	*32	*36	210	299	199	33	21	22
19	20	22	24	23	32	35	159	274	179	32	22	21
20	20	22	23	23	33	40	133	282	160	31	24	20
21	20	25	24	23	34	46	122	343	139	30	21	20
22	20	24	24	23	37	54	110	347	125	29	20	20
23	19	24	24	23	33	70	104	343	118	28	20	19
24	20	25	25	23	35	57	100	371	104	28	20	18
25	20	26	25	23	35	50	96	400	96	30	20	18
26	20	24	25	25	32	48	102	361	91	28	20	18
27	20	23	24	24	32	47	112	317	83	27	20	18
28	20	24	23	22	32	43	125	292	75	26	21	20
29	20	25	23	24	—	46	147	248	69	25	20	20
30	19	25	22	24	—	49	160	203	63	25	20	18
31	20	—	21	25	—	60	—	187	—	25	20	—
Total	620	669	781	703	913	1253	4,185	7,323	8,124	12,24	715	568
Mean	20.0	22.3	25.2	22.7	32.6	40.4	140	236	204	39.5	23.1	18.9
Max.	22	26	32	29	53	70	224	400	336	69	32	30
Min.	18	19	21	20	24	30	72	133	63	25	20	17
Ac-ft	1,230	1,330	1,550	1,390	1,810	2,490	8,300	14,520	12,150	2,430	1,420	1,130
Calendar year 1960:				Max 544	Min 17	Mean 34.1						
Water year 1960-61:				Max 400	Min 17	Mean 68.7						
								Acre-feet 61,080				
								Acre-feet 49,750				

Peak discharge (base, 600 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

Note.--Stage-discharge relation affected by ice Nov. 12-21, 27-29, Dec. 3-14, 16, 17, 20, Dec. 25 to Jan. 22.

SAN JOAQUIN RIVER BASIN

643

11-2926. Donnell's Reservoir near Dardanelle, Calif.

Location.--Lat 38°19'45", long 119°57'40", in SE $\frac{1}{4}$ sec.35, T.6 N., R.18 E., on left bank in hoist house of Donnell's Dam on Middle Fork Stanislaus River, 1.2 miles downstream from Niagara Creek, and 7.2 miles west of Dardanelle.

Drainage area.--266 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 4.84 ft above mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

Extremes.--Maximum contents during year, 64,600 acre-ft June 15, 16 (gage height, 4,916.7 ft); minimum, 12,500 acre-ft Mar. 24 (gage height, 4,766.3 ft).

1957-61: Maximum contents, 64,800 acre-ft June 1, 1959 (gage height, 4,917.1 ft); minimum, that of Mar. 24, 1961.

Remarks.--Reservoir is formed by concrete arch-type dam completed in 1957. Capacity, 62,590 acre-ft between gage heights 4,720 ft (minimum operating head) and 4,917.0 ft (top of spillway gates). Reservoir is used for power and conservation storage. Water passes through powerplant and down Middle Fork Stanislaus River to Beardsley Lake (see p.645). Figures given herein represent total contents, of which 2,150 acre-ft is below minimum operating head.

Capacity table (gage height, in feet,
and contents in acre-ft)

4,766	12,400
4,790	19,100
4,820	28,400
4,850	38,700
4,880	49,800
4,917	64,700

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23,100	19,700	22,000	22,600	23,700	19,500	14,800	38,900	56,400	57,000	27,900	14,000
2	22,900	19,700	21,900	22,700	23,700	19,000	15,600	39,200	56,500	56,100	26,600	14,000
3	22,600	19,700	22,000	22,500	23,800	18,400	17,000	39,200	57,500	55,200	25,500	14,000
4	22,300	19,700	22,000	22,500	23,800	18,500	18,600	39,300	59,000	54,500	25,000	14,100
5	22,000	19,700	22,000	22,400	23,900	18,600	20,000	39,200	59,900	53,600	25,100	14,200
6	21,700	19,700	22,000	22,400	24,000	18,000	21,200	39,900	60,700	52,700	25,200	14,500
7	21,300	19,800	22,000	22,500	24,000	17,400	22,400	40,900	61,500	51,700	24,600	15,000
8	21,000	19,900	22,000	22,500	24,100	16,800	23,400	40,900	62,200	50,700	24,000	15,400
9	20,900	19,900	22,000	22,500	24,300	16,200	24,300	41,000	62,900	49,700	23,400	15,900
10	20,600	20,000	22,100	22,600	24,400	15,500	25,000	41,500	63,400	48,700	22,800	16,400
11	20,400	20,100	22,200	22,600	24,800	15,700	26,000	41,700	63,900	47,700	22,300	16,900
12	20,100	20,200	22,200	22,600	25,000	15,800	27,000	41,800	64,200	47,400	22,400	17,300
13	19,800	20,300	22,300	22,600	25,200	15,200	27,800	42,600	64,400	46,900	22,500	17,800
14	19,900	20,400	22,300	22,600	24,900	14,700	28,700	43,600	64,500	45,800	21,900	18,300
15	19,900	20,500	22,300	22,700	24,400	14,500	29,700	43,900	64,600	44,700	21,300	18,700
16	19,900	20,600	22,300	22,700	23,800	14,200	30,900	44,300	64,600	43,600	20,800	19,300
17	19,800	20,700	22,400	22,800	23,200	13,800	32,400	44,900	64,500	42,500	20,200	19,800
18	19,800	20,800	22,400	22,800	23,300	14,000	33,700	45,500	64,400	41,400	19,700	20,300
19	19,800	20,900	22,400	22,900	23,500	14,200	34,700	46,100	64,200	40,200	19,700	21,000
20	19,800	21,000	22,400	22,900	22,900	13,700	35,400	47,600	64,000	39,400	19,800	21,800
21	19,800	21,000	22,300	22,900	22,300	13,300	35,500	49,300	63,700	38,200	19,200	22,500
22	19,800	21,200	22,100	23,000	22,400	12,900	35,600	50,000	63,300	37,100	18,600	22,700
23	19,800	21,200	22,200	23,000	-	12,700	36,200	50,700	62,800	35,900	18,100	23,300
24	19,700	21,300	22,300	23,100	-	12,500	36,000	51,600	62,200	34,700	17,500	24,000
25	19,700	21,400	22,300	23,100	-	12,800	35,900	52,700	61,600	33,700	16,900	24,300
26	19,700	21,600	22,400	23,200	-	13,100	35,900	53,500	61,100	32,800	16,900	25,000
27	19,700	21,600	22,400	23,300	20,300	12,800	35,900	54,800	60,300	31,600	16,900	25,500
28	19,700	21,600	22,400	23,300	20,100	13,100	36,100	56,200	59,600	30,500	16,400	26,000
29	19,700	21,700	22,500	23,400	-	13,400	37,200	56,500	58,800	30,500	15,800	26,600
30	19,700	21,800	22,600	23,500	-	13,700	38,400	56,600	57,900	30,600	15,200	27,000
31	19,700	-	22,600	23,500	-	14,200	-	56,500	-	29,700	14,700	-
(†)	4,792.0	4,799.0	4,801.7	4,804.7	4,793.6	4,772.7	4,849.3	4,897.1	4,900.5	4,823.9	4,774.4	4,815.7
(*)	-3,700	+2,100	+800	+900	-3,400	-5,900	+24,200	+18,100	+1,400	-28,200	-15,000	+12,300

Calendar year 1960 -15,200

Water year 1960-61..... +3,600

† Gage height, in feet, at end of month.

* Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2927. Middle Fork Stanislaus River at Hells Half Acre Bridge, Calif.

Location.--Lat 38°14'49", long 120°02'02", in NE¼ sec.31, T.5 N., R.18 E., on left bank 200 ft upstream from Donnell's powerhouse, 800 ft downstream from Hells Half Acre Bridge, 1.1 miles upstream from Cow Creek and 3.7 miles northwest of Strawberry. Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

Drainage area.--280 sq mi.

Records available.--February 1956 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 3,410.94 ft above mean sea level (Oakdale and South San Joaquin Irrigation Districts bench mark). Prior to Aug. 9, 1961, at site 1,600 ft upstream at different datum.

Average discharge.--5 years, 196 cfs (141,900 acre-ft per year).

Extremes.--Maximum discharge during year, 198 cfs Apr. 3 (gage height, 3.09 ft, site and datum then in use); minimum, 6.3 cfs Aug. 8, 9.

1956-61: Maximum discharge, 5,820 cfs May 18, 1958 (gage height, 9.05 ft, site and datum then in use), from rating curve extended above 2,400 cfs on basis of slope-area measurement at gage height 17.72 ft, site and datum then in use; minimum, 3.3 cfs Nov. 9, 10, 1957.

Maximum stage known since at least 1905, 17.72 ft Dec. 23, 1955, site and datum in use prior to Aug. 9, 1961, from floodmarks (discharge, 26,600 cfs on basis of slope-area measurement).

Remarks.--Records good. Flow regulated by Relief Reservoir since 1909 (capacity, 15,600 acre-ft), and by Donnell's Reservoir (see preceding page).

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	29	*25	10	23	*25	84	*130	55	17	*a 17	15
2	27	*29	47	9.4	*25	27	104	115	*56	*17	a 17	15
3	27	15	24	*10	30	29	145	113	50	19	a 17	15
4	27	9.4	16	10	24	28	154	111	46	20	a 17	*15
5	*27	8.9	13	10	22	28	*138	98	41	18	a 11	15
6	29	10	11	10	22	30	130	102	39	17	a 10	15
7	27	10	10	10	22	28	115	107	37	16	a 10	15
8	27	9.4	10	10	23	29	98	121	34	16	a 6.3	15
9	27	9.4	10	9.4	26	32	102	115	31	15	*6.3	15
10	26	9.4	9.4	16	37	32	98	143	29	14	11	15
11	26	10	9.4	12	51	32	94	130	27	15	13	15
12	30	14	8.9	13	47	32	106	117	26	17	14	15
13	30	15	8.9	14	38	32	93	107	23	17	*13	16
14	30	15	8.9	14	34	38	93	111	50	17	13	16
15	29	12	8.9	14	38	50	96	109	115	17	13	16
16	30	12	8.9	14	35	43	111	102	115	16	13	17
17	31	11	8.9	14	30	39	115	98	106	16	13	18
18	30	12	8.9	14	27	32	109	100	96	20	13	17
19	34	14	8.9	14	27	38	94	94	86	20	13	17
20	32	12	8.9	14	28	43	82	93	64	19	13	17
21	32	12	8.9	14	30	55	76	91	17	19	13	17
22	32	12	8.9	14	34	56	79	84	14	21	13	17
23	31	*12	8.9	14	30	88	74	78	16	21	13	17
24	32	11	8.9	15	30	79	70	73	16	19	16	17
25	32	12	8.9	15	29	68	72	68	16	24	16	17
26	31	16	8.9	22	29	60	81	64	14	23	16	17
27	31	14	9.2	21	27	61	93	59	20	20	16	17
28	30	12	10	18	26	58	107	55	19	19	16	18
29	30	12	10	18	-	56	128	51	19	19	16	17
30	30	12	10	19	-	61	132	49	18	17	16	17
31	29	12	10	19	-	74	-	49	18	17	16	-
Total	913	391.5	367.5	430.8	844	1383	1073	2937	1295	562	420.6	485
Mean	29.5	13.0	11.9	13.9	30.1	44.6	102	94.7	43.2	18.1	13.6	16.2
Max.	34	29	47	22	51	88	154	143	115	24	17	18
Min.	26	8.9	8.9	9.4	22	29	70	49	14	14	6.3	15
Ac-ft	1,810	777	729	854	1,670	2,740	6,100	5,830	2,570	1,110	834	968
Calendar year 1960:				Max 1,250	Min 8.9	Mean 85.5	Acre-feet 61,370					
Water year 1960-61:				Max 154	Min 6.3	Mean 35.9	Acre-feet 25,990					

* Discharge measurement made on this day.

a No gage-height record.

SAN JOAQUIN RIVER BASIN

645

11-2928. Beardsley Lake near Strawberry, Calif.

Location.--Lat 38°12'17", long 120°04'31", in NW¼ sec. 14, T.4 N., R.17 E., in hoist house of Beardsley Dam on Middle Fork Stanislaus River, 2.4 miles upstream from Spring Gap powerhouse, 3.9 miles west of Strawberry, and 4.7 miles west of Pinecrest.

Drainage area.--303 sq mi.

Records available.--June 1957 to September 1961. Published as Lake Hartley near Strawberry prior to 1960.

Gage.--Water-stage recorder. Datum of gage is 7.84 ft above mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

Extremes.--Maximum contents during year, 91,700 acre-ft Oct. 2, 3 (gage height, 3,388.4 ft); minimum, 22,700 acre-ft Feb. 13 (gage height, 3,267.5 ft).

1957-61: Maximum contents, 98,700 acre-ft June 27, 1957 (gage height, 3,398.2 ft); no contents at times during period of no gage-height record in November 1957.

Remarks.--Reservoir is formed by rock-fill, earth-core dam (corrected) completed in 1957. Capacity, 98,300 acre-ft between gage heights 3,145.0 ft (tunnel invert) and 3,398.0 ft (top of spillway gates). Reservoir is used for power and conservation storage. Water passes through power plant and down Middle Fork Stanislaus River to Melones Reservoir (see p. 656). Figures given herein represent total contents at 12 p.m., all of which is available for release.

Capacity table (gage height, in feet, and contents, in acre-ft)

3,267	22,500	3,350	66,400
3,290	33,100	3,370	79,200
3,320	48,800	3,389	92,100

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91.100	77.300	55.800	35.000	23.900	29.000	39.900	35.600	45.300	60.100	69.500	56.600
2	91.700	76.600	55.400	34.300	23.800	29.600	39.900	36.100	45.800	60.500	69.500	56.000
3	91.700	75.900	54.700	33.700	23.700	30.200	40.000	36.700	45.400	61.100	69.600	55.300
4	91.600	75.200	54.000	33.100	23.500	30.100	40.400	37.400	44.800	61.600	69.100	54.600
5	91.400	74.500	53.400	32.500	23.500	30.100	40.700	37.900	45.300	62.300	68.000	53.900
6	91.500	73.700	52.800	31.800	23.300	30.800	40.900	37.700	45.900	62.800	67.000	53.200
7	91.500	73.000	52.100	31.100	23.200	31.400	41.100	37.200	46.500	63.300	66.600	52.400
8	91.400	72.300	51.500	30.300	23.100	32.100	40.600	37.800	47.100	63.700	66.100	51.700
9	91.300	71.600	50.800	29.700	23.000	32.800	40.100	38.400	47.600	64.300	65.600	50.900
10	91.100	71.100	50.100	28.900	22.900	33.400	39.500	39.200	48.200	64.900	65.100	50.100
11	91.100	70.200	49.300	28.200	22.900	33.300	39.000	39.800	48.800	65.400	64.600	49.300
12	91.100	69.500	48.600	27.600	22.800	33.200	38.600	40.400	49.400	65.200	63.900	48.700
13	91.000	68.900	47.900	27.200	22.700	33.800	38.200	39.900	49.900	65.200	62.800	47.900
14	90.400	68.100	47.100	26.900	23.100	34.500	37.700	39.700	50.500	65.800	62.300	47.300
15	89.700	67.400	46.600	26.600	23.700	35.000	37.100	40.200	51.200	66.300	61.700	47.000
16	88.900	66.600	45.900	26.200	24.400	35.300	36.600	40.800	51.900	66.800	61.300	46.600
17	88.200	65.900	45.200	25.900	25.000	35.900	36.200	41.300	52.600	67.400	60.800	46.200
18	87.500	65.100	44.500	25.700	24.800	35.800	35.800	41.900	53.300	67.900	60.200	45.800
19	86.800	64.300	43.900	25.500	24.800	35.700	35.300	42.500	53.900	68.500	59.300	45.300
20	86.100	63.500	43.200	25.300	25.400	36.400	35.100	42.100	54.500	68.800	58.700	45.000
21	85.400	62.800	42.700	25.200	26.000	37.200	35.200	41.800	55.000	69.400	58.600	44.600
22	84.600	62.000	42.200	25.000	26.100	37.900	35.400	42.300	55.500	69.900	58.500	44.700
23	83.900	61.300	41.400	24.800	26.700	38.700	35.000	42.800	56.100	70.500	58.400	44.600
24	83.200	60.500	40.800	24.800	27.300	39.500	35.100	43.400	56.600	71.000	58.400	44.500
25	82.600	59.600	40.000	24.700	27.200	39.500	35.300	43.800	57.100	71.300	58.300	44.500
26	81.800	59.000	39.300	24.600	27.100	39.500	35.500	44.400	57.600	71.700	57.700	44.200
27	81.100	58.400	38.500	24.500	27.700	40.100	35.800	44.000	58.000	71.900	57.000	43.800
28	80.400	57.600	37.900	24.400	28.400	40.000	36.000	43.500	58.500	72.000	56.900	43.500
29	79.700	56.800	37.200	24.300	—	40.000	35.700	43.900	59.100	70.800	56.900	42.800
30	78.900	56.100	36.500	24.100	—	39.900	35.300	44.300	59.600	69.600	56.800	42.900
31	78.200	—	35.800	24.000	—	39.900	—	44.700	—	69.400	56.800	—
(†)	3,368.5	3,332.9	3,295.3	3,270.4	3,280.0	3,303.4	3,294.4	3,312.6	3,338.8	3,354.8	3,334.0	3,309.2
(‡)	-12,300	-22,100	-20,300	-11,800	-4,400	+11,500	-4,600	+9,400	+14,900	+9,800	-12,600	-13,900

Calendar year 1960 ‡ +12,500

Water year 1950-61 ‡ -47,600

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

11-2929. Middle Fork Stanislaus River below Beardsley Dam, Calif.

Location.--Lat 38°11'36", long 120°05'53", in NW¼ sec.22, T.4 N., R.17 E., on right bank 0.5 mile downstream from Beardsley powerhouse afterbay dam, 1.5 miles downstream from Beardsley Dam, and 5.7 miles west of town of Pinecrest.

Drainage area.--311 sq mi.

Records available.--December 1956 to September 1961.

Gage.--Water stage recorder. Datum of gage is 3,044.7 ft above mean sea level (river-profile survey).

Extremes.--Maximum discharge during year, 646 cfs July 28 (gage height, 5.49 ft); minimum daily, 32 cfs Apr. 5.
1956-61: Maximum discharge, 5,860 cfs May 23, 1958 (gage height, 10.48 ft); minimum daily, 3.0 cfs Oct. 10, 11, 1958.

Remarks.--Records good. No diversions above station. Flow regulated by Relief Reservoir (capacity, 15,600 acre-ft), Donnell's Reservoir since April 1957 (see p.643), and by Beardsley Lake since January 1957 (see preceding page).

Rating tables (gage height, in feet, and discharge
in cubic feet per second)

Oct. 1 to Apr. 6 Apr. 6 to Sept. 30

2.3	16	1.9	11
2.5	24	2.1	14
2.7	33	2.3	18
3.0	51	2.5	24
3.5	101		
4.0	176		
4.5	286	Note.--Same as preceding table above 2.5 ft.	
5.0	446		
5.5	650		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	421	335	383	101	114	109	338	311	379	588	370
2	45	*421	329	390	106	*108	109	335	*357	383	*575	366
3	272	383	396	390	*108	108	110	338	347	383	571	366
4	*403	379	379	*393	108	114	77	308	354	373	562	370
5	400	386	383	370	114	110	*32	347	335	308	566	370
6	373	396	383	396	108	110	*38	347	354	357	566	370
7	373	417	350	376	109	110	43	350	354	379	566	357
8	407	360	379	386	101	110	283	350	350	393	593	376
9	242	278	379	390	101	110	360	350	360	314	615	386
10	450	328	400	386	93	109	363	350	363	366	606	379
11	386	400	396	383	111	110	370	314	354	383	606	373
12	341	396	383	341	108	110	350	350	350	366	602	370
13	379	373	379	236	105	111	303	341	360	320	597	373
14	400	383	386	192	105	115	370	344	357	370	597	284
15	403	390	338	198	109	111	373	338	320	379	597	206
16	400	386	379	196	108	111	354	341	341	383	593	210
17	400	357	400	171	110	110	357	344	357	376	597	208
18	417	400	383	186	113	110	354	338	354	366	597	208
19	400	390	373	109	113	113	332	320	354	363	461	210
20	373	403	386	108	110	110	323	344	357	317	354	210
21	386	393	386	109	110	109	350	341	373	354	338	212
22	417	370	354	109	111	110	350	344	354	386	366	210
23	393	403	390	104	110	110	370	344	347	383	373	37
24	393	403	390	108	109	110	383	344	360	386	341	68
25	393	357	386	96	111	110	386	323	366	439	376	210
26	403	366	376	101	111	110	357	306	370	492	373	208
27	379	383	390	101	113	118	341	347	370	530	363	214
28	393	393	350	101	113	113	347	347	376	584	354	206
29	407	393	376	100	-	111	370	315	335	632	373	423
30	414	393	393	100	-	109	*370	373	379	624	370	61
31	417	-	403	102	-	113	-	360	-	624	350	-
Total	11,302	11,501	11,710	7,111	10,29	14,37	8,634	10,531	10,619	12,692	15,386	8,211
Mean	365	383	378	229	108	111	288	340	354	409	496	274
Max.	450	421	403	396	114	118	386	373	379	632	615	423
Min.	43	278	329	96	93	108	32	306	311	308	338	37
Ac-ft	22,420	22,810	23,230	14,100	6,010	6,890	17,130	20,890	21,060	25,170	30,520	16,290
Calendar year 1960:				Max 1,550	Min 16		Mean 349				Acre-foot 253,600	
Water year 1960-61:				Max 632	Min 32		Mean 313				Acre-foot 226,400	

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

647

11-2930. Middle Fork Stanislaus River at Sand Bar Flat, near Avery, Calif.

Location.--Lat 38°11'12", long 120°08'28", in SE¹/₄ sec.19, T.4 N., R.17 E., on left bank 1 mile upstream from diversion dam of Pacific Gas & Electric Co. at Sand Bar Flat, 6.5 miles north of Long Barn, and 13 miles southeast of Avery.

Drainage area.--318 sq mi.

Records available.--September 1905 to September 1961. Records for water year 1909 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 2,755 ft above mean sea level (river-profile survey). Prior to Mar. 19, 1928, staff gage at diversion dam 1 mile downstream at different datum. Mar. 19, 1928, to October 1938, water-stage recorder at site 150 ft downstream at present datum.

Average discharge.--56 years, 691 cfs (500,300 acre-ft per year) unadjusted.

Extremes.--Maximum discharge during year, 734 cfs Aug. 11 (gage height, 5.61 ft); minimum daily, 48 cfs Apr. 5.

1905-57 (prior to regulation by Beardsley Lake and Donnell's Reservoir): Maximum discharge, 26,000 cfs Dec. 23, 1955 (gage height, 20.2 ft, from floodmarks), from rating curve extended above 6,000 cfs on basis of computation of peak flow over dam; minimum daily, 28 cfs Jan. 27, 1957.

1957-61: Maximum discharge, 6,030 cfs May 23, 1958 (gage height, 11.60 ft), minimum daily, 12 cfs Oct. 11, 1958.

Remarks.--Records good. Flow regulated by Relief Reservoir since 1909 (capacity, 15,600 acre-ft), Donnell's Reservoir since April 1957 (see p.643), and Beardsley Lake since January 1957 (see p.645). Water diverted by Philadelphia Canal (see p.653) from South Fork Stanislaus River through Spring Gap powerhouse into Middle Fork above station. Stanislaus tunnel diverts 1 mile downstream to Stanislaus powerhouse on Stanislaus River at Stanislaus.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.5	43	4.0	245
2.7	57	5.0	510
3.0	86	6.0	895
3.5	155		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	432	323	426	114	131	134	417	390	429	642	417
2	63	435	383	420	124	124	142	426	429	426	646	414
3	282	408	441	426	125	127	157	420	435	429	654	414
4	435	417	426	432	122	136	139	383	435	426	646	414
5	432	420	429	*402	130	133	48	435	408	351	646	408
6	405	432	429	441	122	134	52	432	429	396	646	411
7	393	447	396	426	124	130	56	426	438	432	650	396
8	426	384	*429	426	117	131	313	423	423	438	678	420
9	256	328	429	432	112	130	447	438	435	391	698	429
10	471	371	450	447	108	127	450	438	444	405	*690	426
11	414	401	441	429	119	128	456	399	429	435	686	426
12	378	435	429	396	124	130	441	429	426	414	682	417
13	399	414	423	309	124	130	383	426	429	364	678	432
14	420	432	426	214	122	133	450	423	435	417	682	333
15	429	435	390	223	122	131	465	426	396	426	682	216
16	423	426	423	220	121	130	444	426	417	429	678	229
17	426	396	444	205	125	130	444	426	432	429	678	223
18	429	441	426	218	127	130	438	426	435	420	678	220
19	417	429	411	122	127	131	*405	399	423	414	566	218
20	*408	447	426	118	124	130	396	420	420	375	441	223
21	399	435	426	122	122	130	417	420	426	399	411	223
22	426	414	402	122	125	131	408	423	399	435	414	220
23	408	438	426	122	125	139	453	*420	390	432	420	63
24	402	444	432	124	125	143	441	423	405	429	388	61
25	411	400	429	110	127	136	435	408	408	486	420	220
26	420	411	417	119	127	134	414	390	420	537	420	229
27	396	441	429	115	*130	148	390	432	417	575	414	245
28	408	447	385	114	128	137	405	429	423	630	405	241
29	423	435	411	114		130	432	393	383	682	417	*508
30	429	441	435	114		125	450	453	420	678	420	57
31	432		444	117		136	438	438		678	390	
Total	11,919	12,636	11,010	8,025	3,442	4,095	10,505	11,067	12,599	14,207	17,566	9,153
Mean	384	421	420	259	123	132	350	422	420	458	557	305
Max.	471	447	450	447	130	148	465	453	444	682	698	508
Min.	59	328	323	110	108	124	48	383	383	351	388	57
Ac-ft	23,640	25,060	25,800	15,920	6,830	8,120	20,840	25,920	24,990	28,180	34,840	18,150
Calendar year 1960:				Max 1,590	Min 34		Mean 406			Acre-feet 274,800		
Water year 1960-61:				Max 698	Min 48		Mean 357			Acre-feet 258,300		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2935. North Fork Stanislaus River below Silver Creek, Calif.

Location.--Lat 38°26'22", long 120°00'53", in SE $\frac{1}{4}$ sec.20, T.7 N., R.18 E., on right bank 100 ft downstream from Silver Creek and 5.6 miles northeast of Big Meadow.

Drainage area.--29.2 sq mi.

Records available.--October 1952 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 6,677.3 ft above mean sea level (river-profile survey).

Average discharge.--9 years, 66.7 cfs (48,290 acre-ft per year).

Extremes.--Maximum discharge during year, 244 cfs Apr. 18 (gage height, 5.70 ft); minimum daily, 3.0 cfs Sept. 15.

1952-61: Maximum discharge, 1,370 cfs Dec. 23, 1955 (gage height, 9.17 ft), from rating curve extended above 500 cfs; minimum daily, 0.3 cfs Oct. 10, 1958.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by Lake Alpine and Union and Utica Reservoirs (combined capacity, 9,600 acre-ft). No diversion.

Cooperation.--Water-stage-recorder graph and four discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Sept. 6				Sept. 7-30	
2.1	8.0	3.5	46	1.6	3.0
2.3	12	4.0	70	1.8	5.1
2.6	18	5.0	148	2.0	7.6
3.0	29	6.0	300	2.4	14

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	19	20	13	16	18	56	175	58	38	* 42	25
2	32	19	25	13	16	20	86	* 148	59	42	42	25
3	32	16	21	13	16	21	101	143	61	44	42	25
4	32	13	19	13	16	22	92	149	65	45	42	25
5	32	13	19	13	16	22	70	132	66	45	43	22
6	33	13	18	13	16	20	70	114	67	45	43	* 14
7	32	13	18	13	17	18	48	136	63	45	42	13
8	31	13	17	13	19	16	45	128	58	46	42	13
9	31	16	17	12	35	13	45	143	51	48	42	13
10	31	13	17	12	49	12	45	220	45	50	42	13
11	31	13	17	12	68	13	50	184	42	46	42	13
12	31	14	17	12	35	13	45	134	37	41	42	13
13	34	14	17	12	26	15	45	100	34	41	42	11
14	33	13	17	12	25	24	80	102	29	40	42	4.7
15	32	14	17	12	27	24	135	145	25	40	34	3.0
16	30	14	16	12	23	19	184	160	24	40	26	3.5
17	29	14	16	13	21	15	211	172	28	41	25	4.8
18	* 28	15	16	13	19	15	205	198	20	41	25	3.5
19	26	16	16	13	18	17	143	202	16	41	25	5.0
20	25	17	16	14	23	32	102	181	13	42	25	4.9
21	25	17	16	14	30	39	81	190	* 11	42	24	4.8
22	28	16	16	14	30	45	74	188	10	42	24	4.7
23	34	15	16	14	22	52	74	184	8.0	42	24	4.6
24	28	16	17	14	21	30	75	167	13	42	24	4.6
25	20	18	17	14	20	23	80	161	26	42	25	4.4
26	19	17	16	15	19	18	107	152	32	42	25	5.0
27	19	16	15	16	17	16	129	118	34	42	24	5.1
28	19	16	15	16	17	14	151	97	33	42	24	5.2
29	19	16	15	16	16	16	170	86	33	42	24	5.2
30	19	17	14	16	16	33	167	71	33	42	25	5.1
31	19	14	14	16	16	43	167	64	33	42	25	5.1
Total	855	456	527	418	677	698	2966	4544	1094.0	1323	1018	3031
Mean	27.9	15.2	17.0	13.5	24.2	22.5	98.9	147	36.5	42.7	32.8	10.1
Max.	34	19	25	16	68	52	211	220	67	50	43	25
Min.	19	13	14	12	16	12	45	64	8.0	38	24	3.0
Ac-ft	1,720	904	1,050	829	1,340	1,380	5,880	9,010	2,170	2,620	2,020	601
Calendar year 1960:	Max 352			Min 1.2			Mean 51.7		Acre-feet 37,550			
Water year 1960-61:	Max 220			Min 3.0			Mean 40.8		Acre-feet 29,520			

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 26-29, Dec. 1-14, Dec. 17 to Jan. 4, Jan. 7 to Feb. 7, Feb. 25, Mar. 1-4, 7, 8, Apr. 8-14, 22, 23.

SAN JOAQUIN RIVER BASIN

11-2940. Highland Creek below Spicer Meadows Reservoir, Calif.

Location.--Lat 38°23'50", long 119°59'30", in SW 1/4 sec. 3, T.6 N., R.18 E., on right bank just downstream from Spicer Meadows Reservoir dam, 5.5 miles upstream from mouth and 7 miles east of Big Meadow.

Drainage area.--43 sq mi, approximately.

Records available.--October 1952 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 6,374.8 ft above mean sea level (river-profile survey).

Average discharge.--9 years, 107 cfs (77,460 acre-ft per year).

Extremes.--Maximum discharge during year, 520 cfs Apr. 3 (gage height, 5.20 ft); minimum daily, 0.3 cfs Nov. 9-14, but may have been less during period of ice effect.

1952-61: Maximum discharge, 8,800 cfs Dec. 23, 1955 (gage height, 11.50 ft), from rating curve extended above 1,200 cfs; minimum daily, 0.1 cfs Oct. 30 to Nov. 4, 1952, Nov. 9, 14, 1954, Oct. 20-30, 1955.

Flood of Nov. 20, 1950, reached a stage of 11.50 ft, from Pacific Gas & Electric Co. recorder chart (discharge, 8,800 cfs).

Remarks.--Records good except those for period of ice effect, which are poor. Flow regulated by Spicer Meadows Reservoir (capacity, 4,060 acre-ft).

Cooperation.--Water-stage-recorder graph and four discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 21				June 22 to Sept. 30			
0	0.2	1.6	15	0.3	0.5	1.1	7.3
.1	.4	2.3	36	.4	.8	1.5	14
.3	.7	3.0	73	.5	1.3	2.0	27
.5	1.6	3.6	136	.8	3.7	2.5	45
.8	3.7	4.2	243				
1.1	6.8	4.7	360				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	0.5				30	128	280	142	12	* 1.7	1.8
2	1.6	.5				35	206	* 235	150	11	1.5	1.7
3	1.6	.5				36	333	249	162	14	1.3	1.8
4	1.5	.4			0.5	35	353	245	174	14	1.2	1.8
5	1.5	.4				34	310	201	186	12	1.1	8.8
6	1.5	.4				33	294	184	197	10	1.0	* 14
7	1.5	.4				33	249	195	182	9.0	1.5	14
8	1.5	.4				34	199	230	174	8.1	2.1	14
9	1.4	.3			.6	40	218	266	156	7.0	2.1	14
10	1.3	.3			.8	35	179	358	143	6.4	2.1	14
11	1.2	.3			1.0	36	205	271	135	5.8	2.1	14
12	1.1	.3			1.2	34	243	214	113	5.5	2.1	17
13	1.1	.3			1.4	37	174	195	108	5.4	2.1	21
14	1.1	.3			1.6	47	182	239	104	4.3	1.8	23
15	1.0		0.5	0.5	2.2	66	222	282	95	3.6	1.8	23
16	1.0				2.9	52	289	287	85	3.1	1.7	23
17	.9				3.6	53	330	310	75	2.8	.9	23
18	* .9				4.2	45	305	335	66	2.5	.8	23
19	.8				4.5	49	216	310	58	2.3	.7	23
20	.8				5.2	67	172	308	52	2.3	.7	23
21	.7				7.9	86	150	348	* 45	2.5	1.2	23
22	.6	.4			4.9	98	146	355	39	2.3	3.2	22
23	.6				40	161	139	338	34	1.9	2.7	22
24	.5				37	109	130	333	30	1.8	1.9	22
25	.5				37	86	136	343	26	1.8	1.8	23
26	.5				33	72	162	296	26	1.8	1.4	23
27	.5				29	64	192	245	21	1.8	1.3	23
28	.5				28	58	230	226	17	1.8	1.4	23
29	.5				—	58	266	182	15	1.8	1.8	23
30	.5					76	273	155	14	1.7	1.8	23
31	.5					101	146	146		1.7	1.8	
Total	30.8	11.7	15.5	15.5	294.1	1,800	6,631	8,161	2,824	1,620	50.6	525.9
Mean	0.99	0.39	0.50	0.50	10.5	58.1	221	263	94.1	5.23	1.63	17.5
Max.	1.6	—	—	—	49	161	353	358	197	14	3.2	23
Min.	0.5	—	—	—	—	30	128	146	14	1.7	0.7	1.7
Ac-ft	61	23	31	31	583	3,570	13,150	16,190	5,600	321	100	1,040

Calendar year 1960:

Water year 1960-61: Max 487 Min — Mean 68.0 Acre-feet 49,350

Max 358 Min — Mean 56.2 Acre-feet 40,700

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 12 to Feb. 17.

SAN JOAQUIN RIVER BASIN

11-2943. North Fork Stanislaus River below Ganns damsite, Calif.

Location.--Lat 38°24'05", long 120°06'40", in SW $\frac{1}{4}$ sec. 4, T.6 N., R.17 E., on left bank 0.25 mile upstream from Big Meadow Creek, and 0.9 mile south of Big Meadow.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 5,405 ft above mean sea level (from river-profile survey).

Extremes.--Maximum discharge during year, 1,000 cfs Apr. 3 (gage height, 6.66 ft); minimum, 13 cfs Nov. 9, 11.

Flood of December 1955 reached a stage of 17.0 ft, from flood marks.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated at low and medium stages by four reservoirs (combined capacity, 13,600 acre-ft).

Rating table, except periods of ice effect (gage height, in feet, and discharge in cubic feet per second)

1.5	13	3.5	121
1.7	19	4.0	186
2.0	31	4.5	275
2.5	56	5.2	465
3.0	81	6.2	820

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	18	91		48	75	340	693	261	48	43	24
2	36	18	68		46	90	507	606	263	52	43	24
3	35	19	49		52	93	712	606	269	56	43	24
4	34	14	44	(*)	45	88	736	606	280	60	42	24
5	34	13	36		40	83	634	*504	288	57	42	23
6	42	14	30		44	82	588	456	300	56	42	23
7	37	15	27		40	82	489	504	278	54	42	25
8	34	14	27		41	83	396	542	263	52	42	25
9	33	13	26		71	86	510	602	237	54	43	24
10	34	16	26		108	80	471	816	209	55	44	25
11	33	14	24		176	82	492	637	199	53	44	24
12	32	20	24	20	92	80	584	513	167	46	44	24
13	35	20	27		70	80	462	456	149	46	44	29
14	36	19	26		62	113	456	504	*138	44	42	28
15	35	18	24		72	154	513	588	124	43	39	24
16	32	17			66	119	658	595	108	42	25	31
17	31	18			68	116	*780	620	101	42	25	31
18	29	22			57	*98	760	682	86	*43	25	26
19	26	24			67	114	556	668	76	42	24	*24
20	25	21			56	181	444	612	68	42	24	26
21	26	23			68	244	375	654	62	42	24	26
22	25	21			109	267	368	654	55	42	23	26
23	38	18	25	25	95	426	365	620	50	42	24	26
24	37	18		24	86	273	330	581	44	42	24	26
25	20	21		25	87	210	350	581	50	42	24	26
26	19				41	80	171	435	532	58	42	27
27	18				43	72	149	525	426	57	42	27
28	18	21			36	71	132	616	393	*52	42	23
29	18				34	-	134	693	338	50	42	23
30	18		20		36		191	693	288	48	42	24
31	18		20		52		271	*267	42	42	25	27
Total	922	553	939	756	1,989	4,447	15,838	17,144	4,390	1,449	1,023	774
Mean	29.7	18.4	30.3	24.4	71.0	143	528	553	146	46.7	33.0	25.8
Max.	42	24	91	52	176	426	780	816	300	60	44	31
Min.	18	13	20	20	40	75	330	267	44	42	23	23
Ac-ft	1,870	1,100	1,360	1,500	3,950	8,820	31,410	34,000	8,710	2,870	2,030	1,540
Calendar year 1960:				Max -	Min -		Mean -			Acre-feet -		
Water year 1960-61:				Max 816	Min 13		Mean 148			Acre-feet 99,620		

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 26-30, Dec. 6, Dec. 16 to Jan. 22.

11-2945. North Fork Stanislaus River near Avery, Calif.

Location.--Lat 38°14'45", long 120°17'20", in NE $\frac{1}{4}$ sec. 35, T.5 N., R.15 E., on right bank 700 ft upstream from intake of Utica Canal, 3.3 miles upstream from Beaver Creek and 5.1 miles northeast of Avery.

Drainage area.--163 sq mi.

Records available.--July 1914 to September 1925, November 1928 to September 1961. Yearly discharge only for some years, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 3,388.3 ft above mean sea level (river-profile survey). Prior to September 1922, staff gage at same site at datum 0.05 ft lower.

Average discharge.--44 years, 405 cfs (293,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,320 cfs Apr. 4 (gage height, 5.73 ft); minimum daily, 18 cfs Nov. 10.
1914-22, 1928-61: Maximum discharge, 32,000 cfs Dec. 23, 1955 (gage height, 14.23 ft, from floodmarks), from rating curve extended above 4,500 cfs on basis of slope-area measurement at gage height 13.8 ft; minimum daily, 5.5 cfs Dec. 6, 7, 1929.

Remarks.--Records good. Flow regulated at low and medium stages by four reservoirs (combined capacity, 13,600 acre-ft). Diversion of a maximum of 10 cfs during summer from Beaver Creek into river above station.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 10				May 11 to Sept. 30			
1.2	16	3.0	165	1.3	23	3.0	190
1.4	23	3.5	260	1.5	32	3.5	300
1.7	37	4.0	400	1.7	42	4.0	440
2.0	56	5.0	845	2.0	64	5.0	845
2.5	102	6.0	1,560	2.5	113	6.0	1,560

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	20	* 114	35	89	104	407	873	359	61	43	25
2	34	20	192	30	76	120	587	750	353	62	43	25
3	35	25	93	31	101	141	919	740	348	70	43	25
4	34	26	73	30	79	133	984	750	359	76	43	26
5	34	19	63	28	64	129	893	640	365	75	43	* 26
6	47	22	50	26	62	130	805	573	383	70	42	26
7	48	28	48	27	66	120	734	622	362	68	42	26
8	39	22	48	26	62	130	538	* 700	340	64	41	28
9	37	19	46	26	72	138	670	740	315	63	41	28
10	37	18	42	* 26	148	133	645	1010	281	65	41	28
11	38	24	42	26	240	130	631	851	267	64	44	28
12	37	26	39	28	177	128	* 823	692	238	58	45	* 27
13	37	60	41	29	134	121	627	604	212	52	43	27
14	39	43	42	30	109	146	627	640	196	50	41	32
15	38	28	40	30	123	205	650	732	179	48	41	31
16	37	23	38	31	113	189	856	741	157	48	35	54
17	* 34	24	37	32	* 102	183	984	755	142	46	25	68
18	33	32	45	32	93	161	954	835	126	46	25	43
19	32	38	47	32	80	171	710	835	111	47	25	35
20	29	30	42	33	90	205	555	755	* 97	46	25	32
21	27	27	42	34	99	316	467	805	88	46	24	32
22	27	29	46	34	130	325	453	800	82	46	24	32
23	30	25	48	33	151	518	449	765	73	46	23	32
24	38	22	48	32	134	400	404	709	67	45	24	32
25	37	22	45	33	130	303	421	700	62	* 44	24	31
26	23	37	44	48	125	255	514	676	73	44	24	31
27	21	32	41	68	113	233	636	552	78	43	24	32
28	21	30	30	58	106	* 210	745	507	73	43	24	32
29	21	33	34	51	—	203	867	444	69	43	24	33
30	21	30	41	53	—	244	873	389	64	43	24	32
31	20	—	35	63	—	349	—	365	—	* 43	24	—
Total	1,019	834	1,636	1,095	1,068	6,273	20,428	21,550	5,919	1,665	1,034	959
Mean	32.9	27.8	52.8	35.3	110	202	681	695	197	53.7	33.4	32.0
Max.	48	60	192	68	240	518	984	1,010	383	76	45	68
Min.	20	18	30	26	62	104	404	365	62	43	23	25
Ac-ft	2,020	1,650	3,240	2,170	6,093	12,440	40,520	42,740	11,740	3,300	2,050	1,900

Calendar year 1960: Max 1,790 Min 12 Mean 257 Acre-feet 186,800
 Water year 1960-61: Max 1,010 Min 18 Mean 179 Acre-feet 129,900

Peak discharge (base, 2,000 cfs).--W: peak above base.

* Discharge measurement made on this day.

11-2965. South Fork Stanislaus River at Strawberry, Calif.

Location.--Lat 38°11'51", long 120°00'27", in SW 1/4 sec. 16, T. 4 N., R. 18 E., on right bank at Strawberry, 0.3 mile downstream from bridge on State Highway 108, 0.6 mile downstream from Herring Creek, and 1.2 miles downstream from Pinecrest Lake.

Drainage area.--45.5 sq mi.

Records available.--October 1911 to January 1917, August 1938 to September 1961. Monthly discharge only for October 1913 and yearly estimates for 1912-13, published in WSP 1315-A. Published as "near Confidence" 1911-13.

Gage.--Water-stage recorder. Datum of gage is 5,235.1 ft above mean sea level (river-profile survey). October 1911 to January 1917, staff gage at site 1 mile downstream at different datum.

Average discharge.--28 years (1911-16, 1938-61), 126 cfs (91,220 acre-ft per year).

Extremes.--Maximum discharge during year, 484 cfs May 21 (gage height, 4.02 ft); minimum daily, 21 cfs Nov. 22-24, Feb. 14.
1911-17, 1938-61: Maximum discharge, 3,900 cfs Nov. 21, 1950 (gage height, 9.25 ft), from rating curve extended above 1,100 cfs on basis of contracted-opening measurement of peak flow at bridge 0.3 mile below station; minimum, 1.3 cfs Nov. 22, 23, 1946.

Remarks.--Records good. Flow regulated at low and medium stages by Pinecrest Lake beginning in 1916 (capacity, 18,300 acre-ft). No diversion.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 22-24)

1.6	19	3.0	228
1.8	34	3.5	346
2.0	54	4.0	505
2.5	128		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	37	22	35	31	29	24	35	102	166	41	50	75
2	37	22	32	31	29	24	51	87	190	41	69	75
3	37	29	30	31	29	24	78	96	208	49	74	75
4	37	31	30	30	29	24	105	91	235	57	74	75
5	37	31	29	30	29	24	102	75	257	47	74	75
6	39	31	29	*30	29	23	93	65	263	44	75	75
7	39	31	29	30	29	23	78	63	*243	43	75	75
8	39	31	29	30	29	23	70	82	228	43	75	*76
9	39	31	29	30	29	22	74	105	204	43	75	76
10	41	31	29	29	30	22	70	128	190	44	75	76
11	43	31	29	29	34	24	82	91	168	44	75	76
12	43	31	29	29	33	24	79	71	136	43	74	76
13	43	31	29	29	27	24	57	76	128	43	74	76
14	42	31	29	29	21	25	59	107	121	44	74	*52
15	43	31	29	29	22	27	88	123	107	44	74	42
16	42	31	29	29	22	27	117	126	94	43	75	43
17	37	31	29	29	22	27	130	188	79	43	75	43
18	27	25	29	29	22	26	107	318	67	43	75	43
19	*23	22	29	29	22	27	78	328	58	43	75	43
20	22	22	29	29	*22	28	59	343	50	43	75	42
21	22	22	29	29	22	30	*53	395	43	45	75	42
22	22	21	29	29	23	35	47	*395	40	46	75	42
23	22	21	29	29	25	*43	43	368	40	46	75	42
24	22	21	29	29	24	36	42	352	40	46	75	42
25	22	*22	29	29	24	29	41	383	38	45	75	42
26	22	31	29	29	24	27	43	349	40	45	75	42
27	22	42	29	29	24	27	47	279	40	45	74	65
28	22	36	29	29	24	25	60	259	39	45	75	84
29	22	30	29	29	-----	25	85	188	39	45	75	55
30	22	30	31	29	-----	24	96	126	40	45	75	28
31	22	-----	31	29	-----	27	-----	128	-----	45	75	-----
TOTAL	989	852	914	911	728	820	2,169	5,887	3,591	1,383	2,286	1,773
MEAN	31.9	28.4	29.5	29.4	26.0	26.5	72.3	190	120	44.6	73.7	59.1
MAX	43	42	35	31	34	43	130	395	263	57	75	84
MIN	22	21	29	29	21	27	35	63	38	41	50	28
AC-FT	1,960	1,690	1,810	1,810	1,440	1,630	4,300	11,680	7,120	2,740	4,530	3,520

CALENDAR YEAR 1960: MAX 670 MIN 20 MEAN 76.9 AC-FT 55,870
WATER YEAR 1960-61: MAX 395 MIN 21 MEAN 61.1 AC-FT 44,230

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

653

11-2970. Philadelphia Canal near Strawberry, Calif.

Location--Lat 38°10'40", long 120°02'45", in NW 1/4 sec.30, T.4 N., R.18 E., on right bank 250 ft downstream from diversion dam on South Fork Stanislaus River and 2.8 miles southwest of Strawberry.

Records available--October 1939 to September 1961.

Gage--Water-stage recorder and concrete control. Altitude of gage is 4,920 ft (from topographic map).

Average discharge--22 years, 42.2 cfs (30,550 acre-ft per year).

Extremes--1939-61: Maximum daily discharge, 64 cfs Dec. 11, 1941, May 16, 21, 1961; no flow at times in each year except 1943, 1946-47, 1955-57, 1961.

Remarks--Records excellent except those for periods of no gage-height record, which are good. Canal diverts from right bank of South Fork Stanislaus River for power development in Spring Gap powerplant of Pacific Gas & Electric Co.; tailrace empties into Middle Fork Stanislaus River above station at Sand Bar Flat.

Cooperation--Water-stage-recorder graph and nine discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	20	1.7	20	15	15	17	23	57	60	30	27	26
2	20	2.4	20	15	15	18	32	58	60	A30	31	26
3	20	9.2	20	15	15	19	47	59	61	A30	56	26
4	20	13	20	15	15	19	*39	59	62	A31	57	26
5	14	13	20	15	15	19	14	58	61	A30	56	26
6	10	13	20	15	15	19	13	54	60	*30	56	26
7	10	13	*19	15	15	19	26	48	60	30	57	30
8	10	13	19	15	15	19	54	54	59	30	57	31
9	10	13	19	15	15	19	58	59	60	30	57	31
10	10	*13	19	15	15	17	58	61	59	30	A 57	31
11	10	13	19	15	16	18	58	59	58	30	A 57	31
12	10	13	19	*15	16	19	58	57	56	30	A 57	31
13	10	17	19	15	19	18	50	56	59	30	A 57	31
14	10	21	19	15	17	18	51	59	A 59	30	*A 57	21
15	10	21	20	15	15	18	58	61	A 59	30	57	11
16	10	21	20	15	15	18	61	A64	A 59	30	57	11
17	6.2	21	20	15	15	18	61	A60	A 59	30	57	11
18	1.8	18	20	15	15	18	60	A61	58	30	57	11
19	1.8	15	20	15	15	18	58	A58	49	30	57	11
20	1.8	15	20	15	15	18	*54	A61	43	30	57	11
21	1.0	15	20	15	15	18	49	A64	33	30	46	11
22	1.2	15	20	15	15	19	36	A61	30	30	26	11
23	1.8	15	20	15	17	26	28	A58	30	30	26	11
24	1.8	15	20	15	18	27	33	*A56	A 30	30	26	11
25	.5	15	20	15	18	22	35	59	A 30	30	26	14
26	.5	18	20	15	18	22	36	59	A 30	30	A 26	20
27	.5	30	20	15	18	22	37	59	A 30	30	A 26	40
28	.5	23	20	15	*17	18	38	60	A 30	30	A 26	59
29	.6	20	17	15	-----	17	42	59	A 30	30	A 26	40
30	1.2	20	15	15	-----	17	53	56	A 30	30	A 26	12
31	1.7	-----	15	15	-----	18	-----	56	-----	31	A 26	-----
TOTAL	226.9	465.3	599	465	444	592	1,320	1,810	1,464	932	1,417	688
MEAN	7.32	15.5	19.3	15.0	15.9	19.1	44.0	58.4	48.8	30.1	45.7	22.9
MAX	20	30	20	15	19	27	61	64	62	31	57	59
MIN	0.5	1.7	15	15	15	17	13	48	30	30	26	11
AC-FT	450	923	1,190	922	881	1,170	2,620	3,590	2,900	1,850	2,810	1,360

CALENDAR YEAR 1960: MAX 63 MIN 0 MEAN 32.4 AC-FT 23,540
 WATER YEAR 1960-61: MAX 64 MIN 0.5 MEAN 28.6 AC-FT 20,670

* Discharge measurement made on this day.

A No gage-height record.

SAN JOAQUIN RIVER BASIN

11-2975. Tuolumne Canal near Long Barn, Calif.

Location.--Lat 38°05'35", long 120°10'03", in SW¹/₄ sec.24, T.3 N., R.16 E., on left bank 300 ft downstream from intake, 350 ft downstream from Lyons Reservoir on South Fork Stanislaus River, 2 miles west of Long Barn, and 15 miles northeast of Sonora.

Records available.--October 1937 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 4,110.0 ft above mean sea level (river-profile survey). Prior to June 1938, at site 200 ft downstream at different datum.

Average discharge.--24 years, 24.2 cfs (17,520 acre-ft per year).

Extremes.--1937-61: Maximum daily discharge, 55 cfs May 30, 1954; no flow at times in some years.

Remarks.--Records excellent. Canal diverts from left bank of South Fork Stanislaus River into Tuolumne River basin for power and domestic supply in vicinity of Sonora.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	24	17	13	13	9.8	10	10	18	41	37	40	37
2	24	17	13	13	10	10	10	18	41	37	40	37
3	24	17	13	13	9.8	10	10	18	40	37	40	37
4	27	17	13	13	9.4	10	10	18	40	37	39	37
5	29	17	13	13	9.4	10	10	18	41	37	39	36
6	29	17	12	*13	9.8	10	10	18	42	37	39	35
7	29	17	12	12	10	10	10	18	44	38	39	35
8	30	14	12	12	10	10	8.9	18	44	38	39	*32
9	30	13	13	12	10	10	9.2	18	41	38	39	30
10	26	13	13	12	10	10	9.8	18	40	38	39	30
11	23	13	13	10	10	10	9.6	18	39	38	39	30
12	18	13	13	10	9.8	10	10	18	38	38	39	30
13	17	13	13	10	9.8	10	10	18	*39	*39	39	30
14	17	13	13	10	9.8	10	11	18	40	39	39	30
15	17	13	13	10	9.8	10	9.8	18	39	39	39	30
16	17	13	13	10	9.8	10	9.6	18	29	39	40	30
17	17	13	13	10	9.8	10	9.8	*18	27	39	40	30
18	17	13	13	10	9.8	10	10	18	20	39	39	28
19	17	13	13	10	9.8	10	10	18	25	39	39	26
20	17	13	13	10	*9.8	10	10	18	29	39	39	23
21	17	13	13	10	9.8	10	10	18	30	39	39	21
22	17	*13	13	10	9.8	10	10	25	33	39	39	21
23	17	13	13	10	10	10	10	29	35	39	39	21
24	*17	12	13	10	10	10	11	33	35	39	39	21
25	17	13	13	10	10	10	11	40	35	39	39	19
26	17	17	13	10	10	10	10	47	35	39	38	17
27	17	20	13	10	10	10	15	51	35	39	38	17
28	17	16	13	10	10	10	18	53	35	39	38	17
29	17	13	13	10	-----	10	18	44	35	39	38	17
30	17	13	13	10	-----	10	18	37	37	39	38	17
31	17	-----	13	10	-----	10	-----	38	-----	40	37	-----
TOTAL	636	432	400	336	276.0	310	328.7	775	1,084	1,192	1,207	821
MEAN	20.5	14.4	12.9	10.8	9.86	10.0	11.0	25.0	36.1	38.5	38.9	27.4
MAX	30	20	13	13	10	10	18	53	44	40	40	37
MIN	17	12	12	10	9.4	10	8.9	18	20	37	37	17
AC-FT	1,260	857	793	666	547	615	652	1,540	2,150	2,360	2,390	1,630

CALENDAR YEAR 1960: MAX 53

MIN 10

MEAN 25.0

AC-FT 18,140

WATER YEAR 1960-61: MAX 53

MIN 8.9

MEAN 21.4

AC-FT 15,460

* Discharge measurement made on this day.

11-2980. South Fork Stanislaus River near Long Barn, Calif.

Location.--Lat 38°05'33", long 120°10'02", in SW¹/₄ sec.24, T.3 N., R.16 E., on left bank 600 ft downstream from Lyons Dam, 2 miles west of Long Barn, and 15 miles northeast of Sonora.

Drainage area.--67.2 sq mi.

Records available.--October 1937 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder and masonry control. Datum of gage is 4,073.4 ft above mean sea level (river-profile survey).

Average discharge.--24 years, 86.7 cfs (62,770 acre-ft per year).

Extremes.--Maximum discharge during year, 580 cfs May 22 (gage height, 4.30 ft); minimum daily, 1.8 cfs Oct. 13, Aug. 3.

1937-61: Maximum discharge, 4,900 cfs Nov. 21, 1950 (gage height, 9.3 ft), from rating curve extended above 1,100 cfs on basis of computation of peak flow over Lyons Dam; no flow at times in 1937-39, 1952.

Remarks.--Records good. Flow regulated by Lyons Reservoir (capacity, 5,400 acre-ft) and Pinecrest Lake (capacity, 18,300 acre-ft).

Tuolumne Canal (see preceding page) diverts at Lyons Dam; Philadelphia Canal (see p. 653) diverts 12 miles above station into Middle Fork Stanislaus River.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.8	0.8	1.2	15	2.5	150
.9	3.3	1.5	34	3.0	240
1.0	6.6	1.7	51	4.0	480
1.1	10	2.0	83		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.0	3.0	2.3	2.3	2.5	2.3	2.0	58	2.3	2.3	2.5
2	2.0	2.0	3.0	2.3	2.3	2.3	2.3	2.0	87	2.5	2.3	2.5
3	2.0	2.0	2.5	2.3	2.3	2.3	2.3	2.0	103	2.5	1.8	2.5
4	2.0	2.0	2.5	2.5	2.3	2.3	*2.5	2.0	117	2.5	2.0	2.8
5	2.0	2.0	2.5	2.5	2.3	2.3	2.3	2.0	146	2.5	2.3	3.0
6	2.0	2.0	2.5	*3.0	2.3	2.3	2.5	2.0	166	2.3	2.3	2.8
7	2.0	2.0	2.5	3.0	2.5	2.3	2.3	2.0	150	2.3	2.3	2.5
8	2.0	2.0	2.5	3.0	2.5	2.3	2.3	2.0	124	2.5	2.3	*2.3
9	2.0	2.0	2.5	2.8	2.3	2.3	2.0	2.0	111	2.5	2.3	2.3
10	2.0	2.0	2.5	2.5	2.3	2.3	2.0	2.0	87	2.5	2.3	2.5
11	2.0	2.0	2.5	2.5	2.5	2.3	2.0	2.0	75	2.5	2.3	2.5
12	2.0	2.0	2.5	2.5	2.5	2.3	2.0	2.0	45	2.5	2.3	2.5
13	1.8	2.5	2.5	2.5	2.3	2.5	2.3	2.0	*28	*2.3	2.3	2.5
14	2.0	2.3	2.5	2.5	2.3	2.5	2.5	2.3	24	2.5	2.0	2.5
15	2.0	2.3	2.5	2.5	2.3	2.8	2.3	2.3	15	2.5	2.0	2.5
16	2.0	2.3	2.5	2.3	2.3	2.5	2.5	2.0	12	2.5	2.0	2.5
17	2.0	2.3	2.5	2.3	2.0	2.8	2.3	*2.3	3.0	2.3	2.0	2.5
18	2.0	2.3	2.3	2.3	2.0	2.8	2.3	2.5	2.0	2.3	2.0	2.5
19	2.0	2.3	2.3	2.3	2.0	2.5	2.3	2.5	2.5	2.0	2.0	2.5
20	2.0	2.0	2.5	2.3	*2.3	2.5	2.3	2.5	2.5	2.0	2.3	2.3
21	2.0	2.3	2.5	2.3	2.5	2.5	2.3	2.5	2.3	2.5	2.5	2.3
22	2.0	*2.3	2.5	2.3	2.5	2.5	2.5	274	2.3	2.3	2.5	2.3
23	2.0	2.5	2.5	2.3	2.5	2.5	2.5	296	2.3	2.3	2.5	2.3
24	*2.0	2.5	2.5	2.3	2.5	2.5	2.5	267	2.0	2.0	2.5	2.3
25	2.0	2.8	2.5	2.3	2.5	2.5	2.5	296	2.0	2.0	2.5	2.3
26	2.0	3.0	2.5	2.3	2.5	2.5	2.5	*288	2.3	2.0	2.5	2.3
27	2.0	3.0	2.3	2.3	2.5	2.5	2.3	162	2.3	2.0	2.5	2.3
28	2.0	2.8	2.3	2.3	2.5	2.5	2.3	161	2.3	2.0	2.5	2.3
29	2.0	2.5	2.3	2.3		2.5	2.0	103	2.3	2.0	2.3	2.3
30	2.0	2.5	2.3	2.3		2.3	2.0	56	2.3	2.0	2.3	2.3
31	2.0		2.3	2.3		2.3		33		2.3	2.5	
Total	618	685	771	755	659	758	690	1980.9	1380.4	712	705	735
Mean	1.99	2.28	2.49	2.44	2.35	2.45	2.30	63.9	46.0	2.34	2.27	2.45
Max.	2.0	3.0	3.0	3.0	2.5	2.8	2.5	296	166	2.5	2.5	3.0
Min.	1.8	2.0	2.3	2.3	2.0	2.3	2.0	2.0	2.0	2.0	1.8	2.3
Ac-ft	123	196	153	150	131	150	137	3,930	2,785	141	140	146
Calendar year 1960:			Max 618	Min 1.5	Mean 28.4			Acre-feet 20,640				
Water year 1960-61:			Max 296	Min 1.8	Mean 11.2			Acre-feet 6,060				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-2990. Melones Reservoir at Melones Dam, Calif.

Location.--Lat 37°57'15", long 120°30'45", near center of sec.11, T.1 N., R.13 E., at gate tower near left bank at Melones Dam on Stanislaus River, 0.1 mile downstream from Bear Creek, and 7.5 miles southeast of Sonora.

Drainage area.--897 sq mi.

Records available.--1926 (year-end content only, published in WSP 1315-A), June 1927 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Gas & Electric Co.). Prior to Feb. 28, 1961, staff gage at same site and datum.

Extremes.--Maximum contents during year, 80,400 acre-ft May 29 (elevation, 715.6 ft); minimum observed, 3,740 acre-ft Oct. 3 (elevation, 616.3 ft).

1927-61: Maximum contents observed, 115,800 acre-ft May 27, 1951 (elevation, 736.7 ft); minimum observed, 3,220 acre-ft Dec. 7, 1957 (elevation, 613.5 ft).

Remarks.--Reservoir is formed by concrete overflow dam; storage began Aug. 21, 1926; dam completed in December 1926. Capacity for power development 1 mile below dam is 106,100 acre-ft between elevations 628.0 (minimum operating level) and 735.0 ft (top of drum-type spillway gates) above mean sea level; usable capacity for irrigation, 110,000 acre-ft between elevations 610.0 (floor of outlet tunnel) and 735.0 ft above mean sea level. Figures given herein represent total contents, of which 2,630 acre-ft is not available for release. Released water flows down Stanislaus River to Goodwin Dam, where it is diverted into Oakdale and South San Joaquin Canals for irrigation.

Cooperation.--Records of contents Oct. 1 to Feb. 27 furnished by Pacific Gas & Electric Co. and elevation record Feb. 28 to Sept. 30 furnished by Oakdale Irrigation District, in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-feet)

615	3,500	640	10,700	680	37,600
620	4,480	645	12,900	690	47,600
625	5,650	650	15,400	700	59,100
630	7,070	660	21,500	710	72,200
635	8,750	670	28,900	720	86,900

Contents, in thousands of acre-feet, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.28	11.5	36.1	21.0	40.6	52.6	68.9	68.0	76.7	49.5	11.4	10.7
2	3.97	12.5	35.0	22.0	40.9	50.2	70.5	67.6	75.8	48.2	11.3	10.8
3	3.74	13.5	34.2	22.9	41.8	49.8	71.6	67.1	75.8	46.7	11.3	10.8
4	3.88	14.5	32.8	23.2	42.7	50.3	71.6	66.6	75.9	45.0	11.2	10.9
5	4.87	15.6	30.7	24.1	43.3	50.5	70.9	65.9	75.2	43.1	11.2	11.0
6	6.05	16.6	29.3	25.1	43.8	51.2	69.8	65.8	74.6	41.3	11.2	10.6
7	7.17	17.6	27.5	26.0	44.3	51.9	68.5	66.3	74.9	39.6	11.2	9.99
8	8.39	18.6	25.5	27.0	44.9	52.6	67.1	67.6	74.6	37.9	11.2	9.41
9	9.53	19.4	23.8	27.9	45.4	53.3	66.2	69.0	74.2	36.6	11.3	8.75
10	10.5	20.1	23.6	28.8	45.9	54.2	65.3	70.7	74.5	34.9	11.4	8.25
11	11.4	21.1	23.7	29.8	46.4	54.6	64.4	72.5	73.9	33.1	11.4	7.91
12	12.5	21.9	23.8	30.8	47.6	55.4	63.8	72.8	72.8	31.1	11.4	7.78
13	13.5	23.0	21.9	31.7	48.7	56.0	63.2	72.8	71.5	29.2	11.4	7.65
14	14.4	24.1	20.1	32.6	49.5	56.9	62.7	72.8	70.0	28.0	11.5	7.61
15	14.5	25.3	18.3	33.0	50.3	58.0	62.7	72.9	69.1	26.7	11.4	7.78
16	14.0	26.4	16.5	33.6	51.0	59.0	62.8	72.8	68.3	25.4	11.4	7.88
17	13.4	27.5	17.1	34.2	51.5	60.2	63.5	72.6	67.0	24.1	11.4	7.88
18	12.9	28.4	18.2	34.7	52.2	61.3	64.4	72.6	65.5	22.8	11.4	7.65
19	12.3	29.3	19.1	35.2	53.0	62.5	64.5	72.8	64.5	21.5	11.3	7.65
20	11.7	30.2	17.3	35.6	53.7	63.5	63.6	73.2	63.5	20.1	10.9	7.49
21	11.1	31.3	15.4	35.8	54.2	64.6	62.8	73.5	62.5	18.8	10.7	7.85
22	11.0	32.3	13.5	36.4	54.8	65.9	62.5	74.2	61.0	17.4	10.7	8.50
23	10.9	33.2	13.2	36.7	55.3	67.5	62.2	76.1	59.6	16.0	10.8	9.00
24	10.8	34.2	13.8	36.9	56.0	69.3	62.2	78.3	58.2	14.6	10.9	9.15
25	10.8	35.0	15.6	37.2	56.6	70.9	62.6	79.0	57.6	13.1	11.0	9.57
26	10.7	36.0	16.5	37.8	57.4	72.2	63.1	79.0	56.4	11.8	11.1	10.2
27	10.7	37.3	17.7	38.3	57.9	72.2	63.8	79.6	55.4	11.0	11.1	10.8
28	10.7	38.4	17.9	38.8	54.9	70.8	64.9	78.6	54.2	11.0	11.0	11.0
29	10.8	39.5	18.0	39.3	—	69.3	66.0	79.6	52.3	11.1	10.8	11.2
30	10.8	38.1	19.0	39.7	-----	67.8	67.2	78.7	50.7	11.2	10.8	11.4
31	10.9	-----	20.0	40.1	-----	67.5	-----	78.1	-----	11.4	10.7	-----
(†)	640.5	680.6	657.7	682.7	696.4	706.6	706.4	714.1	692.8	641.6	640.1	641.6
(‡)	+6,810	+27,200	-18,100	+20,100	+14,800	+12,600	-300	+10,900	-27,400	-39,300	-700	+700

Calendar year 1960..... ‡ +9,200

Water year 1960-61..... ‡ +7,310

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

Note.--Contents at 8 a.m., Oct. 1 to Feb. 27, and at 12 p.m. Feb. 28 to Sept. 30.

11-2995. Stanislaus River below Melones powerhouse, Calif.

Location.--Lat 37°56'50", long 120°31'45", near line between secs.10 and 15, T.1 N., R.13 E., on right bank 300 ft downstream from powerhouse, 0.5 mile upstream from Bean Gulch, 1 mile downstream from Melones Dam, and 8.4 miles southwest of Sonora.

Drainage area.--898 sq mi.

Records available.--January 1931 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map).

Average discharge.--30 years, 1,476 cfs (1,069,000 acre-ft per year).

Extremes.--Maximum discharge during year, not determined, probably occurred Apr. 6, during period of backwater from Tulloch Reservoir; maximum gage height, 10.89 ft June 25 (backwater from Tulloch Reservoir); minimum daily discharge, 1.2 cfs Sept. 25-27.
1931-61: Maximum discharge, 62,800 cfs Dec. 23, 1955 (gage height, 29.0 ft, from floodmarks), from rating curve extended above 14,000 cfs on basis of computed flow over Melones Dam; minimum daily, 0.4 cfs Jan. 19, 20, 1943.

Remarks.--Records good except those for periods of no gage-height record or backwater from Tulloch Reservoir, which are fair. Flow regulated by Melones Reservoir (see preceding page), Pinecrest Lake, Beardsley Lake, Lyons, Relief, and Donnellis Reservoirs (combined capacity, 312,300 acre-ft). Several diversions above station. Backwater from Tulloch Reservoir affects record at times since storage began on Nov. 25, 1957.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating tables, except for period of backwater from Tulloch Reservoir (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 29

Nov. 30 to Sept. 30

2.1	1.8	3.0	55	2.1	0.7	3.3	102
2.2	3.7	3.5	142	2.2	2.5	3.6	165
2.3	6.5	4.0	275	2.3	5.0	4.0	285
2.4	10	4.5	460	2.4	8.5	4.5	480
2.6	20	5.0	690	2.6	18	5.0	720
2.8	35	6.0	1,260	2.8	32	6.0	1,320
				3.0	54	7.0	2,100

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34.5	a 9.3	1.520	2.5	3.3	1.470	3.0	700	1.510	1.110	695	444
2	20.9	a 8.3	1.510	2.5	3.8	1.550	3.0	1.410	1.210	1.110	695	423
3	14.7	a 7.2	1.510	3.51	4.3	917	550	1.420	780	1.220	690	423
4	10.5	a 6.2	1.500	a 2.5	3.5	3.0	1.450	1.420	780	1.280	690	419
5	10	a 5.4	1.490	a 2.3	3.3	3.0	1.600	1.410	1.230	* 1.300	690	415
6	2.6	a 4.3	1.480	a 2.1	3.3	3.0	1.650	1.280	1.100	1.350	690	610
7	2.4	a 3.3	1.470	a 2.0	3.0	2.8	1.600	753	800	1.350	690	700
8	2.4	* 2.4	1.470	a 1.8	3.0	2.8	1.600	500	800	1.320	690	695
9	2.6	a 2.6	a 9.96	a 1.6	3.0	2.5	1.600	505	810	1.320	690	690
10	3.1	2.6	a 4.49	* 1.6	2.8	2.5	1.600	510	770	1.260	690	650
11	5.4	2.8	a 4.49	1.6	3.8	2.5	* 1.600	730	1.280	1.360	* 705	566
12	6.2	4.0	a 9.60	1.8	3.5	2.3	1.600	1.080	1.260	1.360	725	512
13	6.5	3.7	a 1.390	1.8	3.3	2.3	1.600	1.080	1.340	1.180	720	502
14	6.5	3.1	a 1.380	1.8	3.3	2.3	1.400	1.080	1.310	1.100	725	423
15	6.9	2.9	a 1.380	1.8	3.3	4.0	1.200	1.170	900	1.100	725	254
16	6.9	2.9	a 7.35	2.0	* 3.3	4.1	1.200	1.230	940	1.110	720	214
17	7.2	2.8	a 3.0	2.3	3.3	4.5	1.000	1.230	1.340	1.100	730	320
18	7.2	2.9	a 3.0	3.3	3.0	3.8	1.100	* 1.230	1.180	1.090	730	383
19	7.6	2.9	a 8.64	2.3	3.0	3.0	1.200	1.140	1.070	1.090	730	244
20	7.6	2.8	a 1.380	2.1	3.0	3.3	1.500	1.060	1.070	1.060	725	329
21	7.9	2.8	a 1.360	2.0	3.0	3.1	1.400	1.060	1.050	1.060	580	100
22	7.9	2.8	a 1.170	2.0	3.0	* 2.8	1.300	1.040	1.180	1.040	440	1.6
23	8.3	6.5	2.8	2.0	3.0	2.8	1.300	535	1.200	1.040	407	1.4
24	8.3	2.9	2.8	2.0	3.0	3.0	900	300	1.180	1.030	407	1.4
25	8.6	2.9	2.8	2.1	3.0	3.8	800	1.110	880	1.040	407	1.2
26	8.6	5.7	2.8	3.5	2.8	3.5	800	1.200	645	1.050	407	1.2
27	9.0	4.3	2.5	3.3	642	738	750	800	1.080	860	440	1.2
28	9.0	3.1	3.69	2.5	1.480	1.330	750	800	1.160	600	507	14.9
29	9.3	a 6.92	2.5	2.5	—	1.320	1.450	1.230	1.290	635	534	274
30	9.3	a 1.530	2.5	2.8	—	1.340	700	1.220	1.210	665	507	274
31	9.3	—	2.5	3.3	—	760	—	1.080	—	690	466	—
Total	992.6	2,335.4	24,859.2	418.7	2,205.9	9,496.1	35,206.0	31,313	32,355	33,880	19,247	10,021.0
Mean	32.4	77.8	802	13.5	78.6	306	1,174	1,010	1,078	1,093	621	334
Max.	34.5	1,530	1,520	351	1,480	1,550	1,650	1,420	1,510	1,360	730	700
Min.	2.4	2.4	2.5	1.6	2.8	2.3	3.0	300	645	600	407	1.2
Ac-ft	1,970	4,630	49,310	830	4,380	18,840	69,830	62,110	64,180	67,200	38,180	19,880

Calendar year 1960:

Max 1,700

Min 2.4

Mean 759

Acre-feet 550,900

Water year 1960-61:

Max 1,650

Min 1.2

Mean 554

Acre-feet 401,300

* Discharge measurement made on this day.

a No gage-height record.

Note.--Backwater from Tulloch Reservoir Mar. 31 to Apr. 30.

SAN JOAQUIN RIVER BASIN

11-2999.95 Tulloch Reservoir near Knights Ferry, Calif.

Location.--Lat 37°52'30", long 120°36'15", in SW $\frac{1}{4}$ sec.1, T.1 S., R.12 E., in center of dam 1.6 miles upstream from Goodwin Dam, and 5.3 miles northeast of Knights Ferry.

Drainage area.--97 $\frac{1}{2}$ sq mi.

Records available.--November 1957 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Oakdale and South San Joaquin Irrigation Districts).

Extremes.--Maximum contents during year, 66,800 acre-ft June 24 (elevation, 509.9 ft); minimum, 4,580 acre-ft Oct. 3 (elevation, 404.0 ft).

1957-61: Maximum contents, 68,200 acre-ft July 10, 1958 (elevation, 511.0 ft); minimum, that of Oct. 3, 1960.

Remarks.--Reservoir is formed by gravity-type concrete dam completed in October 1957. Capacity, 56,840 acre-ft between elevations 431.0 ft (normal minimum water surface) and 511.0 ft (top of radial gates) above mean sea level.

Reservoir is used for conservation and power. Water passes down Stanislaus River, some first passing through power plant at dam. Part of flow is diverted at Goodwin dam to Oakdale Canal (see p. 660) and South San Joaquin Canal (see p. 659). Records including extremes, show total contents at 12 p.m.

Capacity table (elevation, in feet, and contents, in acre-ft)

404	4,580	460	23,600
411	6,020	475	33,100
420	8,200	490	45,300
430	11,100	500	55,300
445	16,400	510	67,000

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,930	20,600	23,200	53,900	50,500	46,500	57,500	63,800	66,200	65,600	52,600	15,500
2	4,710	20,400	25,200	53,700	50,500	48,600	56,800	64,200	66,600	65,400	51,300	15,200
3	4,580	20,300	27,100	54,200	50,500	50,400	56,600	64,700	66,200	65,400	50,100	14,900
4	4,670	20,200	29,100	54,100	50,400	50,300	57,300	65,500	65,700	65,600	48,900	14,700
5	4,640	20,000	31,000	53,900	50,300	50,300	57,800	65,600	66,200	65,700	47,600	14,400
6	4,640	19,900	33,100	53,700	50,300	50,300	58,500	65,800	66,300	66,000	46,400	14,500
7	4,640	19,800	35,100	53,600	50,200	50,400	59,100	66,100	66,000	66,100	45,200	14,700
8	4,640	19,600	37,000	53,300	50,100	50,300	59,600	65,700	65,800	66,200	43,900	15,000
9	4,640	19,400	38,200	52,900	50,000	50,400	60,200	65,400	65,800	66,000	42,700	15,200
10	4,640	19,300	38,300	52,800	49,900	50,400	60,800	65,000	65,100	65,800	41,500	15,400
11	4,640	19,100	38,300	52,600	49,900	50,200	61,400	65,000	64,900	66,000	40,400	15,400
12	4,640	19,100	39,300	52,400	49,800	50,200	62,000	65,100	65,200	66,100	39,300	15,300
13	4,600	19,000	41,300	52,300	49,700	50,200	62,600	65,200	65,800	66,000	38,300	15,200
14	4,790	18,800	43,200	52,000	49,600	50,100	62,900	65,200	66,500	65,500	37,200	15,000
15	6,090	18,700	45,100	51,800	49,600	50,300	63,000	65,200	66,100	65,000	36,100	14,400
16	7,380	18,500	45,900	51,700	49,500	50,900	63,300	65,500	65,800	64,500	35,100	13,700
17	8,650	18,400	45,700	51,700	49,400	50,400	63,500	65,800	66,500	64,000	34,000	13,300
18	9,890	18,200	45,500	51,600	49,300	50,400	63,400	66,100	66,700	63,400	32,900	13,000
19	11,100	18,100	46,900	51,400	49,200	50,500	63,300	66,200	66,600	63,000	31,900	12,400
20	12,300	18,000	49,500	51,300	49,100	50,500	63,800	66,200	66,500	62,600	30,800	12,000
21	13,300	17,900	52,000	51,100	49,000	50,500	64,000	66,200	66,300	62,100	29,600	11,700
22	14,200	17,800	54,200	51,000	49,000	50,400	64,600	66,200	66,600	61,700	28,200	11,700
23	14,900	17,600	54,000	50,900	48,900	50,400	65,500	66,200	66,700	61,300	26,600	11,700
24	15,700	17,500	53,900	50,900	48,000	50,500	65,600	63,900	66,800	60,900	25,100	11,400
25	16,500	17,400	53,700	50,800	46,300	50,600	65,600	64,100	66,300	60,400	23,600	11,400
26	17,200	17,400	53,500	50,800	44,600	50,600	65,600	64,500	65,700	60,000	22,000	11,200
27	18,000	17,300	54,000	50,700	44,200	50,700	65,500	64,100	65,600	59,200	20,500	11,000
28	18,700	17,200	54,600	50,700	45,300	53,600	65,400	63,800	65,600	57,800	19,200	11,100
29	19,400	18,300	54,400	50,700	—	55,500	65,100	64,200	65,800	56,400	17,900	11,600
30	20,100	20,800	54,200	50,600	—	57,400	64,100	64,700	65,800	55,100	16,700	12,100
31	20,700	—	54,000	50,500	—	58,300	—	65,000	—	53,800	15,900	—
(†)	454.5	454.7	498.8	495.4	490.0	502.7	507.7	508.4	509.1	498.6	443.7	433.2
(‡)	+15,700	+100	+33,200	-3,500	-5,200	+13,000	+5,800	+900	+800	-12,000	-37,900	-3,800

Calendar year 1960..... ‡ +41,500

Water year 1960-61..... ‡ +7,090

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

SAN JOAQUIN RIVER BASIN

659

11-3005. South San Joaquin Canal near Knights Ferry, Calif.

Location.--Lat 37°51'10", long 120°38'15", in sec.15, T.1 S., R.12 E., on left bank 0.8 mile downstream from headgate at Goodwin Dam and 3 miles upstream from Knights Ferry.

Records available.--May 1914 to September 1961. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder and concrete control. Datum of gage is 334.18 ft above mean sea level (levels by Oakdale Irrigation District). Prior to Mar. 12, 1915, staff gage 100 ft downstream. Mar. 12, 1915, to July 1, 1921, staff gage at present site and datum.

Average discharge.--47 years, 397 cfs (287,400 acre-ft per year).

Extremes.--1914-61: Maximum daily discharge, 1,290 cfs June 9, 14, 15, 1960; no flow at times each year except 1951.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. Canal diverts from right bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale and South San Joaquin irrigation districts.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	261	0.3	310	2.4	1	*821	368	887	*712	850	930	330
2	292	.7	478	2.4	1	437	368	896	714	853	926	270
3	*174	.8	420	1.7	1	1.7	584	*901	716	*856	919	272
4	109	.9	436	1.0	1	2.1	847	902	721	856	912	272
5	5.6	1.0	437	1.0	1	2.3	857	903	723	853	913	270
6	4.2	1.0	*420	2.3	1	2.1	860	871	723	873	922	270
7	3.6	1.0	415	1.7	1	1.9	861	696	724	947	919	265
8	3.9	1.4	415	.9	.5	2.3	861	707	724	948	913	265
9	3.4	1.7	418	1.0	.5	2.3	861	721	724	948	912	265
10	2.8	1.9	413	.9	1.0	1.4	861	668	723	947	892	265
11	4.9	1.9	411	.8	.7	2.1	861	698	723	947	892	265
12	70	1.0	325	1.9	.8	3.4	863	748	734	948	888	265
13	3.9	.8	300	0	.7	3.1	842	749	737	945	885	264
14	1.9	.7	363	0	1.5	2.8	755	751	735	945	891	264
15	1.4	.5	386	0	3.1	2.8	737	782	734	947	885	261
16	.8	.5	250	0	2.8	2.3	740	770	735	947	885	261
17	.3	.5	5.6	0	2.1	2.4	*755	758	738	947	887	260
18	.2	.5	8.6	.3	1.2	2.4	829	756	741	950	885	253
19	.2	.5	5.6	1.7	1.7	2.4	874	726	741	950	884	250
20	.3	.5	3.6	2.7	1.9	1.9	880	674	741	950	884	240
21	.5	.5	3.9	1.4	1.7	1.5	885	658	742	937	859	129
22	.2	.5	3.9	1.4	1.2	1.4	777	654	744	930	856	60
23	.1	.5	3.9	.7	.9	1.9	765	653	747	930	857	59
24	.1	.4	1.9	.5	3.29	1.9	765	668	752	930	857	53
25	.2	.3	.9	.5	826	1.5	765	735	751	931	857	56
26	.2	.3	1.4	.5	826	1.5	758	734	751	926	856	48
27	.3	.3	2.1	.5	819	202	766	734	751	927	863	48
28	.3	.3	2.3	.5	818	366	769	734	752	927	861	52
29	.3	.2	2.3	.5	-	366	796	735	824	927	861	52
30	.2	.2	3.4	.5	-	368	873	738	850	926	822	48
31	.2	-	2.3	.5	-	368	-	724	-	931	616	-
Total	990.1	21.6	6248.7	50.2	3647.3	2979.4	23383	23331	22227	28629	27189	5932
Mean	31.9	0.72	202	0.97	130	96.1	779	753	741	924	877	198
Max.	292	1.9	478	2.7	826	821	885	903	850	950	930	330
Min.	0.1	0.2	0.9	0	0.5	1.4	368	653	712	850	616	48
Ac-ft	1,960	43	12,390	60	7,230	5,910	46,380	46,280	44,090	56,780	53,930	11,770
Calendar year 1960 :				Max 1,290	Min 0		Mean 507			Acre-feet 368,200		
Water year 1960-61 :				Max 950	Min 0		Mean 396			Acre-feet 286,800		

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 24 to Feb. 9.

SAN JOAQUIN RIVER BASIN

11-3010. Oakdale Canal near Knights Ferry, Calif.

Location.--Lat 37°51'30", long 120°38'00", in SE $\frac{1}{4}$ sec.10, T.1 S., R.12 E., on left bank 1,835 ft downstream from headgate at Goodwin Dam and 4 miles upstream from Knights Ferry.

Records available.--May 1914 to September 1961. Records for water years 1933-36 incomplete, monthly and yearly estimates published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map). Prior to Apr. 29, 1916, staff gage at site 1,000 ft upstream at different datum. Apr. 29, 1916, to July 3, 1925, staff gage and July 4, 1925, to Apr. 3, 1949, water-stage recorder, at present site at datum 0.18 ft higher.

Average discharge.--47 years, 141 cfs (102,100 acre-ft per year).

Extremes.--1914-61: Maximum daily discharge, 545 cfs Aug. 7, 1958; no flow at times in each year.

Remarks.--Records good. Canal diverts water from left bank of Stanislaus River at Goodwin Dam for irrigation in Oakdale Irrigation District.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	2.3	2.5	0	0	0	0	357	*327	376	377	310
2	6.4	6.8	2.3	0	.1	0	0	375	324	378	*376	310
3	*2.8	*6.8	2.3	0	0	0	*68	*377	332	379	379	312
4	4.2	6.8	2.3	0	0	0	320	377	341	380	382	311
5	5.6	6.8	2.3	0	0	0	388	377	342	378	382	*309
6	5.6	6.8	2.2	0	0	0	404	345	342	376	382	312
7	5.3	5.2	2.2	0	0	0	404	5.0	342	376	382	314
8	5.3	5.0	2.0	0	0	3.4	404	10	342	376	382	315
9	5.3	5.0	2.0	0	0	11	404	14	342	378	381	317
10	5.0	5.0	2.0	0	0	7.3	404	13	342	378	358	317
11	2.3	5.3	2.0	0	0	5.0	404	84	342	378	355	316
12	.2	5.3	1.2	0	0	5.0	404	277	354	378	355	315
13	.2	5.0	0	6.2	0	3.6	403	314	358	377	355	315
14	.2	4.2	0	20	0	3.6	395	322	357	377	355	315
15	.5	3.6	0	6.3	0	1.5	366	388	358	378	354	324
16	.8	3.6	0	0	0	0	272	387	358	378	356	328
17	1.0	3.2	7.5	0	0	.3	240	388	359	379	355	332
18	1.1	3.2	4.2	0	0	.1	283	388	360	379	355	336
19	1.3	3.2	0	0	0	.7	343	388	360	379	355	339
20	1.3	3.2	0	0	0	16	368	387	360	378	354	345
21	1.1	3.2	0	0	0	26	376	371	363	377	315	182
22	1.1	3.2	0	0	0	19	190	363	371	377	309	1.0
23	1.6	2.8	0	0	0	8.1	54	362	371	376	309	0
24	2.0	2.8	0	0	0	.1	42	360	375	377	309	0
25	3.9	2.8	0	0	0	.1	27	327	375	377	309	0
26	5.0	2.8	0	0	0	.1	26	327	376	376	309	0
27	1.0	2.3	0	0	0	.1	27	328	377	377	309	0
28	.7	2.3	8.4	0	0	.2	27	328	377	376	308	0
29	.7	2.3	15	0	-	.3	81	329	377	376	308	0
30	.5	2.3	27	0	-	.3	301	330	376	376	309	0
31	.4	2.3	15	0	-	.1	332	332	377	377	309	0
Total	86.4	123.1	102.4	32.5	0.1	111.9	742.5	933.0	1068.0	1169.8	1073.3	6575.0
Mean	2.79	4.10	3.30	1.05	0.003	3.61	248	301	356	377	346	219
Max.	14	6.8	27	20	0.1	26	404	388	377	380	382	347
Min.	0.2	2.3	0	0	0	0	0	5.0	324	376	308	0
Ac-ft	171	244	203	64	0.2	222	14,730	18,510	21,180	23,203	21,290	13,040
Calendar year 1960:			Max	544	Min	0	Mean	205	Acre-feet	148,800		
Water year 1960-61:			Max	404	Min	0	Mean	156	Acre-feet	112,900		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

661

11-3020. Stanislaus River below Goodwin Dam, near Knights Ferry, Calif.

Location.--Lat 37°51'00", long 120°38'15", in W $\frac{1}{2}$ sec.15, T.1 S., R.12 E., on right bank 0.1 mile downstream from Owl Creek, 1.0 mile downstream from Goodwin Dam, and 3 miles northeast of Knights Ferry.

Drainage area.--980 sq mi.

Records available.--February 1957 to September 1961. Records equivalent to those published as Stanislaus River at Knights Ferry, 1903-14, and as Stanislaus River near Knights Ferry, 1915-32, if adjusted for diversions in Stanislaus and San Joaquin Water Company's canal, and Oakdale and South San Joaquin canals.

Gage.--Water-stage recorder. Datum of gage is 252.83 ft above mean sea level.

Extremes.--Maximum discharge during year, 219 cfs Jan. 8 (gage height, 7.84 ft); minimum daily, 0.3 cfs Oct. 1.

1957-61: Maximum discharge, 12,200 cfs Apr. 4, 1958 (gage height, 17.25 ft), from rating curve extended above 6,000 cfs; minimum daily, 0.3 cfs Sept. 13, 14, Oct. 1, 1960.

Flood of Dec. 23, 1955, reached a peak discharge of 62,900 cfs (gage height, unknown), by computation of flow over Goodwin Dam.

Remarks.--Records good. Flow regulated by reservoirs and powerplants at Donnellis, Beardsley Lake, Melones, Tulloch, and several smaller reservoirs above station. South San Joaquin Canal (see p. 659) and Oakdale Canal (see p. 660) divert at Goodwin Dam 1.0 mile upstream.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 24 to Nov. 6)

6.1	0	6.7	9.8
6.2	0.4	6.8	16
6.3	1.0	6.9	25
6.4	1.9	7.1	52
6.5	3.3	7.4	111
6.6	5.8	7.8	226

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	4.9	6.0	7.9	4.4	2.3	1.0	1.8	1.4	1.7	1.9	1.1
2	3.1	4.8	6.6	7.9	*4.3	2.4	1.0	2.1	1.3	1.7	*1.9	.9
3	*5.5	*4.9	8.5	8.1	4.3	1.2	9.8	2.1	1.3	1.7	1.9	.9
4	3.3	5.0	7.7	8.1	4.3	1.1	8.2	2.0	1.3	1.7	1.9	.9
5	4.6	5.2	7.5	*8.1	4.3	1.1	9.0	2.1	1.3	1.7	1.9	*.8
6	4.9	5.4	*7.3	7.9	4.3	1.1	9.0	2.3	1.3	*1.7	1.9	.8
7	4.9	5.5	6.2	8.1	4.3	1.1	9.0	1.6	1.3	1.8	1.9	.7
8	4.6	5.4	4.4	13.0	4.3	1.1	9.0	.9	1.3	1.8	1.8	.8
9	4.6	5.5	4.4	16.3	4.2	1.0	9.0	.8	1.3	1.8	1.8	.8
10	4.6	5.5	4.4	7.7	4.3	1.0	9.0	.8	1.2	1.7	1.7	.8
11	1.2	6.0	4.4	8.1	4.3	9.4	9.0	.7	1.2	1.7	1.6	.8
12	1.6	6.2	12.0	8.3	4.3	9.0	9.4	1.0	1.3	1.7	1.7	.9
13	1.3	6.4	14.6	8.3	4.3	9.0	9.0	1.3	1.3	1.7	1.7	.9
14	1.3	*6.2	8.1	6.9	4.3	9.0	8.6	1.3	1.3	1.7	1.6	.8
15	1.3	6.4	5.4	7.9	4.2	1.0	7.8	1.7	1.3	1.7	1.8	.9
16	1.3	6.4	4.9	5.9	4.2	9.8	7.4	1.8	1.3	1.7	1.8	.9
17	1.6	6.2	4.9	4.8	4.3	1.0	7.4	1.7	1.3	1.7	1.8	.9
18	2.3	6.4	5.0	5.7	4.3	9.8	7.8	1.7	1.3	1.7	1.8	.9
19	2.3	6.2	7.7	5.4	4.3	9.8	5.5	1.7	1.3	1.7	1.8	.9
20	2.3	6.0	8.3	5.7	4.3	9.8	2.3	1.7	1.3	1.8	1.7	.9
21	2.9	6.0	8.3	5.7	4.3	9.8	2.3	1.7	1.3	1.8	1.5	3.0
22	4.0	5.7	8.3	5.7	4.3	9.8	2.3	1.6	1.4	1.8	1.3	7.8
23	4.2	5.7	8.5	4.9	4.3	9.8	1.4	1.5	1.4	1.8	1.3	7.8
24	4.6	5.7	8.5	4.4	5.0	9.8	1.2	1.5	1.4	1.8	1.3	7.4
25	5.0	5.7	8.5	4.3	3.1	9.8	1.0	1.4	1.5	1.8	1.3	7.4
26	5.0	5.9	8.7	4.4	2.4	9.8	1.0	1.3	1.5	1.8	1.3	7.8
27	5.0	5.7	8.7	4.4	2.4	9.8	.9	1.4	1.5	1.8	1.3	7.8
28	5.0	5.7	8.1	4.4	2.3	1.0	.9	1.3	1.5	1.8	1.3	7.8
29	4.9	5.7	7.5	4.3	-	1.0	.9	1.4	1.5	1.8	1.3	7.8
30	4.9	5.5	5.9	4.2	-	1.0	1.3	1.3	1.6	1.8	1.3	7.8
31	4.9	-	6.2	4.3	-	1.0	-	1.6	-	1.8	1.2	-
Total	709.4	1718	2255	2111	1139	338.2	179.4	47.1	40.5	54.2	50.3	89.7
Mean	22.9	57.3	72.7	68.1	40.7	10.9	5.98	1.52	1.35	1.75	1.62	2.99
Max.	5.0	6.4	14.6	16.3	5.0	2.4	1.0	2.3	1.6	1.8	1.9	7.8
Min.	0.3	4.8	4.4	4.8	2.3	9.0	0.9	0.7	1.2	1.7	1.2	0.7
Ac-ft	1,410	3,410	4,470	4,190	2,260	671	356	93	80	108	100	178

Calendar year 1960: Max 18.4 Min 0.6 Mean 17.6 Acre-feet 12,800
Water year 1960-61: Max 16.3 Min 0.3 Mean 23.9 Acre-feet 17,330

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3030. Stanislaus River at Ripon, Calif.

Location.--Lat 37°43'50", long 121°06'35", in SE $\frac{1}{4}$ sec.29, T.2 S., R.8 E., on left bank 15 ft downstream from railroad bridge, 1 mile southeast of Ripon and 15 miles upstream from mouth.

Records available.--October 1940 to September 1961 in reports of Geological Survey. April to September 1940 in reports of California Department of Water Resources.

Gage.--Water-stage recorder. Datum of gage is 0.72 ft (revised) above mean sea level, datum of 1929, adjustment of 1959. Prior to Nov.-17, 1953, at site 100 ft upstream at same datum.

Average discharge.--21 years, 1,039 cfs (752,200 acre-ft per year).

Extremes.--Maximum discharge during year, 259 cfs Jan. 11 (gage height, 38.37 ft); minimum, 40 cfs July 21.

1940-61: Maximum discharge, 62,500 cfs Dec. 24, 1955 (gage height, 63.25 ft); minimum, that of July 21, 1961.

Flood of Feb. 12, 1938, reached a stage of 64.4 ft, from floodmarks. Flood of Apr. 1, 1940, reached a stage of 61.1 ft, from floodmarks.

Remarks.--Records good. Flow regulated by reservoirs and power plants above station (see Remarks for station below Goodwin Dam near Knights Ferry). South San Joaquin Canal (see p. 659) and Oakdale Canal (see p. 660) divert at Goodwin Dam 34 miles upstream. Diversions for irrigation of about 2,300 acres below Goodwin Dam and above Ripon.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Nov. 6 to Dec. 25,
Aug. 25 to Sept. 30)

36.3	38
36.8	72
37.5	141
38.3	259

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	148	163	174	217	128	96	96	74	49	54	68
2	125	146	166	166	198	125	94	100	78	48	55	70
3	124	148	171	174	224	120	91	87	75	51	58	74
4	116	159	182	180	241	119	83	84	77	56	56	84
5	111	162	188	181	200	117	90	87	77	58	51	78
6	116	166	189	181	173	112	117	95	74	55	54	74
7	127	163	185	182	160	109	89	121	70	54	56	72
8	122	163	184	181	153	107	84	119	67	51	59	72
9	119	*160	182	180	150	106	87	96	66	60	55	69
10	116	159	171	198	149	104	90	88	65	57	54	74
11	112	160	162	253	148	101	87	75	71	51	58	72
12	110	162	158	209	145	98	83	74	70	53	54	63
13	113	167	155	189	142	96	*84	78	67	59	60	65
14	109	171	177	187	142	*96	92	81	74	54	69	*64
15	112	171	237	184	142	96	91	87	64	55	59	65
16	115	167	222	178	*144	101	85	82	63	56	57	70
17	*113	164	188	177	141	106	86	81	59	*51	56	71
18	115	164	168	*177	141	106	84	90	58	47	*54	78
19	117	164	*158	160	141	109	78	87	60	47	58	80
20	*118	163	153	157	141	107	86	87	59	45	63	85
21	125	162	160	158	139	102	85	94	57	42	73	84
22	127	162	174	157	*139	98	97	89	56	43	65	81
23	127	160	180	154	137	98	106	88	56	48	71	81
24	130	160	181	154	137	102	119	86	52	56	63	83
25	136	160	184	155	137	102	127	78	50	48	62	84
26	139	164	185	162	137	102	114	73	56	46	62	84
27	141	170	187	189	139	106	106	75	*52	48	74	84
28	148	170	188	243	133	106	97	91	60	46	70	89
29	150	170	188	195	-	101	93	87	66	48	70	90
30	151	164	187	187	-	98	90	78	63	52	70	89
31	150	-	181	217	-	100	-	76	-	54	67	-
Total	3,856	4,869	5,554	5,639	4,390	3,278	2,811	2,710	1,936	1,588	1,887	2,297
Mean	124	162	179	182	157	106	93.7	87.4	64.5	51.2	60.9	76.6
Max.	151	171	237	253	241	128	127	121	78	60	74	90
Min.	109	146	153	154	133	96	78	73	50	42	51	63
Ac-ft	7,650	9,660	11,020	11,180	8,710	6,500	5,580	5,380	3,840	3,150	3,740	4,560

Calendar year 1960: Max 507 Min 80 Mean 129 Acres-feet 93,760
 Water year 1960-61: Max 253 Min 42 Mean 112 Acres-feet 80,970

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

663

11-3035. San Joaquin River near Vernalis, Calif.

Location.--Lat 37°40'34", long 121°15'51", on left bank 30 ft upstream from Durham Ferry highway bridge, 3 miles downstream from Stanislaus River, and 3.4 miles northeast of Vernalis, San Joaquin County.

Drainage area.--14,010 sq mi, approximately.

Records available.--July 1922 to September 1961 (1922-23 and 1925-29, low-water records only).

Gage.--Water-stage recorder. Datum of gage is mean sea level. Prior to Oct. 1, 1959, at datum 5.06 ft above mean sea level and 8.4 ft above datum of Corps of Engineers. July 1922 to September 1946 at various sites on or within 100 ft of Durham Ferry bridge. Prior to Apr. 1, 1931, at different datum.

Average discharge.--33 years (1924, 1929-61), 4,532 cfs (3,281,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,610 cfs Jan. 29 (elevation, 12.56 ft); minimum, 19 cfs Aug. 10.

1922-61: Maximum discharge recorded, about 79,000 cfs Dec. 9, 1950 (elevation, 32.81 ft, present datum), including flow through breaks in levee; minimum, that of Aug. 10, 1961.

Remarks.--Records good. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation; low flows consist mainly of return flow from irrigated areas.

Cooperation.--Two discharge measurements furnished by California Department of Water Resources.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 14 to Feb. 20, May 16-20, 28-31)

Oct. 1 to May 31		June 1 to Sept. 30	
8.9	63	8.5	30
9.4	189	8.7	72
10.0	375	9.0	144
11.0	800	9.5	270
12.4	1,640	10.0	450

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	478	830	1080	1300	1590	860	299	254	335	185	115	335
2	546	810	1130	1260	1570	795	333	263	294	199	89	360
3	542	905	1200	1150	1470	660	336	225	239	194	63	363
4	486	950	1360	1080	1440	534	257	209	239	209	54	394
5	494	1010	*1360	1230	1490	522	195	225	291	197	54	374
6	506	1080	1310	1270	1330	579	176	251	300	151	65	360
7	546	1080	1260	1280	1230	562	197	347	256	125	101	310
8	584	1080	1420	1260	1200	546	203	*466	248	110	89	304
9	584	1120	1450	1250	1200	446	186	490	237	137	36	314
10	592	1100	1430	1150	1150	350	206	458	211	151	30	324
11	562	1100	1410	1230	1120	350	*225	406	214	115	50	346
12	579	1110	1370	1290	1070	340	173	434	248	*72	63	328
13	682	1130	1310	1340	1010	375	147	403	239	59	132	276
14	750	1130	1220	1450	960	*316	*163	426	190	57	173	*237
15	840	1050	1310	1460	945	281	147	438	178	70	*190	239
16	895	1060	1350	1340	*980	299	142	392	154	101	178	262
17	*890	1040	1330	*1280	1000	319	145	375	163	101	149	262
18	795	1040	1290	1300	1000	358	*106	372	175	84	*149	291
19	765	1070	1190	1360	1000	410	*80	375	175	36	137	324
20	860	1050	1210	1370	985	446	*68	386	180	36	163	335
21	865	975	1260	1370	955	406	87	414	173	59	224	335
22	880	925	*1270	1460	955	375	132	462	146	63	224	328
23	895	955	1280	1450	970	354	179	450	137	57	214	321
24	805	1040	1270	1310	*950	358	266	438	163	96	204	346
25	660	1050	1250	1230	970	392	296	450	173	65	209	363
26	710	985	1250	1370	990	400	260	450	214	68	194	332
27	790	885	1240	1420	935	478	242	406	*180	63	194	310
28	835	900	1220	1530	845	486	245	375	146	*72	248	321
29	880	925	1260	1580	—	462	254	392	144	61	279	318
30	905	990	1300	1560	—	372	245	378	170	91	296	321
31	890	—	1310	1560	—	350	—	*361	—	132	304	—
Total	22,091	30,375	39,900	41,490	31,310	13,761	5,990	11,771	6,212	3,216	4,670	9,633
Mean	713	1,012	1,287	1,338	1,118	444	200	380	207	104	151	321
Max.	905	1,130	1,450	1,580	1,590	860	336	490	335	209	304	394
Min.	478	810	1,080	1,080	845	281	68	209	137	36	30	237
Ac-ft	43,820	60,250	79,140	82,290	62,100	27,290	11,880	23,350	12,320	6,380	9,260	19,110
Calendar year 1960:			Max 3,100	Min 143		Mean 749		Acres-feet 543,900				
Water year 1960-61:			Max 1,590	Min 30		Mean 604		Acres-feet 437,200				

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3040. Corral Hollow Creek near Tracy, Calif.

Location.--Lat 37°39'24", long 121°28'40", in SE 1/4 sec. 24, T.3 S., R.4 E., on left bank just upstream from highway bridge, 0.8 mile downstream from Elk Ravine, and 6.3 miles southwest of Tracy.

Drainage area.--61.6 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 330 ft (from topographic map).

Extremes.--Maximum discharge during year, 8.5 cfs Jan. 26 (gage height, 1.69 ft); no flow for several months.

1958-61: Maximum discharge, 129 cfs Feb. 16, 1959 (gage height, 2.78 ft); no flow for several months in each year.

Remarks.--Records good. Small diversions by pumping from stream above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 26

Jan. 26 to Sept. 30

1.1	0	1.0	0
1.2	.1	1.1	.1
1.3	.4	1.2	.2
1.4	1.1	1.3	.7
1.5	2.5		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.1	0.1	0.2	0.1	0.2					
2		0	.1	.1	.4	.1	.2					
3		0	.1	.1	.2	.1	.1					
4		0	.1	.1	.1	.2	.1					
5		0	.1	.1	.1	.1	.1					
6		0	.1	.1	.1	.1	0					
7	(*)	*0	.1	.1	.1	.1	0					
8		0	.1	.1	.1	.1	0					
9		0	** .1	* .1	.1	.1	0	(*)				
10		0	.1	.2	.1	.1	* 0					
11		0	.1	.2	.2	.1	0					
12		.1	.1	.2	.2	.1	0		(*)			
13		.1	.1	.2	.2	.1	0					
14		.1	.1	.2	.1	.1	0					
15		*.1	.1	.2	.1	* .3	0					
16		.1	.1	.2	.1	.2	0					
17		.1	.1	.2	.1	.4	0					
18		.1	.1	.2	.1	.2	0				(*)	
19		.1	.1	.2	.1	.4	0					
20		.1	.1	.1	.1	.4	0					
21		.1	.1	.1	.1	.3	0					
22		.1	.1	.1	.1	.3	0					
23		.1	.1	.2	.1	.3	0					
24		.1	.1	.2	.1	.4	0					
25	(*)	.2	.1	.3	.1	.4	0					
26		.1	.1	* 1.5	.1	.4	0					
27		.1	.1	.3	.1	.5	0					
28		.1	.1	.2	.1	.5	0					
29		.1	.1	.3	.1	.3	0					
30		.1	.1	.2	.1	.2	0					
31			.1	.2	.2	.2	0					
Total	0	2.0	3.1	6.6	3.6	7.2	0.7	0	0	0	0	0
Mean	0	0.07	0.10	0.21	0.13	0.23	0.02	0	0	0	0	0
Max.	0	0.2	0.1	1.5	0.4	0.5	0.2	0	0	0	0	0
Min.	0	0	0.1	0.1	0.1	0.1	0	0	0	0	0	0
Ac-ft	0	4.0	6.1	13	7.1	14	1.4	0	0	0	0	0

Calendar year 1960 : Max 56 Min 0 Mean 0.32 Acra-foot 233

Water year 1960-61 : Max 1.5 Min 0 Mean 0.06 Acra-foot 46

Peak discharge (base, 40 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

SAN JOAQUIN RIVER BASIN

665

11-3050. San Domingo Creek near San Andreas, Calif.

Location--Lat 38°06'55", long 120°37'00", in NE $\frac{1}{4}$ sec.14, T.3 N., R.12 E., on right bank 2.5 miles upstream from mouth, 3.2 miles downstream from French Gulch, and 6.5 miles southeast of San Andreas.

Drainage area--27.1 sq mi.

• Records available--January 1950 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 1,060 ft (from topographic map). Prior to Dec. 6, 1950, staff gage and crest-stage gage at same site and datum.

Average discharge--11 years, 12.3 cfs (8,900 acre-ft per year); median of yearly mean discharges, 9 cfs (6,800 acre-ft per year).

Extremes--Maximum discharge during year, 27 cfs Mar. 17 (gage height, 1.80 ft); no flow for several months.

1950-61: Maximum discharge, 2,830 cfs Dec. 23, 1955 (gage height, 8.24 ft), from rating curve extended above 70 cfs on basis of slope-area measurement of peak flow; no flow at times in each year.

Remarks--Records good. San Domingo Creek receives water above station at times from North Fork Stanislaus River by way of Utica Reservoir. Some diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.7	0	1.1	2.9
.8	.2	1.2	4.9
.9	.8	1.4	11
1.0	1.6	1.6	18

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	4.3	1.0	2.5	1.6	6.4	1.3	1.0			
2		0	15	1.0	4.4	1.6	4.0	1.3	.9			
3		0	7.7	.9	4.9	1.6	2.6	1.2	.8			
4		0	3.3	.9	3.3	1.6	2.5	1.1	.6			
5		0	1.9	.9	2.8	1.7	2.6	1.1	.5			
6		0	1.5	1.0	2.5	2.8	2.1	1.4	.4			
7		0	1.5	1.0	2.2	3.3	1.7	2.3	.4			
8		0	1.3	1.0	2.1	2.6	1.5	1.6	.4			
9		0	1.2	1.0	1.9	2.8	1.4	1.4	.3			
10		0	1.1	1.0	1.8	2.5	1.4	1.5	.3			
11		0	1.1	1.0	2.6	2.3	1.3	1.5	.3			
12		0	1.1	1.0	4.9	2.1	1.4	1.5	.2			
13		0	1.1	1.0	3.8	2.1	1.5	1.3	.2			
14		*2.0	1.1	1.0	3.1	1.9	1.3	1.1	.1			
15		1.3	1.1	1.0	3.1	12	1.1	1.0	.1			
16		.8	1.1	1.0	3.6	12	1.0	1.0	0			
17		.7	1.0	1.0	3.1	18	1.0	1.0	0			
18		.9	1.8	1.0	2.6	11	1.0	.8	0			
19		1.0	*1.5	1.0	2.2	6.9	1.0	.8	0			
20		.7	1.0	1.0	*2.1	12	1.0	1.0	0			
21		.7	1.0	1.0	2.2	*8.9	1.0	1.0	0			
22		.7	1.0	1.0	2.2	6.4	1.9	.9	0			
23		.7	1.0	*1.0	2.1	5.3	3.1	*.8	0			
24		.8	1.0	1.0	1.9	6.1	2.9	.8	0			
25		.8	1.0	1.0	1.9	9.6	2.1	.7	0			
26		7.6	1.1	2.8	1.8	7.5	*1.6	.6	0			
27		2.5	1.1	2.8	1.8	6.6	1.6	.6	*0			
28		1.4	5.5	1.8	1.6	6.1	1.4	.6	0			
29		1.0	1.8	1.8	-	5.1	1.3	.6	0			
30		.9	1.1	2.1	4.9	4.9	1.3	.5	0			
31			1.0	2.3	4.2	4.2		.6				
Total	0	24.5	67.3	38.3	75.0	173.1	56.0	32.9	6.5	0	0	0
Mean	0	0.82	2.17	1.24	2.68	5.58	1.87	1.06	0.21	0	0	0
Max.	0	7.6	15	2.8	5.1	18	6.4	2.3	1.0	0	0	0
Min.	0	0	1.0	.9	1.6	1.6	1.0	0.5	0	0	0	0
Ac-ft	0	49	133	76	149	343	111	65	13	0	0	0

Calendar year 1960: Max 208 Min 0 Mean 3.91 Acre-feet 2,840
 Water year 1960-61: Max 18 Min 0 Mean 1.30 Acre-feet 939

Peak discharge (base, 220 cfs)--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-3060. South Fork Calaveras River near San Andreas, Calif.

Location.--Lat 38°08'40", long 120°39'50", in NW¼ sec. 4, T.3 N., R.12 E., on right bank 0.1 mile downstream from San Antonio Creek, 1.6 miles south of the Calaveras Cement Plant, and 3.7 miles south of San Andreas.

Drainage area.--118 sq mi.

Records available.--April 1950 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 860 ft (from topographic map). Prior to Feb. 13, 1952, staff gage at same site and datum.

Average discharge.--11 years, 74.1 cfs (53,650 acre-ft per year); median of yearly mean discharges, 55 cfs (39,800 acre-ft per year).

Extremes.--Maximum discharge during year, 121 cfs Mar. 17 (gage height, 2.02 ft); no flow many days.

1950-61: Maximum discharge, 17,600 cfs Dec. 23, 1955 (gage height, 10.29 ft), from rating curve extended above 3,400 cfs on basis of slope-area measurement of peak flow; no flow at times in most years.

Remarks.--Records good. Some small diversions, mainly for irrigation, above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.3	0	0.7	2.8	1.5	36
.4	.2	.8	5.0	1.8	71
.5	.6	1.0	11	2.1	140
.6	1.4	1.2	19		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	16	5.8	2.4	8.2	28	9.1	4.8			
2		0	66	5.6	27	8.2	28	8.5	4.3			
3		0	32	5.0	40	8.2	24	8.2	4.0			
4		.8	19	5.0	23	8.2	23	7.3	5.0			
5		3.2	12	5.0	16	8.8	20	6.8	3.4			
6		3.2	9.8	5.0	13	14	19	8.2	3.2			
7		2.5	8.2	5.6	12	16	18	19	2.8			
8		2.8	7.0	5.6	10	12	16	13	2.5			
9		2.8	7.0	5.6	10	12	15	8.8	2.4			
10		* 2.2	6.8	5.6	10	12	14	8.5	2.4			
11		2.5	6.6	5.3	12	11	13	9.8	2.5			
12		5.4	6.6	5.3	24	9.8	14	9.1	2.2			
13		13	6.3	5.3	20	9.4	16	8.5	2.1			
14		17	6.3	5.3	16	9.1	14	7.3	1.9		(*)	
15		7.0	6.3	5.6	15	43	12	6.6	1.8			
16		4.8	6.3	5.8	19	54	9.8	6.3	1.6			
17		3.6	6.3	5.6	16	89	8.8	5.8	1.2			
18		3.6	6.3	5.6	15	56	8.8	5.8	.8			
19		4.0	6.8	5.6	13	36	8.2	5.6	.6			
20		3.8	* 6.6	5.3	* 10	46	7.6	5.8	.5			
21		3.2	6.0	5.0	8.8	* 42	7.3	5.8	.4			(*)
22		3.0	6.0	5.0	8.2	33	15	5.6	.3			
23		2.8	6.0	* 5.0	7.6	30	27	* 4.0	.3			
24		2.7	6.0	5.0	7.3	32	22	3.4	.2			
25		2.7	5.8	5.3	7.0	49	15	3.8	.1			
26		16	5.8	8.2	7.9	41	* 13	3.8	0			
27		14	5.8	19	8.2	36	12	3.8	* 0			
28		8.2	5.8	13	8.2	36	11	3.4	0			
29		6.6	8.2	10	-	32	10	3.2	0			
30		6.3	6.6	10	-	30	9.1	3.2	0			
31		-	8.5	12	-	28	-	3.6	-			
Total	0	147.7	318.7	206.0	408.2	859.9	458.6	211.6	51.3	0	0	0
Mean	0	4.92	10.3	6.65	14.6	27.7	15.3	6.83	1.71	0	0	0
Max.	0	17	66	19	40	89	28	19	5.0	0	0	0
Min.	0	0	5.8	5.0	7.0	8.2	7.3	3.2	0	0	0	0
Ac-ft	0	293	632	409	810	1,710	910	420	102	0	0	0

Calendar year 1960:

Max 1,290

Min 0

Mean 23.1

Acre-feet 16,770

Water year 1960-61:

Max 89

Min 0

Mean 7.29

Acre-feet 5,290

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

667

11-3065. Calaveritas Creek near San Andreas, Calif.

Location.--Lat 38°09'50", long 120°39'30", in SW¹/₄ sec.28, T.4 N., R.12 E., on right bank 0.8 mile east of Calaveras Cement Plant, 1.0 mile upstream from mouth, and 2.6 miles southeast of San Andreas.

Drainage area.--53.3 sq mi.

Records available.--April 1950 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 865 ft (from topographic map). Prior to Feb. 12, 1952, staff gage at same site and datum.

Average discharge.--11 years, 32.0 cfs (23,170 acre-feet per year); median of yearly mean discharges, 23 cfs (16,600 acre-feet per year).

Extremes.--Maximum discharge during year, 82 cfs Mar. 17 (gage height, 1.97 ft); no flow for several months.

1950-61: Maximum discharge, 3,620 cfs Apr. 2, 1958 (gage height, 6.65 ft); no flow at times in 1950, 1954-55, 1957, 1959-61.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 4-8)

0.4	0	1.0	6.7
.5	.1	1.1	10
.6	.4	1.2	15
.7	1.0	1.3	20
.8	2.1	1.5	33
.9	4.0	1.7	53

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	8.9	2.3	3.6	3.2	1.0	5.8	2.6	0.1		
2		0	2.0	2.1	1.0	3.2	8.9	5.6	2.4	.1		
3		*0	3.2	2.1	6.7	3.2	7.7	5.3	2.3	.1		
4		.1	1.8	2.8	6.1	3.2	6.7	4.5	2.3	.1		
5		.1	1.1	2.6	5.6	3.4	5.8	4.3	2.1	.1		
6		.2	8.1	2.6	6.1	3.8	5.6	5.6	2.1	.1		
7		.2	6.7	2.6	5.6	4.0	5.0	6.1	2.1	.1		
8		.2	5.6	2.3	5.0	4.3	4.8	6.1	2.1	.1		
9		.2	4.8	2.1	4.8	4.3	4.5	6.7	2.8	0		
10		.2	4.3	2.1	4.3	4.3	4.0	6.1	1.9	0		
11		.2	3.8	2.1	5.0	4.3	3.8	6.4	1.9	0		
12		.9	3.6	2.1	4.8	4.3	4.5	5.0	1.7	0		
13		1.4	3.4	2.1	7.7	4.0	3.8	5.0	1.6	0		
14		1.4	3.4	2.0	8.5	3.8	3.8	4.8	1.4	0		
15		1.0	3.2	2.0	7.7	1.1	3.8	4.3	1.2	0		
16		1.7	3.0	2.0	7.4	2.2	3.4	4.0	1.1	0		
17		3.0	3.0	2.0	7.0	4.7	3.2	3.6	1.1	0		
18		3.8	2.8	2.0	6.7	4.1	3.2	3.4	1.1	0		
19		3.2	*2.6	2.1	5.8	2.7	3.2	3.8	1.1	0		
20		3.0	2.8	2.1	*5.6	2.4	3.0	3.8	.9	0		
21		2.6	2.8	2.1	5.3	*2.5	2.8	3.4	.7	0		
22		2.8	2.6	2.1	5.0	2.0	2.4	3.2	.4	0		
23		2.6	2.6	*2.0	4.8	1.6	5.8	*3.0	.4	0		
24		2.4	2.4	2.0	4.3	1.5	6.7	3.0	.2	0		
25		2.1	2.3	2.1	4.0	1.6	6.4	2.6	.2	0		
26		5.6	2.4	4.0	4.0	2.0	*7.7	2.6	.1	0		
27		3.6	2.4	2.8	3.8	2.0	8.1	2.4	*1.1	0		
28		6.7	2.6	1.9	3.6	1.8	7.4	2.3	.1	0		
29		7.0	2.6	3.2	-	1.8	6.4	2.1	.1	0		
30		5.6	2.4	3.2	-	1.4	5.8	2.1	.1	0		
31		-	2.3	4.3	-	1.2	-	2.6	0	0		
Total	0	61.8	178.4	73.8	158.8	419.3	158.2	129.5	58.2	0.8	0	0
Mean	0	2.0	5.75	2.38	5.67	13.5	5.27	4.18	1.27	0.03	0	0
Max.	0	7.0	32	4.3	10	47	10	6.7	2.8	0.1	0	0
Min.	0	0	2.3	1.9	3.6	3.2	2.4	2.1	0.1	0	0	0
Ac-ft	0	123	354	146	315	832	314	257	76	1.6	0	0

Calendar year 1960: Max 506 Min 0 Mean 10.1 Acre-feet 7,360
Water year 1960-61: Max 47 Min 0 Mean 3.34 Acre-feet 2,420

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-3080. North Fork Calaveras River near San Andreas, Calif.

Location.--Lat 38°13'05", long 120°41'55", in NW 1/4 sec. 7, T. 4 N., R. 12 E., on right bank 0.5 mile upstream from Chile Gulch and 1.8 miles northwest of San Andreas.

Drainage area.--85.7 sq mi.

Records available.--March 1950 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map). Prior to Feb. 14, 1952, staff gage at same site and datum.

Average discharge.--11 years, 47.0 cfs (34,030 acre-ft per year); median of yearly mean discharges, 36 cfs (26,100 acre-ft per year).

Extremes.--Maximum discharge during year, 122 cfs Dec. 2 (gage height, 2.68 ft); no flow for many days.

1950-61: Maximum discharge, 6,200 cfs Dec. 23, 1955 (gage height, 12.52 ft), from rating curve extended above 3,900 cfs; no flow at times in most years.

Remarks.--Records good. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.6	0	1.2	7.6
.7	.3	1.5	18
.8	.8	1.8	32
.9	1.7	2.1	55
1.0	3.2	2.4	86

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	8.8	4.9	11	7.4	15	7.6	3.2			
2		0	85	4.9	16	7.4	14	7.9	3.6			
3		0	37	4.7	28	7.4	12	6.8	2.6			
4		0	20	4.7	18	7.1	12	6.0	2.5			
5		0	13	4.9	14	7.6	10	5.6	2.1			
6		0	9.7	4.7	12	12	9.4	6.8	1.7			
7		0	8.2	4.7	10	17	8.8	13	1.5			
8		0	7.1	4.7	9.4	18	8.2	12	1.4			
9		0	6.6	4.7	9.1	12	7.6	7.6	1.3			
10		0	6.3	4.7	9.1	12	7.1	7.4	1.2			
11		0	6.0	4.7	11	11	6.8	8.2	1.2			
12		0	5.8	4.9	53	9.7	7.4	7.9	.8			
13		0	5.6	4.7	26	8.8	9.7	6.8	.6			
14		*0	5.6	4.7	17	8.5	8.2	6.0	.7		(*)	
15		13	5.6	4.7	14	30	6.8	5.2	.4			
16		9.1	5.4	4.7	22	75	6.3	4.9	.1			
17		6.3	5.4	4.7	20	77	5.8	5.2	0			
18		5.6	5.2	4.7	18	75	5.4	4.7	0			
19		6.3	*5.2	4.7	14	37	5.2	4.7	0			
20		5.2	5.2	4.7	*12	43	5.2	4.7	0			
21		4.1	5.2	4.7	12	*42	5.2	4.7	0			(*)
22		3.8	5.6	4.7	11	27	10	4.1	0			
23		3.8	5.6	*4.7	10	23	23	*3.8	0			
24		3.8	5.2	4.5	10	22	29	3.4	0			
25		3.6	5.2	4.7	9.1	63	20	3.2	0			
26		27	5.2	7.9	8.2	42	*18	2.6	0			
27		42	5.2	16	8.2	32	12	2.6	*0			
28		16	5.4	10	7.9	34	10	2.8	0			
29		9.4	5.2	8.5	—	26	8.8	3.2	0			
30		7.1	5.2	9.1	—	21	7.6	2.1	0			
31		—	4.9	10	—	17	—	2.6	—			
Total	0	166.1	314.6	179.6	420.0	831.9	314.5	174.1	24.9	0	0	0
Mean	0	5.54	10.1	5.79	15.0	26.8	10.5	5.62	0.83	0	0	0
Max.	0	42	85	16	53	77	29	13	3.6	0	0	0
Min.	0	0	4.9	4.5	7.9	7.1	5.2	2.1	0	0	0	0
Ac-ft	0	329	624	356	833	1,650	624	345	49	0	0	0

Calendar year 1960: Max 1,360 Min 0 Mean 18.0 Acre-feet 13,070

Water year 1960-61: Max 85 Min 0 Mean 6.65 Acre-feet 4,810

Peak discharge (base, 1,300 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

669

11-3089. Calaveras River below Hogan Dam, Calif.

Location.--Lat 38°08'53", long 120°49'26", in NE¼ sec.1, T.3 N., R.10 E., on right bank at county road bridge, 0.5 mile upstream from Cosgrove Creek, 0.8 mile downstream from Hogan Dam, and 3.0 miles south of Valley Springs.

Drainage area.--363 sq mi.

Records available.--January to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 519.8 ft above mean sea level (levels by Corps of Engineers).

Extremes.--Maximum discharge during period, 662 cfs June 1 (gage height, 2.28 ft); no flow for many days.

Remarks.--Records good. Flow regulated by Hogan Reservoir at Stockton flood-control dam (usable capacity, 75,000 acre-ft), by Bingham Reservoir (capacity, 775 acre-ft) on North Fork Calaveras River, and by some seepage of North Fork Stanislaus River water from diversion canals and reservoirs, normally not over 1.5 cfs. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.2	0	0.8	26
.3	1.2	.9	38
.4	3.2	1.1	72
.5	6.4	1.3	120
.6	11	1.6	225
.7	17	2.0	440

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				—	36	0.4	1.2	2.3	248	1.2		0
2				—	47	.4	1.4	2.5	*194	1.2		0
3				—	92	.3	1.2	3.2	274	1.2		0
4				—	90	.4	1.2	2.7	392	1.0		0
5				—	62	.5	1.2	2.5	270	.9		0
6				—	48	.8	1.7	2.7	275	.9		0
7				—	40	1.0	1.2	2.3	380	.9		0
8				—	34	.9	1.4	2.1	320	.9		0
9				—	32	1.0	1.6	1.7	280	1.8		0
10				—	30	1.0	1.6	2.1	261	1.0		0
11				—	30	1.0	1.6	2.1	243	.7		0
12				—	40	1.0	1.7	2.1	188	0		0
13				—	68	1.2	1.6	2.3	19	0		0
14				—	57	.9	1.6	2.5	*1.7	0		0
15				—	26	2.1	1.6	2.3	1.4	0	(*)	21
16				17	.5	1.2	1.6	2.5	1.2	0	(*)	76
17				18	.8	2.1	1.4	2.5	1.0	0		76
18				17	.8	1.2	1.4	2.7	1.0	0		32
19				16	.6	1.0	1.4	2.7	.6	0		4
20				16	.6	1.0	1.4	2.7	1.0	0		0
21				16	*.4	1.0	1.4	2.7	.6	0		*0
22				15	.5	*1.0	1.7	2.7	1.2	0		138
23				15	.5	1.0	1.7	2.7	.9	0		*178
24				*15	.5	1.4	1.6	*2.5	1.0	0		87
25				15	.5	1.4	1.7	2.5	1.0	0		23
26				22	.4	1.2	1.9	2.7	.9	0		.8
27				32	.5	1.2	*2.1	2.7	.9	0		.5
28				41	.5	1.0	2.1	2.7	.9	0		.4
29				38	—	1.0	2.1	2.5	.9	0		33
30				34	—	1.0	2.3	3.0	.9	0		40
31				33	—	1.0	—	3.2	—	0		—
Total				—	739.2	31.6	47.6	78.4	3,344.0	10.9	0	706.1
Mean				—	26.4	1.02	1.59	2.53	111	0.35	0	23.5
Max.				—	92	2.1	2.3	3.2	392	1.2	0	178
Min.				—	0.4	0.3	1.2	1.7	0.6	0	0	0
Ac-ft				—	1,470	63	94	156	6,630	22	0	1,400

Calendar year 1960:

Max —

Min —

Mean —

Acres-feet —

Water year 1960-61:

Max —

Min —

Mean —

Acres-feet —

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-3090. Cosgrove Creek near Valley Springs, Calif.

Location.--Lat 38°08'10", long 120°50'05", in SE $\frac{1}{4}$ sec. 35, T. 4 N., R. 10 E., on right bank 0.4 mile upstream from mouth and 2.7 miles south of Valley Springs.

Drainage area.--20.6 sq mi.

Records available.--October 1929 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 547.8 ft above mean sea level, datum of 1929. Prior to Mar. 17, 1930, staff gage at site a quarter of a mile downstream at different datum.

Average discharge.--32 years, 7.51 cfs (5,440 acre-ft per year); median of yearly mean discharges, 5.4 cfs (3,900 acre-ft per year).

Extremes.--Maximum discharge during year, 24 cfs Feb. 2 (gage height, 2.79 ft); no flow for several months.

1929-61: Maximum discharge, 3,240 cfs Dec. 23, 1955 (gage height, 8.96 ft), from rating curve extended above 900 cfs on basis of slope-area measurement of peak flow; no flow for several months in each year.

Remarks.--Records good. No storage or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.92	0	2.2	1.0
2.0	.1	2.3	2.4
2.1	.3	2.5	7.0

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0	0.1	0.3	0.1				
2					3.8	.1	.3	.1				
3					5.2	.1	.3	0				
4					1.3	.1	.2	0				
5					.7	.1	.1	0				
6					.5	.1	.1	0				
7					.4	.1	.1	.2				
8					.4	.1	.1	.1				
9					.3	.1	.1	0				
10					.3	.1	.1	0				
11					.7	.1	.1	0				
12					2.2	.1	.1	0				
13					1.1	.1	.1	0				
14		(*)			.7	.1	.1	0				
15					.7	.6	.1	0			(*)	
16					1.1	2.0	.1	0				
17					1.0	7.0	0	0				
18				(*)	.7	3.6	0	0				
19					.5	1.9	0	0				
20			(*)		.4	1.3	0	0				
21					*.3	1.6	0	0				(*)
22					.3	*1.0	.2	0				
23					.3	.8	.3	0				
24				(*)	.2	.8	.2	* 0				
25					.2	2.0	.3	0				
26					.1	1.8	.1	0				
27					.1	1.2	*.1	0	(*)			
28					.1	.8	.1	0				
29					-	.8	.1	0				
30					-	.5	0	0				
31					-	.4	-	0				
Total	0	0	0	0	23.6	29.5	3.7	0.5	0	0	0	0
Mean	0	0	0	0	0.84	0.95	0.12	0.02	0	0	0	0
Max.	0	0	0	0	5.2	7.0	0.3	0.2	0	0	0	0
Min.	0	0	0	0	0	0.1	0	0	0	0	0	0
Ac-ft	0	0	0	0	47	59	7.3	1.0	0	0	0	0

Calendar year 1960:

Max

92

Min

0

Mean

0.86

Acres-feet

627

Water year 1960-61:

Max

7.0

Min

0

Mean

0.16

Acres-feet

114

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-3095. Calaveras River at Jenny Lind, Calif.

Location.--Lat 36°05'20", long 120°51'53", in NW $\frac{1}{4}$ sec.27, T.3 N., R.10 E., on right bank 70 ft downstream from bridge on Milton road, 0.2 mile south of Jenny Lind, and 6.5 miles downstream from Cosgrove Creek.

Drainage area.--395 sq mi.

Records available.--January 1907 to September 1961. Yearly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 220 ft (from topographic map). Prior to Dec. 3, 1925, staff gage on center pier of bridge. Prior to October 1917, at datum 7.00 ft higher, and October 1917 to May 1928 at datum 2.00 ft higher.

Extremes.--Maximum discharge during year 604 cfs June 1 (gage height, 3.76 ft); no flow for several months.

1907-61: Maximum discharge observed, 50,000 cfs Jan. 31, 1911 (gage height, 21.0 ft, present datum), from rating curve extended above 11,000 cfs; no flow in late summer of most years.

Remarks.--Records good. Flow regulated by Hogan Reservoir at Stockton flood-control dam beginning in 1930 (usable capacity, 75,000 acre-ft), by Bingham Reservoir (capacity, 775 acre-ft) on North Fork Calaveras River, and by some seepage of North Fork Stanislaus River water from diversion canals and reservoirs, normally not over 1.5 cfs. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Apr. 24-27, June 2-16)

0.5	0	1.5	11
.6	.3	1.7	20
.7	.7	1.9	36
.8	1.1	2.2	73
1.0	2.3	2.5	125
1.1	3.5	3.0	265
1.2	5.2	4.0	670

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	24	13	29	0.5	1.0	2.0	181			0
2		0	38	13	36	.5	1.0	2.3	*189			0
3		*0	113	13	70	.5	1.0	2.2	229			0
4		0	88	13	74	.5	1.0	4.3	416			0
5		0	59	12	55	.5	.9	3.3	293			0
6		0	42	12	43	.6	.8	4.0	240			0
7		0	32	12	36	.7	.8	8.0	404			0
8		0	26	13	32	.7	.8	4.0	336			0
9		0	21	13	29	.7	.8	2.4	316			0
10		0	20	13	27	.7	.7	2.2	262			0
11		0	19	13	27	.7	.7	2.0	244			0
12		0	18	13	32	.6	.7	2.1	221			0
13		0	17	13	56	.6	.7	2.1	19			0
14		0	16	13	48	.6	.9	2.2	*1.6			0
15		0	15	13	35	3.9	.9	2.2	.8	(*)		0
16		0	15	12	7.2	7.8	.8	2.3	.1			77
17		0	15	13	3.7	13	.8	2.3	0			73
18		0	15	13	2.1	9.8	.7	2.4	0			51
19		0	*14	13	1.1	6.5	.8	2.4	0			3.6
20		0	*14	13	.8	4.7	.8	2.5	0			1.8
21		0	14	13	.8	3.4	.8	2.5	0			*1.3
22		0	15	13	.7	*2.7	.9	2.4	0			71
23		0	14	14	.7	2.2	1.3	2.4	0			*173
24		0	13	*14	.7	2.2	1.9	*2.4	0			96
25		0	14	16	.7	5.7	1.7	2.4	0			42
26		0	13	21	.6	4.7	1.4	2.2	0			3.6
27		0	13	26	.5	4.7	*1.5	2.3	*0			1.9
28		29	13	33	.5	3.1	1.6	2.2	0			1.3
29		35	13	34	—	2.2	1.8	2.2	0			1.1
30		26	13	31	—	1.5	1.9	2.2	0			45
31		—	13	30	—	1.2	—	2.1	—			—
Total	0	90	769	501	649.1	87.7	31.4	82.5	3,352.5	0	0	642.6
Mean	0	3.00	24.8	16.2	23.2	2.83	1.05	2.66	112	0	0	21.4
Max.	0	35	113	34	74	13	1.9	8.0	416	0	0	173
Min.	0	0	13	12	0.5	0.5	0.7	2.0	0	0	0	0
Ac-ft	0	179	1,539	994	1,390	174	62	164	6,650	0	0	1,270
Calendar year 1960 : Max 2,760 Min 0 Mean 57.0 Acre-feet 41,400												
Water year 1960-61 : Max 416 Min 0 Mean 17.0 Acre-feet 12,310												

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-3120. Bear Creek near Lockeford, Calif.

Location.--Lat 38°09'15", long 121°08'15", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 31, T.4 N., R.8 E., on right bank 15 ft downstream from county road bridge and 0.8 mile southeast of Lockeford.

Drainage area.--47.6 sq mi.

Records available.--October 1930 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. October 1926 to November 1930 at site 3 miles downstream; records not equivalent.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 85 ft (from topographic map).

Average discharge.--31 years, 11.1 cfs (8,040 acre-ft per year); median of yearly mean discharges, 7.3 cfs (5,300 acre-ft per year).

Extremes.--Maximum discharge during year, 190 cfs Jan. 31 (gage height, 5.95 ft); no flow at times in each month.
1930-61: Maximum discharge, 2,930 cfs Apr. 3, 1958 (gage height, 15.13 ft); no flow for several months in each year.

Remarks.--Records fair. No storage or diversion above station. Water may be released from East Bay Municipal Utility District aqueduct into Bear Creek at rare intervals.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.3	0	3.7	5.7
3.4	.4	3.9	12
3.5	1.7	4.2	30
3.6	3.4	4.6	60

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0		0	15	0	0	0	0	0	0	0.1
2	0	0		0	55	0	0	1	0	1	0	0
3	*0	0		*0	34	0	0	0	0	0	1	0
4	0	2		0	7.4	0	0	3	0	1	1	0
5	0	2		0	3.7	0	*0	2	0	0	0	0
6	0	1		0	2.2	0	0	0	0	0	0	0
7	0	1		0	1.2	0	1	0	0	0	0	1
8	0	0		0	.7	0	1	0	0	0	0	0
9	0	0		0	.4	0	1	0	0	0	0	2
10	1	0		*0	2	0	4	0	0	0	1	1
11	0	0		0	2	0	2	1	3	0	0	1
12	0	0		0	1	0	3	3	2	1	0	0
13	0	1		0	1	0	0	0	1	1	0	0
14	2	1.9		0	1	0	0	0	0	1	**2	0
15	0	.7		0	1	**3.6	0	0	0	0	0	0
16	0	2		0	1	6.2	3	1	5	1	0	1
17	0	1		0	0	9.5	0	0	0	0	0	0
18	3	1		0	0	7.2	2	0	0	0	1	0
19	0	0		0	0	2.6	0	1	0	0	2	1
20	0	0		0	0	1.1	0	0	0	1	0	0
21	0	0		0	0	.5	0	0	0	0	0	2
22	1	0	(*)	0	0	2	1.2	**1	0	0	0	*0
23	3	0		0	*0	1	1	0	*0	1	0	0
24	1	0		0	0	1	2.4	0	0	0	0	0
25	0	0		*0	0	1	.6	0	0	0	0	1
26	0	6.4		2	0	1	0	0	0	1	1	0
27	0	2.0		2	0	0	0	0	0	0	1	0
28	0	1.0		0	0	0	0	0	1	1	1	1
29	4	2		.7	-	0	0	0	0	0	1	0
30	0	*0		3.6	-----	0	0	0	0	0	0	0
31	0	-----		*28	-----	0	-----	0	-----	0	*1	-----
Total	1.5	13.3	0	32.7	120.5	31.3	6.0	1.3	1.2	1.0	1.3	1.2
Mean	0.05	0.44	0	1.05	4.30	1.01	0.20	0.04	0.04	0.03	0.04	0.04
Max.	0.4	6.4	0	28	55	9.5	2.4	0.3	0.5	0.1	0.2	0.2
Min.	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	3.0	26	0	65	239	62	12	2.6	2.4	2.0	2.6	2.4

Calendar year 1960: Max 489 Min 0 Mean 3.45 Acra-feet 2,510
Water year 1960-61: Max 55 Min 0 Mean 0.58 Acra-feet 419

Peak discharge (base, 220 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

SAN JOAQUIN RIVER BASIN

673

11-3130. Delta-Mendota Canal at Tracy pumping plant near Tracy, Calif.

Location.--Lat 37°47'45", long 121°35'05", in SW¹/₄SW¹/₄ sec.31, T.1 S., R.4 E., at Tracy Pumping Plant at intake to canal, 6 miles southeast of Byron and 10 miles northwest of Tracy.

Records available.--June 1951 to September 1961. Prior to October 1959, published as Delta-Mendota Canal near Tracy.

Gage.--Water-stage recorder on forebay, pressure gages on pump discharge lines, and operating time of pumps. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Average discharge.--10 years, 1,363 cfs (986,800 acre-ft per year).

Extremes.--1951-61: Maximum daily discharge, 4,934 cfs July 13, 1961; no flow for many days most years.

Remarks.--Discharge computed from records of operation of pumps. Water is diverted from Sacramento-San Joaquin Delta by way of Old River and a dredged channel to the Tracy Pumping Plant where it is lifted about 200 ft into canal. Water, less intermediate diversions, flows into Mendota Pool on San Joaquin River to replace water diverted at Friant Dam. The canal is a part of Central Valley project.

Cooperation.--Records of daily discharge furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2526	716		0	141	1834	1723	3071	3367	4297	4558	2626
2	2523	716		0	176	1838	1720	2895	3371	4240	4398	2305
3	2318	572		0	284	2043	1720	2794	3240	4046	4337	2296
4	2319	571		0	69	2268	1793	2582	3239	3857	4276	2122
5	2315	572		0	69	2483	2006	2684	3367	3853	4211	1946
6	2019	500		0	70	2277	2194	2612	*3426	3741	3983	*1949
7	1767	284		0	105	2329	2584	2608	3482	3682	4156	2197
8	1838	284		0	105	*2287	2577	2537	3582	3835	3897	2199
9	1912	284		0	320	2289	2642	*2509	3585	4135	4161	1950
10	*1907	320		0	382	2268	2807	2509	3490	4143	4166	1946
11	1725	320		0	517	2435	*2830	2576	3493	4150	4159	1769
12	1658	321		0	516	2432	2897	2645	3498	4288	3990	1664
13	1657	321		0	517	2324	3116	2645	3495	4934	3992	1735
14	1425	321		0	454	*2466	3114	2646	3622	4922	3926	1799
15	1256	321		0	932	*2584	3113	2582	3692	4917	3818	1826
16	1256	320		0	1164	2544	3248	2512	3927	4910	3752	1859
17	1258	498		0	1163	2422	3114	2522	4161	4412	3781	1956
18	1060	643		0	1095	2186	3117	2582	4145	4812	3879	1891
19	1059	607		0	1093	1864	3117	2583	4134	4907	3746	2155
20	1059	607		0	1092	1863	3112	2575	4133	4911	3717	2157
21	1058	607		1234	1091	1723	3639	2572	4136	4905	3511	2032
22	1060	535		1626	1094	1722	3642	2575	4243	4820	3379	*2028
23	1029	535		862	1291	1696	4113	*2633	4238	4831	3376	1889
24	963	572		*863	1289	1664	2992	2610	4230	4616	3374	2328
25	789	611		864	1392	1663	*2994	2612	4239	4683	*3374	2019
26	864	611		867	1562	1661	2891	2613	4249	4657	3376	2018
27	*862	608		720	1558	1430	2749	2862	4252	4655	3373	2019
28	862	607		140	1730	*1469	2959	3040	4342	4584	3143	2022
29	862	680		140	—	1395	2963	3151	4144	4580	2952	2021
30	863	613		140	—	1396	3058	3364	4491	4570	2979	2018
31	864	—		141	—	1290	—	3368	—	4558	2872	—
Total	44,933	15,077	0	7,597	21,271	62,145	84,544	84,069	15,013	138,451	116,612	60,741
Mean	1,449	503	0	245	760	2,005	2,818	2,712	3,834	4,466	3,762	2,025
Max.	2,526	716	0	1,626	1,730	2,584	4,113	3,368	4,491	4,934	4,558	2,626
Min.	789	284	0	0	69	1,290	1,720	2,509	3,239	3,682	2,872	1,664
Ac-ft	89,120	29,900	0	15,070	42,190	123,300	167,700	166,700	228,100	274,600	231,300	120,500
Calendar year 1960:			Max	4,154	Min	0	Mean	1,912	Acre-feet	1,388,000		
Water year 1960-61:			Max	4,934	Min	0	Mean	2,056	Acre-feet	1,488,000		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3135. Salt Springs Reservoir near West Point, Calif.

Location.--Lat 38°30'00", long 120°12'55", in SE¹/₄ sec.33, T.8 N., R.16 E., at right end of Salt Springs Dam on North Fork Mokelumne River, 2 miles upstream from Cole Creek, and 18 miles northeast of West Point.

Drainage area.--160 sq mi.

Records available.--March 1931 to September 1961.

Gage.--Staff gage read once daily. Datum of gage is 3,700 ft above mean sea level (levels by Pacific Gas & Electric Co.); gage readings have been reduced to elevations above mean sea level.

Extremes.--Maximum contents observed during year, 104,100 acre-ft June 12 (elevation, 3,918.5 ft); minimum observed, 4,020 acre-ft Mar. 17 (elevation, 3,733.5 ft).
1931-61: Maximum contents observed, 140,000 acre-ft for several days in June or July each year 1948-54, 1956-58, 1960 (elevation, 3,958.0 ft); no contents Jan. 30 to Feb. 5, Feb. 18-26, 1932, Mar. 1-25, 1933, Jan. 29-31, 1945.

Remarks.--Reservoir is formed by concrete-faced, rock-fill dam, completed in 1931; storage began in March 1931. Capacity, 139,000 acre-ft between elevations 3,707.25 (powerhouse intake) and 3,957.0 ft (upper operating limit, 1 ft below top of radial gates) above mean sea level. Additional storage of 1,860 acre-ft is available for release to river through outlet drain at elevation 3,667.75 ft. Water is released through powerhouse just below dam and discharged into Tiger Creek powerhouse conduit (see following page). Figures given herein represent contents available for use through powerhouse.

Cooperation.--Record of contents furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-feet)

3,730.0	3,320	3,790.0	21,700	3,840.0	46,900
3,740.0	5,420	3,800.0	26,100	3,860.0	59,400
3,750.0	7,890	3,810.0	30,800	3,880.0	73,600
3,760.0	10,800	3,820.0	35,800	3,900.0	88,900
3,770.0	14,100	3,830.0	41,200	3,930.0	114,100
3,780.0	17,700				

Contents, in thousands of acre-feet, at 5 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79.3	57.8	39.7	22.4	6.64	5.56	9.17	44.4	97.4	97.5	83.6	66.6
2	78.3	57.2	39.7	21.7	6.66	5.28	9.93	46.0	98.1	96.4	83.2	66.1
3	77.5	56.5	39.8	21.1	6.73	5.08	11.4	47.6	98.9	95.6	82.6	65.1
4	76.9	55.9	39.3	20.6	6.88	5.17	13.0	49.5	99.9	94.5	82.2	64.1
5	76.2	54.8	38.9	19.8	6.93	5.24	15.6	51.1	100.8	93.7	81.8	63.2
6	75.6	53.8	38.6	19.2	6.73	5.15	16.4	52.0	102.0	93.2	81.4	62.5
7	74.8	52.9	38.4	18.6	5.88	4.97	17.2	53.0	102.9	92.7	80.5	61.7
8	74.3	52.2	38.3	17.9	5.17	4.71	18.5	53.9	103.1	92.5	79.9	61.1
9	73.7	51.6	38.0	17.3	5.17	4.41	20.1	54.9	103.7	92.2	79.6	60.2
10	73.0	51.0	37.4	16.7	5.56	4.16	21.3	56.5	103.9	91.9	79.1	59.4
11	72.5	50.4	36.5	16.1	5.96	4.35	22.2	57.8	104.0	91.5	78.6	58.4
12	71.8	49.7	35.7	15.5	6.61	4.56	23.6	58.6	104.1	91.1	78.0	57.8
13	71.2	49.1	35.1	14.9	6.98	4.67	24.5	59.8	104.0	90.9	77.3	57.1
14	70.6	48.6	34.5	14.4	7.04	4.54	25.4	61.1	103.9	90.6	76.7	56.5
15	69.9	48.5	33.9	13.8	6.98	4.43	26.3	63.0	103.5	90.1	76.2	55.8
16	69.2	47.9	33.3	13.3	6.98	4.22	27.7	64.8	103.4	89.7	75.9	55.2
17	68.7	47.3	32.6	12.7	7.06	4.02	29.7	66.7	103.1	89.3	75.4	54.6
18	68.0	46.7	31.8	12.7	7.14	4.28	31.8	68.8	102.9	89.0	75.0	54.0
19	67.3	45.9	31.2	12.2	7.19	4.58	33.0	71.0	102.4	88.8	74.2	53.4
20	66.6	45.4	30.6	11.7	7.21	4.82	33.9	73.2	102.2	88.4	73.3	52.8
21	66.0	44.8	30.0	11.0	7.09	5.17	34.8	75.4	101.7	88.1	72.6	52.2
22	64.9	44.1	29.4	10.5	7.04	5.58	35.6	79.0	100.8	87.7	72.2	51.6
23	63.8	43.5	28.8	9.96	6.76	6.03	36.3	81.7	100.0	87.1	71.7	50.8
24	62.9	42.9	28.1	9.46	6.12	6.49	36.5	84.4	99.8	86.6	71.2	50.0
25	62.3	42.3	27.3	8.86	5.93	6.78	36.8	87.1	99.7	86.4	70.8	49.3
26	61.7	41.4	26.7	8.24	5.65	7.24	37.3	89.8	99.3	86.1	70.3	48.7
27	61.1	40.5	26.0	7.76	5.38	7.89	38.4	91.9	99.0	85.7	69.4	48.0
28	60.6	40.0	25.3	7.42	5.42	8.44	39.5	93.6	98.5	85.3	68.6	47.5
29	59.8	39.9	24.6	7.11	—	8.58	40.9	95.1	98.3	84.7	67.9	47.1
30	59.1	39.8	23.8	6.83	-----	8.58	42.6	96.0	98.2	84.3	67.4	46.6
31	58.4	-----	23.1	6.56	-----	8.72	-----	96.7	-----	83.9	67.3	-----
(†)	3,858.5	3,827.3	3,793.3	3,744.8	3,740.0	3,753.0	3,832.5	3,909.6	3,911.5	3,893.6	3,871.4	3,839.5
(‡)	-21,700	-18,600	-16,700	-16,500	-1,140	+3,300	+33,900	+54,100	+1,500	-14,300	-16,600	-20,700

Calendar year 1960..... ‡ +9,200

Water year 1960-61..... ‡ -33,500

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

11-3140. Tiger Creek powerhouse conduit below Salt Springs Dam, Calif.

Location.--Lat 38°29'47", long 120°13'04", in SW $\frac{1}{4}$ sec.33, T.8 N., R.16 E., on left bank 1,000 ft downstream from Salt Springs Dam and powerhouse.

Records available.--June 1931 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 3,620 ft (from topographic map). Auxiliary staff gages in stilling wells upstream and downstream from control.

Average discharge.--30 years, 302 cfs (218,600 acre-ft per year).

Extremes.--1931-61: Maximum daily discharge, 577 cfs June 22, 1945; no flow at times each year except 1957.

Remarks.--Records excellent. Conduit conveys water of North Fork Mokelumne River from tailrace of Salt Springs powerhouse to forebay of Tiger Creek powerhouse. Since December 1952, records include Bear River diversion to Salt Springs powerhouse.

Cooperation.--Water-stage-recorder graph and nine discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	405	538	310	375	56	185	101	210	226	489	450	530
2	405	555	270	370	82	205	42	231	226	543	510	291
3	499	542	317	423	56	163	12	178	225	528	514	552
4	556	542	342	386	56	53	12	104	223	534	514	555
5	556	536	339	359	56	53	12	105	437	531	241	555
6	534	532	341	355	324	197	12	103	536	528	532	554
7	465	533	341	349	480	252	74	104	552	451	541	555
8	305	555	341	345	327	250	0	278	561	300	533	552
9	306	504	457	341	57	250	0	352	563	300	535	456
10	459	471	540	335	56	185	28	*353	564	443	537	363
11	534	304	546	328	79	53	42	352	564	507	538	549
12	534	302	552	323	71	53	42	182	561	502	539	552
13	522	302	552	317	119	183	42	54	553	501	518	*552
14	534	435	552	311	191	258	42	55	553	502	534	552
15	536	514	552	306	*206	252	45	194	553	500	536	478
16	537	520	554	300	206	252	45	254	553	108	549	345
17	543	*540	552	294	84	178	45	279	553	534	541	348
18	550	494	550	316	107	53	45	318	372	537	522	492
19	*494	406	538	289	107	55	45	217	556	538	501	546
20	554	406	554	338	173	121	45	53	560	538	492	543
21	556	492	526	306	206	155	45	53	556	538	492	543
22	552	548	554	306	208	152	119	214	*556	538	479	470
23	555	548	484	305	403	152	150	280	429	538	481	349
24	527	546	414	304	394	118	152	282	199	540	471	349
25	506	516	410	345	206	53	152	248	196	540	468	465
26	506	456	405	356	206	53	151	234	414	*532	212	537
27	504	456	451	243	130	85	151	145	504	534	527	534
28	454	369	426	205	55	101	151	128	469	456	527	459
29	352	*330	444	206	—	*133	154	230	382	300	526	381
30	340	330	387	206	—	112	155	226	352	300	304	368
31	454	—	381	149	—	99	—	226	—	368	316	—
Total	15,134	14,122	13,582	9,691	4,701	4,464	1,584.5	6,242	13,548	14,598	14,950	14,375
Mean	488	471	451	313	168	144	52.8	201	452	471	483	479
Max.	556	555	554	423	480	258	155	353	564	543	549	555
Min.	305	302	270	149	55	53	0	53	196	108	212	291
Ac-ft	30,020	28,010	27,730	19,220	9,380	8,850	3,140	12,380	26,870	28,950	29,710	28,510
Calendar year 1960:			Max 556	Min 0	Mean 337	Acre-feet 245,000						
Water year 1960-61:			Max 564	Min 0	Mean 349	Acre-feet 252,700						

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3145. North Fork Mokelumne River below Salt Springs Dam, Calif.

Location.--Lat 38°29'37", long 120°13'12", in NE¼ sec.4, T.7 N., R.16 E., on left bank 0.3 mile downstream from Salt Springs Dam and 1.3 miles upstream from Cole Creek.

Drainage area.--160 sq mi.

Records available.--September 1926 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Moore Creek" 1926-30.

Gage.--Water-stage recorder. Altitude of gage is 3,590 ft (from topographic map). Prior to Sept. 12, 1928, at site 100 ft upstream and Sept. 12, 1928, to Sept. 23, 1940, at present site, at datum 2.0 ft higher.

Average discharge.--35 years, 454 cfs (328,700 acre-ft per year), combined flow of North Fork Mokelumne River and Tiger Creek powerhouse conduit minus Bear River-Cole Creek diversion.

Estremes.--Maximum discharge during year, 172 cfs Apr. 18 (gage height 2.70 ft); minimum daily, 4.1 cfs Sept. 11, 18, 19.

1926-61: Maximum discharge, 16,000 cfs Nov. 21, 1950 (gage height, 17.20 ft), from rating curve extended above 3,000 cfs on basis of computations of flow over dam and discharge through powerhouse; minimum daily, 0.3 cfs Mar. 31, Apr. 1, 1931.

Remarks.--Records excellent. Flow regulated since 1931 by Salt Springs Reservoir (see p.674). Diversion from Bear River and Cole Creek to Salt Springs powerhouse averaged 83.6 cfs during 1961 water year. Diversion above station through Tiger Creek powerhouse conduit (see preceding page).

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	2.8	2.0	72
1.2	8.8	2.5	139
1.4	19	3.0	229
1.7	42		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	10	7.8	6.8	6.8	5.7	5.7	5.7	4.6	11	12	8.5	5.1
2	10	6.4	7.4	6.8	6.1	5.7	8.8	4.9	11	12	8.5	5.1
3	10	6.4	6.4	6.4	6.1	5.4	144	4.6	11	12	8.1	5.1
4	10	6.4	5.7	6.8	6.1	5.1	145	4.9	11	12	7.8	5.1
5	10	6.4	5.7	6.8	6.1	5.1	147	5.1	11	12	7.8	5.1
6	10	6.4	6.4	6.8	6.8	5.4	129	4.9	11	12	7.8	5.1
7	9.7	6.4	6.4	6.8	7.1	5.7	80	4.9	11	12	7.8	5.1
8	9.2	6.4	6.1	6.8	6.4	5.7	6.4	4.9	11	11	7.8	4.9
9	9.2	6.4	6.8	6.8	6.1	5.7	4.9	4.9	11	11	7.8	4.6
10	9.2	6.1	5.7	6.8	6.1	5.4	79	*5.1	11	11	7.4	4.4
11	9.7	5.7	5.7	*6.1	7.1	5.4	116	5.4	11	11	7.1	4.1
12	10	5.7	5.7	6.1	6.4	5.4	113	5.4	12	11	7.1	4.6
13	10	6.1	5.4	6.1	6.4	5.7	114	4.9	12	11	6.8	*5.4
14	9.7	5.1	5.4	6.1	6.4	6.1	121	4.9	12	11	6.8	4.9
15	9.7	4.6	5.4	6.1	*5.8	6.8	123	5.1	12	11	6.1	4.4
16	9.2	4.4	5.7	6.1	6.8	6.4	121	5.7	12	11	6.1	4.6
17	9.7	*4.9	5.7	6.4	6.8	6.8	150	5.7	12	11	6.1	4.4
18	10	7.1	5.7	6.4	6.4	6.1	169	6.1	12	10	5.7	4.1
19	*11	6.4	5.4	6.4	6.4	6.1	169	6.4	12	10	5.7	4.1
20	11	6.1	5.7	6.4	6.4	6.1	*167	7.1	12	9.7	5.7	4.4
21	11	6.1	6.1	6.4	6.4	6.4	167	7.8	12	9.7	5.4	4.6
22	11	6.1	6.4	6.4	6.4	6.4	47	8.5	*12	9.7	5.4	4.4
23	11	6.1	6.4	6.4	7.1	6.8	6.4	8.8	13	9.2	5.1	4.4
24	11	5.7	6.1	6.4	7.1	6.8	5.4	9.2	13	9.2	5.1	4.6
25	11	5.7	6.1	6.4	6.4	7.1	4.9	9.7	13	8.8	4.9	4.6
26	11	6.1	6.4	6.4	6.4	7.1	5.4	10	12	*8.8	4.9	4.9
27	11	5.7	6.4	6.4	6.4	7.1	4.9	10	12	8.8	5.1	4.9
28	11	5.1	6.8	6.1	6.1	7.1	4.6	11	12	8.8	5.1	4.9
29	11	*5.1	6.8	6.1	-----	*6.4	4.9	11	12	8.5	4.9	4.9
30	11	5.1	6.8	6.1	-----	5.7	4.6	11	12	8.5	4.9	4.9
31	11	-----	6.8	5.7	-----	5.7	-----	11	-----	8.5	4.9	-----
TOTAL	318.3	178.0	190.3	198.6	180.8	188.4	2,447.1	213.5	352	322.2	198.2	141.7
MEAN	10.3	5.93	6.14	6.41	6.46	6.08	81.6	6.89	11.7	10.4	6.39	4.72
MAX	11	7.8	7.4	6.8	7.1	7.1	169	11	13	12	8.5	5.4
MIN	9.2	4.4	5.4	5.7	5.7	5.1	4.6	4.6	11	8.5	4.9	4.1
AC-FT	631	353	377	394	359	374	4,853	423	698	639	393	281

CALENDAR YEAR 1960: MAX 1,210

MIN 3.8

MEAN 62.6

AC-FT 45,420

WATER YEAR 1960-61: MAX 169

MIN 4.1

MEAN 13.5

AC-FT 9,770

* Discharge measurement made on this day.

11-3150. Cole Creek near Mokelumne Peak, Calif.

Location.--Lat 38°31'26", long 120°12'28", in SE¼ sec.21, T.8 N., R.16 E., on right bank 3.4 miles upstream from mouth and 6.3 miles southwest of Mokelumne Peak.

Drainage area.--23 sq mi, approximately.

Records available.--July 1927 to November 1942, October 1943 to September 1961. Prior to October 1958, published as Cold Creek near Mokelumne Peak.

Gage.--Water-stage recorder. Altitude of gage is 5,970 ft (from topographic map).

Average discharge.--33 years, 61.6 cfs (44,600 acre-ft per year).

Extremes.--Maximum discharge during year, 406 cfs Apr. 3 (gage height, 3.67 ft); minimum daily, 0.1 cfs for many days.

1927-61: Maximum discharge, 5,500 cfs Nov. 18, 1950 (gage height, 9.69 ft), from rating curve extended above 900 cfs on basis of slope-area measurement of peak flow; no flow for many days in 1931, 1948-49, 1954-55, 1960.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Occasional pumping for domestic use in summer home tract began in September 1961.

Cooperation.--Water-stage-recorder graph and six discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect or doubtful gage-height record (gage-height, in feet, and discharge, in cubic feet per second)

0.3	0.1	1.1	9.7
.4	.2	1.3	18
.5	.4	1.5	28
.6	.7	2.0	67
.7	1.1	2.5	134
.8	2.1	3.0	228
.9	4.2	4.0	520
1.0	6.6		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	b35	b8.5	38	20	111	147	69	1.8	0.1	0.2
2	.1	.1	b30		32	29	176	127	86	1.5	*.1	.1
3	.1	.1	28		36	30	242	152	86	2.3	.1	.1
4	.1	.2	23		24	26	233	131	83	5.4	.1	.1
5	.1	.2	17		19	24	185	102	87	4.4	.1	.1
6	.4	.3	14		21	b20	168	84	83	2.5	.1	.1
7	.3	.4	14		19	b22	133	100	*74	1.8	.1	.1
8	.2	.4	14	b8	18	b24	118	131	67	1.2	.1	.1
9	.1	.3	14		93	23	127	172	55	1.0	.1	.1
10	.1	.2	b14		116	22	115	218	51	.8	.1	.1
11	.2	b2	14		93	24	142	*124	47	.6	.1	.1
12	.2	b2	14		50	23	134	106	40	.5	.1	.1
13	.1	b2	b14		41	25	104	108	38	.4	.1	.1
14	.1	b2	b13		36	41	112	147	34	.4	.1	*.1
15	.1	b2	b12		b35	44	152	166	30	.4	.1	.1
16	.1	b3	11		b31	38	195	166	26	.3	.1	1.0
17	.1	b4	26		b28	31	211	183	23	.3	.1	.6
18	.1	b5	32		b23	37	164	193	20	.2	.1	.3
19	.1	b5	19		b22	32	*113	187	17	.2	.1	.2
20	*.1	.6	15		b27	46	83	211	14	.2	.1	.2
21	.1	16	18	b9	33	66	62	193	13	.2	.1	.2
22	.1	9.7	22		41	80	50	187	10	.2	.1	.2
23	.1	5.4	20		30	104	56	170	*81	.1	.1	.2
24	.1	4.9	19		25	56	54	172	64	.1	.1	.2
25	.1	b4.5	17		25	45	54	178	54	.1	.1	.1
26	.1	b4	14	b12	23	38	82	134	4.9	.1	.1	.1
27	.1	b4	b13	b20	20	32	106	116	3.9	*.1	.1	.1
28	.1	b4	11	b18	19	31	145	101	3.7	.1	.1	.1
29	.1	b5	9.7	b15		34	170	89	2.9	.1	.1	.1
30	.1	6.1	94	b15	47	168	80	2.1	.1	1.3	.1	.1
31	.1		b9.0	b23	84		74		.1	.5		
Total	3.9	69.2	535.1	312.3	1018	1198	1965	4449	1090.4	27.5	4.7	5.3
Mean	0.13	2.31	17.3	10.1	36.4	38.6	132	144	36.3	0.89	0.15	0.18
Max.	0.4	16	35	23	116	104	242	218	87	5.4	1.3	1.0
Min.	0.1	0.1	9.0		18	20	50	74	2.1	0.1	0.1	0.1
Ac-ft	7.7	137	1,060	620	2,020	2,380	7,860	8,820	2,160	55	9.3	11

Calendar year 1960 : Max 324 Min 0 Mean 42.8 Acre-feet 31,050
 Water year 1960-61 : Max 242 Min 0.1 Mean 34.7 Acre-feet 25,140

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Doubtful gage-height record Feb. 4-8, Feb. 27 to Mar. 1, June 18-22, July 10, 11, 17, 22-26, Aug. 11-22, Sept. 3-14, 22-30.

SAN JOAQUIN RIVER BASIN

11-3160. Bear River near Salt Springs Dam, Calif.

Location.--Lat 38°29'37", long 120°17'18", in NW¼ sec.2, T.7 N., R.15 E., on right bank 200 ft upstream from diversion to Tiger Creek powerhouse conduit and highway bridge, 1.5 miles upstream from mouth, and ¼ miles west of Salt Springs Dam.

Drainage area.--48 sq mi, approximately.

Records available.--October 1951 to September 1961.

Gage.--Water-stage recorder and broad-crested weir. Altitude of gage is 3,710 ft (from topographic map).

Average discharge.--10 years, 63.7 cfs (46,120 acre-ft per year).

Extremes.--Maximum discharge during year, 33 cfs Apr. 3 (gage height, 1.36 ft); minimum daily, 1.0 cfs Aug. 23-28.

1951-61: Maximum discharge, 3,060 cfs May 18, 1957 (gage height, 5.35 ft), from rating curve extended above 560 cfs; minimum daily, that of Aug. 23-28, 1961.

Flood in November 1950 reached a stage of 11.2 ft, from floodmarks (discharge unknown).

Remarks.--Records good except that for day of no gage-height record, which is fair. Flow regulated by Bear River and Lower Bear River Reservoirs (combined capacity, 55,500 acre-ft). Water diverted for power from Lower Bear River Reservoir through tunnel to Salt Springs powerhouse on North Fork Mokelumne River. Water diverted occasionally from Cole Creek into Lower Bear River Reservoir.

Cooperation.--Water-stage-recorder graph and eight discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.9	0	1.2	14
1.0	1.8	1.3	25
1.1	6.7	1.4	40

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.0	2.5	2.0	3.9	6.1	6.1	23	18	6.7	3.4	1.5	1.2
2	3.0	2.1	1.2	3.9	12	6.1	28	17	6.7	3.4	1.5	1.2
3	3.0	2.1	7.3	3.4	11	6.1	30	16	6.7	3.9	1.5	1.2
4	3.0	7.1	5.5	3.4	7.3	6.1	30	15	6.7	3.9	1.5	1.2
5	3.0	2.1	4.4	3.0	6.1	6.1	28	13	6.7	3.0	1.5	1.2
6	4.9	3.0	4.4	3.0	5.5	6.1	25	17	6.7	3.0	1.5	1.2
7	3.9	3.9	4.4	3.0	5.5	7.3	21	18	6.7	2.5	1.5	1.2
8	3.0	3.0	4.4	3.0	5.5	6.7	19	16	6.7	2.5	1.5	1.2
9	3.0	2.5	4.4	2.5	8.0	7.3	18	14	6.1	2.1	1.5	1.2
10	3.0	2.1	4.4	2.5	9.4	6.7	17	*18	5.5	2.1	1.5	1.5
11	3.0	3.0	3.9	*3.0	12	6.7	13	18	5.5	2.1	1.5	1.5
12	3.0	8.0	3.9	3.0	10	6.7	15	17	5.5	2.1	1.5	1.5
13	3.0	6.1	3.9	3.0	8.0	6.7	14	16	5.5	2.1	1.5	1.5
14	3.0	4.9	3.9	3.0	6.7	8.7	13	15	5.5	2.1	1.5	1.5
15	3.0	4.4	3.9	3.0	*8.0	13	11	15	4.9	2.1	1.5	1.5
16	3.0	4.4	3.9	3.0	8.0	11	10	15	4.9	2.1	1.5	4.4
17	3.4	*4.4	4.9	3.0	7.3	11	10	14	4.9	2.1	1.5	3.9
18	3.4	10	4.9	3.0	7.3	10	9.4	13	4.4	2.1	1.5	2.5
19	*3.4	6.7	4.4	3.0	6.7	11	9.4	12	4.4	2.1	1.2	2.1
20	3.4	6.1	4.9	3.0	6.7	15	8.7	11	4.4	2.1	1.2	2.1
21	3.4	4.4	4.9	3.0	6.7	17	8.7	10	3.9	1.8	1.2	2.1
22	3.4	3.4	4.9	3.0	6.7	16	10	9.4	*3.9	1.8	1.2	2.1
23	3.4	3.4	4.9	3.0	6.7	20	10	8.7	3.9	1.8	1.0	2.1
24	3.4	3.4	4.9	3.0	6.7	18	10	8.0	3.9	1.8	1.0	2.1
25	3.4	3.4	4.4	2.5	6.7	17	11	8.0	3.9	1.8	1.0	2.1
26	3.4	4.9	4.4	7.3	6.1	16	13	7.3	3.9	*1.8	1.0	2.1
27	3.4	4.4	4.4	4.9	6.1	17	16	6.7	3.9	1.8	1.0	2.1
28	3.4	3.9	3.9	3.4	6.1	16	16	6.7	3.4	1.8	1.0	2.1
29	3.4	*3.9	3.9	3.4	-----	*16	18	6.7	3.4	1.5	1.2	2.1
30	3.4	3.9	4.4	4.4	-----	*19	18	6.7	3.4	1.5	1.2	2.1
31	3.4	-----	4.4	6.7	-----	20	-----	6.7	-----	1.5	1.2	-----
TOTAL	101.8	122.4	163.1	106.2	208.9	356.4	483.2	392.9	152.6	69.7	41.4	55.8
MEAN	3.28	4.08	5.26	3.43	7.46	11.5	16.1	12.7	5.09	2.25	1.34	1.86
MAX	4.9	10	20	7.3	12	20	30	18	6.7	3.9	1.5	4.4
MIN	3.0	2.1	3.9	2.5	5.5	6.1	8.7	6.7	3.4	1.5	1.0	1.2
AC-FT	202	243	324	211	414	707	998	779	303	138	82	111

CALENDAR YEAR 1960 MAX 300 MIN 2.0 MEAN 19.7 AC-FT 14,280
 WATER YEAR 1960-61 MAX 30 MIN 1.0 MEAN 6.18 AC-FT 4,470

* Discharge measurement made on this day.
 a No gage-height record.

11-3168. Forest Creek near Wilseyville, Calif.

Location.--Lat 38°24'10", long 120°26'45", in SW 1/4 sec. 4, T.6 N., R.14 E., on left bank 1.0 mile downstream from Lion Creek, 1.8 miles upstream from mouth, and 4 miles northeast of Wilseyville.

Drainage area.--20.8 sq mi.

Records available.--July 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 2,950 ft (from topographic map).'

Extremes.--1960: Maximum discharge during period July to September, 3.7 cfs July 27 (gage height, 2.71 ft); minimum, 1.1 cfs Sept. 27.

1960-61: Maximum discharge during water year, 89 cfs Dec. 1 (gage height, 3.78 ft); minimum, 0.6 cfs Aug. 24, 25.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Minor diversions above station for irrigation and domestic use.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.45	0.6	2.8	5.8
2.5	.9	3.0	13
2.6	1.9	3.3	33
2.7	3.5		

Discharge, in cubic feet per second, 1960

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	2.6	2.0	9	-	2.3	1.8	17	-	2.6	1.8	25	-	2.6	2.2
2	-	2.4	1.9	10	-	2.3	2.2	18	-	2.2	2.2	26	3.1	2.6	2.2
3	-	2.4	2.0	11	-	2.3	2.6	19	-	2.0	2.0	27	*3.1	2.3	1.7
4	-	2.4	1.9	12	-	2.2	2.3	20	-	2.0	2.0	28	2.9	2.0	1.4
5	-	2.4	1.9	13	-	2.2	2.8	21	-	2.0	2.2	29	2.8	*1.7	1.7
6	-	2.8	1.4	14	-	2.2	1.8	22	-	2.4	2.0	30	2.9	1.6	2.0
7	-	2.3	1.8	15	-	1.9	1.8	23	-	2.6	2.3	31	3.1	2.0	-
8	-	2.3	1.7	16	-	2.0	1.9	24	-	2.4	2.2				
Total														70.0	59.7
Mean														2.26	1.99
Max														2.8	2.8
Min														1.6	1.4
Runoff in acre-feet														139	118

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	2.4	2.7	b3.3	6.1	6.1	1.8	1.1	7.6	3.1	*1.3	1.3
2	2.3	2.4	2.4	b3.7	8.0	6.4	1.7	1.1	7.6	2.9	1.4	1.2
3	*2.0	3.5	1.3	b3.5	9.0	7.3	1.8	1.1	7.3	3.3	1.6	1.2
4	1.9	3.1	9.4	*3.7	6.7	6.7	*1.8	1.1	6.7	2.9	1.4	1.2
5	2.0	2.9	7.6	b2.6	6.1	7.0	1.7	*1.0	6.4	2.9	1.4	1.3
6	2.9	3.1	6.1	b2.8	5.8	8.3	1.4	1.2	6.1	2.8	1.2	1.3
7	3.9	4.1	5.8	3.3	5.8	7.6	*1.2	1.3	6.1	2.6	1.3	1.3
8	3.1	3.5	5.5	3.3	5.8	8.0	1.1	1.2	5.8	2.6	1.4	1.6
9	2.9	3.3	5.0	3.3	6.1	8.6	1.1	1.1	5.8	2.3	1.2	1.6
10	2.8	3.3	4.8	3.3	6.1	8.0	1.0	1.4	5.5	2.2	1.0	1.3
11	2.9	5.2	4.8	3.3	1.6	8.0	9.8	1.4	5.5	2.3	1.3	1.1
12	2.9	1.2	4.5	3.3	1.4	8.0	1.1	1.4	5.2	2.0	1.3	1.1
13	2.9	1.0	4.3	3.3	1.1	7.6	1.1	1.2	*4.3	2.0	1.4	1.2
14	2.8	7.0	4.3	3.5	9.8	7.6	1.0	1.1	2.9	1.9	1.7	1.3
15	2.6	6.1	4.3	3.3	9.8	1.3	9.4	1.1	3.5	2.0	*1.4	1.6
16	2.4	4.8	4.3	3.3	*9.4	1.1	9.0	1.1	3.5	1.9	1.2	2.8
17	2.3	4.5	4.3	3.3	8.6	*1.5	8.6	9.8	3.5	1.9	1.2	4.8
18	2.3	6.1	4.3	3.1	8.3	1.4	8.6	9.4	3.7	1.9	1.2	*3.3
19	2.4	a.6	4.3	3.3	7.6	1.3	8.3	9.8	3.7	1.8	1.7	2.6
20	2.3	a.5	4.1	3.1	7.6	1.5	8.0	9.8	3.7	1.9	1.6	2.3
21	2.3	a.5	4.1	3.1	7.6	1.5	8.0	9.4	3.5	1.8	1.3	2.3
22	2.3	a.5	3.9	3.1	7.6	1.3	1.0	9.0	3.3	1.8	1.4	2.3
23	2.3	a.5	3.9	3.1	7.3	1.5	1.0	8.6	3.3	1.7	1.2	2.3
24	2.4	a.5	3.9	3.1	7.0	1.8	1.1	8.0	3.3	1.7	1.0	2.2
25	2.4	a.5	3.7	3.3	6.7	2.1	1.3	8.0	3.5	1.8	.7	2.0
26	2.6	a.10	3.7	6.1	6.7	2.0	*1.4	7.6	2.8	1.8	.9	1.9
27	2.8	a.7	3.7	5.8	6.4	2.3	1.4	7.6	2.8	1.8	1.2	1.8
28	2.6	*4.5	3.3	4.8	6.4	2.2	1.3	7.3	2.9	1.7	1.4	1.9
29	2.8	4.5	3.1	4.3	-	2.0	1.2	7.0	2.8	1.4	1.3	1.8
30	2.8	4.3	3.3	4.8	-	2.0	1.2	7.0	2.8	1.4	1.3	1.6
31	2.6	-	3.5	*5.8	-	1.8	-	7.6	-	1.2	-	-
Total	79.9	153.6	191.8	112.9	223.3	391.2	356.7	314.0	135.4	65.3	40.2	55.5
Mean	2.58	5.12	6.19	3.64	7.98	12.6	11.9	10.2	4.51	2.11	1.30	1.85
Max	3.9	12	27	6.1	16	23	18	14	7.6	3.3	1.7	4.8
Min	1.9	2.4	3.1	2.6	5.8	6.1	8.0	7.0	2.8	1.2	0.7	1.1
Ac-ft	158	305	380	224	443	776	708	625	269	130	80	110

Calendar year 1960:

Max -

Min -

Mean -

Acres-feet -

Water year 1960-61:

Max 27

Min 0.7

Mean 5.81

Acres-feet 4,210

Peak discharge (base, 120 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

SAN JOAQUIN RIVER BASIN

11-3170. Middle Fork Mokelumne River at West Point, Calif.

Location.--Lat 38°23'23", long 120°31'32", in SE 1/4 sec. 10, T.6 N., R.13 E., on right bank 200 ft downstream from highway bridge, 0.6 mile south of West Point, and 4.5 miles upstream from South Fork.

Drainage area.--67.2 sq mi.

Records available.--October 1911 to September 1961. Monthly discharge only for October 1911, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 2,450 ft (from topographic map). Prior to Oct. 6, 1926, staff gage at site 1,200 ft upstream at different datum. Oct. 6, 1926, to Aug. 18, 1928, staff gage at present site and datum.

Average discharge.--50 years, 57.5 cfs (41,630 acre-ft per year).

Extremes.--Maximum discharge during year, 111 cfs Dec. 1 (gage height, 2.19 ft); minimum daily, 1.7 cfs Aug. 5.

1911-61: Maximum discharge, 4,320 cfs Dec. 23, 1955 (gage height, 8.98 ft); no flow Aug. 23 to Sept. 14, 1931, Sept. 9, 1934.

Remarks.--Records fair except those for periods of no gage-height record or backwater from temporary dams, which are poor. Flow slightly regulated by Middle Fork Reservoir (capacity, 1,740 acre-ft), 6 miles above station, since January 1940. Several small diversions above station. Water diverted at times 4 miles above station to South Fork Mokelumne River via Middle Fork ditch (capacity, about 15 cfs) and Licking Fork Mokelumne River.

Rating table, except periods of backwater from temporary dams (gage height, in feet, and discharge, in cubic feet per second)

0.8	1.4	1.2	11
.9	2.6	1.4	22
1.0	4.6	1.6	37
1.1	7.3	1.9	70

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2		4.1	1.9	1.6	1.1	2.9	3.5	1.5		2.0	2.8
2	4.6		5.9	1.8	2.2	1.1	3.8	3.5	1.6		2.2	2.8
3	*3.3		3.7	1.9	2.3	1.1	4.1	3.3	1.4		3.4	2.6
4	2.6		3.1	*1.9	1.9	1.1	4.2	3.1	1.3		2.1	2.5
5	3.0		2.8	1.9	1.7	1.3	4.1	*2.9	1.2		1.7	2.8
6	4.0	a 1.0	2.6	1.9	1.6	1.9	3.9	3.5	1.2		1.8	2.5
7	6.0		2.5	1.9	1.6	1.3	2.9	3.8	1.2		1.9	2.6
8	4.6		2.5	1.9	1.5	1.2	3.3	3.5	1.5		2.1	2.6
9	4.4		2.5	1.8	1.6	1.7	3.1	2.9	1.5	a 3	2.4	3.0
10	4.4		3.2	1.7	1.7	1.5	2.9	3.7	1.4		3.0	2.6
11	4.9		2.4	1.7	3.1	1.3	2.8	3.9	1.4		2.5	2.6
12	4.4		2.3	1.7	3.1	1.3	3.2	3.5	*1.4		3.8	2.4
13	4.4		2.3	1.7	2.4	1.2	3.4	3.2	1.3		4.4	2.2
14	4.4		2.2	1.6	2.1	1.2	3.0	2.9	8.8		2.5	2.1
15	4.4		2.3	1.2	2.3	3.2	2.7	2.8	8.4		*3.2	2.4
16	3.8		2.2	1.2	2.2	2.8	2.5	2.7	8.0		2.8	3.8
17	4.0		2.2	1.1	2.0	*3.5	2.5	2.5	7.3		2.5	6.5
18	4.0	a 2.0	2.2	1.1	1.9	2.9	2.5	2.5	6.8		2.4	*5.3
19	4.2		2.2	1.1	1.9	2.5	2.4	2.5	5.6	* 2.1	2.6	4.4
20	4.2		2.2	1.1	1.8	2.8	2.3	2.5	6.2	1.8	3.4	3.8
21	4.0		2.1	1.1	1.7	2.5	2.2	2.4	7.0	2.4	2.2	3.6
22	4.0		2.1	1.1	1.7	2.2	3.4	2.2	8.8	2.6	2.1	3.6
23	4.0		2.0	1.1	1.6	2.4	3.6	2.0	1.2	2.5	2.1	3.6
24	4.2		2.0	9.9	1.2	3.2	3.2	1.8	10	2.1	2.0	3.8
25	4.4		2.0	1.1	1.1	3.9	3.5	1.7	9.2		1.9	3.6
26	5.4		2.0	1.7	1.1	3.1	3.7	1.7	9.5		1.8	3.4
27	8.0		2.0	1.7	1.1	3.5	3.9	1.6	8.0	a 2.5	2.2	3.2
28	8.8	*1.0	1.9	1.4	1.1	3.3	3.8	1.5	6.8		2.8	3.4
29	a 8.5	9.9	1.9	1.4	-	2.9	3.8	1.3	8.4		2.8	3.2
30	a 8	9.8	1.9	1.4	-	2.7	3.7	1.3	*5.1		2.5	3.0
31	a 7.5		2.0	*1.6	-	*2.5	-	1.5	-		2.5	-
Total	150.6	459.7	77.3	466.9	51.1	68.2	97.3	81.7	314.9	85.0	77.6	96.7
Mean	4.86	15.3	24.9	15.1	18.3	22.0	32.4	26.4	10.5	2.74	2.50	3.22
Max.	8.8	-	5.9	1.9	3.1	3.9	4.2	3.9	1.6	-	4.4	6.5
Min.	2.6	-	1.9	9.9	1.1	1.1	2.2	1.3	5.1	-	1.7	2.1
Ac-ft	299	912	1,530	926	1,010	1,350	1,930	1,620	625	169	154	192
Calendar year 1960:			Max 77.1		Min 2.6		Mean 32.8		Acra-feet 23,800			
Water year 1960-61:			Max 59		Min 1.7		Mean 14.8		Acra-feet 10,720			

Peak discharge (base, 400 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

Note.--Backwater from temporary dams Oct. 1-3, June 5 to Sept. 17.

11-3185. South Fork Mokelumne River near West Point, Calif.

Location---Lat 38°22'06", long 120°32'40", in SE¹/₄SE¹/₄ sec.16, T.6 N., R.13 E., on right bank 500 ft upstream from highway bridge, 2.4 miles southwest of West Point, and 2.5 miles upstream from mouth.

Drainage area---73.8 sq mi.

Records available---October 1933 to September 1961.

Gage---Water-stage recorder. Altitude of gage is 1,950 ft (from topographic map). Prior to Sept. 19, 1957, at site 1,100 ft downstream at different datum.

Average discharge---28 year, 81.7 cfs (59,150 acre-ft per year).

Extremes---Maximum discharge during year, 214 cfs Dec. 1 (gage height, 3.87 ft); minimum, 3.5 cfs Aug. 3.

1933-61: Maximum discharge, 6,920 cfs Dec. 23, 1955 (gage height, 14.8 ft, from floodmarks, site and datum then in use), from rating curve extended above 1,800 cfs on basis of slope-area measurement of peak flow; no flow Aug. 6, 7, Aug. 12 to Sept. 26, 1934.

Remarks---Records good except those for period of ice effect, which are poor. Several small diversions above station for domestic use and for irrigation of about 100 acres. Diversions into South Fork Mokelumne River basin above station at times from North Fork Calaveras River and from Middle Fork Mokelumne River, for use below station.

Rating tables, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12, Apr. 1 to Sept. 30				Nov. 13 to Mar. 31			
1.7	2.7	2.2	16	2.1	11	3.0	78
1.8	4.0	2.5	34	2.2	14	3.5	144
1.9	6.0	3.0	78	2.5	32		
2.0	8.6						

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	11	68	b14	25	20	53	43	21	11	4.8	5.4
2	8.3	11	106	b13	33	19	53	42	21	10	4.4	5.4
3	*8.1	15	52	b15	39	21	55	39	21	10	3.7	5.0
4	8.1	18	35	*b17	29	20	55	36	19	8.6	4.4	5.0
5	8.3	14	29	b16	25	21	54	36	17	8.9	4.8	4.8
6	10	15	24	b15	23	28	52	40	18	8.6	4.8	4.6
7	13	17	21	b14	23	26	48	46	18	8.1	4.8	4.8
8	12	16	21	14	22	24	45	40	18	8.1	5.0	5.0
9	11	14	20	14	22	29	43	36	18	7.6	4.8	5.0
10	10	14	19	15	23	27	41	41	17	7.0	4.8	5.0
11	11	15	18	15	49	25	38	42	18	7.3	4.8	5.0
12	13	39	18	14	51	24	42	40	*18	7.0	5.0	4.8
13	12	63	17	14	36	23	43	37	17	6.5	5.4	4.8
14	12	47	17	14	31	23	39	34	16	6.5	5.2	4.8
15	10	26	16	14	34	64	36	33	15	6.3	5.0	4.8
16	8.6	20	16	14	*33	55	34	31	14	6.5	5.0	5.6
17	8.3	18	16	14	29	*67	32	29	13	6.8	5.0	12
18	8.6	20	16	14	29	53	31	28	12	6.5	5.0	*8.9
19	8.6	23	16	13	26	46	31	27	11	*6.8	4.8	8.3
20	8.9	18	16	13	25	54	30	26	11	6.5	4.8	8.1
21	8.6	16	15	13	24	53	29	26	12	6.0	4.8	7.8
22	9.6	15	15	13	23	48	47	26	13	6.3	4.6	7.6
23	10	15	15	14	23	52	54	26	12	5.8	4.8	7.3
24	10	15	15	14	22	62	46	23	11	5.4	4.8	7.0
25	10	15	15	13	21	74	46	22	11	5.6	4.8	6.8
26	11	57	15	25	21	60	*48	21	12	5.6	4.8	6.5
27	12	29	15	26	21	62	49	22	11	5.2	5.2	6.8
28	13	*21	15	20	20	61	48	22	11	5.0	5.4	6.5
29	12	19	15	19	—	54	47	21	11	5.0	5.4	6.8
30	11	18	b14	21	—	53	45	21	11	6.0	5.4	6.5
31	11	—	b14	24	—	*53	—	20	—	5.8	5.4	—
Total	315.8	654	724	488	784	1301	1314	976	448	216.3	151.7	186.7
Mean	10.2	21.8	23.4	15.7	28.0	42.0	43.8	31.5	14.9	6.98	4.89	6.22
Max.	13	63	106	26	51	74	55	46	21	11	5.4	12
Min.	7.8	11	14	13	20	19	29	20	11	5.0	3.7	4.6
Ac-ft	626	1,300	1,440	968	1,560	2,580	2,610	1,940	889	429	301	370

Calendar year 1960: Max 1,040 Min 6.5 Mean 44.9 Acre-feet 32,590

Water year 1960-61: Max 106 Min 3.7 Mean 20.7 Acre-feet 15,010

Peak discharge (base, 500 cfs)---No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

SAN JOAQUIN RIVER BASIN

11-3195. Mokelumne River near Mokelumne Hill, Calif.

Location.--Lat 38°18'46", long 120°43'09", SW 1/4 sec. 1, T.5 N., R.11 E., on downstream side of bridge, 1.2 miles northwest of Mokelumne Hill and 8 miles downstream from confluence of North and South Forks.

Drainage area.--538 sq mi.

Records available.--January to June 1901, May 1903 to December 1904, October 1927 to September 1961. Yearly estimate only for water year 1926 (incomplete), published in WSP 1315-A. Published as "at Electra" 1901, 1903-4.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 589.88 ft above mean sea level (levels by California Division of Highways). Jan. 1 to June 30, 1901, and May 11, 1903, to Dec. 31, 1904, staff gage at site 3 miles upstream at different datum. Nov. 10, 1927, to Aug. 26, 1952, water-stage recorder at site 40 ft upstream at same datum.

Average discharge.--35 years (1903-4, 1927-61), 942 cfs (682,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,130 cfs Apr. 6 (gage height, 4.22 ft); minimum daily, 82 cfs May 21.

1901, 1903-4, 1927-61: Maximum discharge, 33,700 cfs Dec. 3, 1950 (gage height, 18.5 ft); minimum observed, 5 cfs Aug. 13-15, 17, 18, 1904.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Salt Springs Reservoir beginning in 1931 (see p. 674), several smaller reservoirs, and four powerplants. Diversions above station for irrigation and domestic use.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	394	648		494	144	190	250	427	284	378	368	480
2	310	551		404	227	230	225	404	263	646	526	400
3	417	551		501	221	205	375	360	270	620	508	470
4	512	570		435	136	105	362	228	288	516	478	510
5	538	548	400	430	139	142	395	284	482	710	236	620
6	612	529		394	317	297	357	236	550	543	551	550
7	530	578		447	534	236	237	270	655	344	562	530
8	448	558		458	382	304	276	464	504	316	608	560
9	263	516		371	168	300	119	506	670	279	494	510
10	365	481		338	146	283	188	512	580	424	602	300
11	465	454		386	186	104	276	501	674	516	531	570
12	598	382		418	184	110	221	444	542	542	589	560
13	558	384	600	308	264	300	220	232	590	522	464	560
14	634	*614		375	304	390	290	172	612	574	575	580
15	518	560		340	365	319	249	394	585	482	559	*500
16	500	523	(*)	324	*351	534	262	365	554	384	*351	306
17	*562	558	619	336	221	316	300	419	600	454	590	438
18	533	539	613	308	184	258	307	439	367	542	570	480
19	562	546	657	388	140	212	468	421	600	653	395	*616
20	568	292	571	376	198	274	492	171	552	542	548	490
21	600	502	609	376	341	320	427	82	652	492	522	548
22	663	462	650	231	252	341	210	282	618	520	472	585
23	643	500	692	368	453	282	211	403	622	490	541	388
24	374	541	413	360	431	354	284	446	264	608	532	310
25	404	528	427	301	279	314	295	364	93	507	250	492
26	518	576	488	496	303	244	273	324	412	527	96	455
27	412	307	495	358	288	307	356	322	554	522	452	600
28	442	466	476	256	188	318	362	179	541	446	560	540
29	487	262	490	296	—	321	358	314	410	292	530	380
30	302	220	462	291	258	258	256	314	*253	212	370	450
31	486		376	262		*267		354		414	250	
Total	15,218	14,746	15,638	11,426	7,346	9,435	8,901	10,633	14,641	15,017	14,680	14,778
Mean	491	492	504	369	262	272	297	343	488	484	474	493
Max.	663	648	657	501	534	534	492	512	674	710	608	620
Min.	263	220	374	231	136	104	119	82	93	212	96	300
Ac-ft	30,180	29,250	31,020	22,660	14,570	16,730	17,650	21,090	29,040	29,790	29,120	29,310

Calendar year 1960: Max 3,880 Min 132 Mean 556 Acra-foot 403,300
 Water year 1960-61: Max 710 Min 82 Mean 415 Acra-foot 300,400

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 1-16, Aug. 28 to Sept. 15, Sept. 27-30.

SAN JOAQUIN RIVER BASIN

683

11-3193. Mokelumne River near Mokelumne Hill, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1									-	-	48	48	54	50	56	53	58	57	58	55	54	49	-	-
2									-	-	49	48	54	50	58	54	58	55	58	55	52	50	-	-
3									-	-	49	48	54	52	55	53	61	57	57	55	52	50	-	-
4									-	-	51	49	58	53	57	53	63	57	56	55	52	50	-	-
5									-	-	49	48	56	54	54	51	60	57	55	54	58	51	-	-
6									-	-	48	48	57	56	53	52	60	57	55	54	55	52	-	-
7									-	-	49	48	57	56	55	51	58	57	59	53	57	53	-	-
8									-	-	49	48	60	55	52	50	59	57	61	54	55	53	-	-
9									-	-	49	48	61	55	53	51	58	57	61	53	57	53	-	-
10									-	-	49	48	59	55	56	52	58	57	58	55	54	53	-	-
11									-	-	53	48	59	55	52	52	57	56	59	55	55	53	-	-
12									-	-	52	49	56	56	52	51	58	56	58	56	54	53	-	-
13									-	-	50	49	59	54	57	50	57	55	58	56	55	53	-	-
14									-	-	50	49	58	55	59	51	58	55	56	55	56	54	-	-
15									-	-	52	50	59	55	54	52	57	56	56	54	56	53	56	55
16									-	-	52	50	60	56	58	52	59	57	54	54	57	53	56	56
17									48	48	52	50	58	57	55	53	59	57	57	53	57	56	57	56
18									48	47	53	49	59	57	59	53	61	57	54	53	57	56	57	56
19									48	47	52	50	58	55	55	55	60	57	55	53	58	56	56	55
20									48	47	52	51	57	54	57	55	60	57	55	52	58	56	57	56
21									48	47	52	51	56	54	62	54	60	58	54	51	58	57	58	57
22									48	48	52	51	54	54	60	54	61	59	52	51	59	58	58	57
23									48	47	53	52	54	52	56	54	60	58	52	51	61	58	58	57
24									48	48	53	52	53	50	56	54	68	59	52	51	60	59	61	57
25									48	48	52	51	53	51	56	54	68	59	52	50	60	58	59	57
26									48	47	52	52	56	51	58	54	64	60	51	50	66	56	58	57
27									48	47	52	52	54	51	56	54	62	60	51	49	68	56	-	-
28									48	47	52	51	54	52	61	56	59	58	50	49	-	-	-	-
29									-	-	52	50	56	52	61	57	58	56	54	48	-	-	-	-
30									---	---	52	51	55	53	61	57	59	56	60	48	-	-	-	-
31									---	---	52	50	---	---	57	57	---	---	52	49	-	-	-	-
Avg									-	-	51	50	57	54	56	53	60	57	56	53	-	-	-	-

SAN JOAQUIN RIVER BASIN

11-3210. Mokelumne River at Lancha Plana, Calif.

Location.--Lat 38°13'25", long 120°53'20", in SW $\frac{1}{4}$ sec. 4, T.4 N., R.10 E., on left bank 1 mile east of Lancha Plana, 3 miles downstream from Pardee Dam, and 5 miles upstream from Camanche Creek.

Drainage area.--584 sq mi.

Records available.--June 1926 to September 1961. Records for water years 1927-28 incomplete, yearly estimates published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 158.95 ft above mean sea level (levels by East Bay Municipal Utility District).

Average discharge.--32 years (1929-61), since start of East Bay aqueduct diversion, 819 cfs (592,900 acre-ft per year).

Extremes.--Maximum discharge during year, 728 cfs June 21 (gage height, 3.77 ft); minimum daily, 107 cfs Feb. 4.

1926-61: Maximum discharge, 26,700 cfs Nov. 21, 1950 (gage height, 20.1 ft); minimum daily, 7 cfs Nov. 21, 1929.

Remarks.--Records excellent. Flow regulated by Pardee Reservoir beginning Mar. 9, 1929 (usable capacity, 193,100 acre-ft), Salt Springs Reservoir beginning March 1931 (see p. 674), several smaller reservoirs, and four powerplants. Of several diversions above station, East Bay Municipal Utility District aqueduct is largest not returned to river.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	228	*208	*256	209	*350	*138	142	*184	273	313	*295	295
2	211	205	354	218	358	146	135	182	283	353	298	288
3	252	205	354	*212	285	143	138	191	302	316	295	281
4	*245	192	350	212	107	135	140	189	316	313	295	288
5	222	192	350	212	145	137	140	191	323	328	274	288
6	219	189	350	213	152	144	140	189	316	325	295	288
7	222	175	224	212	164	145	140	189	330	313	288	295
8	228	178	196	212	166	141	140	185	314	317	288	291
9	217	189	196	212	147	143	140	185	310	317	295	291
10	225	189	196	214	159	141	140	185	314	320	295	295
11	231	192	192	212	152	141	140	183	299	320	302	284
12	225	197	189	212	147	141	140	183	304	317	295	288
13	228	192	189	212	146	139	138	183	307	317	284	288
14	225	192	189	212	152	141	140	183	345	320	288	295
15	225	192	190	212	147	146	140	183	350	320	295	288
16	225	192	180	212	152	143	140	183	363	320	281	295
17	221	194	180	212	149	145	138	178	424	317	295	295
18	214	194	172	212	149	141	138	178	369	313	291	295
19	214	197	189	214	147	141	138	188	369	317	302	291
20	211	194	194	214	149	137	138	185	397	320	295	288
21	211	194	194	212	154	137	138	185	420	325	291	274
22	217	194	200	212	152	137	144	185	401	328	295	277
23	211	200	192	204	147	137	142	185	398	328	298	274
24	217	200	192	212	152	137	136	185	398	325	284	284
25	217	205	189	225	149	137	139	185	398	325	295	288
26	217	202	189	350	149	137	139	185	413	328	306	291
27	219	200	192	283	149	137	139	184	413	328	295	291
28	219	205	192	206	147	137	136	254	428	328	291	284
29	222	204	192	196	—	136	139	160	412	328	291	288
30	222	197	192	350	—	136	139	161	*417	327	295	285
31	219	—	192	354	—	*136	—	*163	—	332	*288	—
Total	6,879	5,859	6,806	7,056	4,722	4,332	4,176	5,729	10,706	9,998	9,075	8,643
Mean	222	195	220	228	169	140	139	185	357	323	293	288
Max.	252	208	354	354	358	146	144	254	428	353	306	295
Min.	211	175	172	196	107	135	135	160	273	313	274	274
Ac-ft	13,640	11,620	13,500	14,000	9,370	8,590	8,280	11,360	21,240	19,830	18,000	17,140
Calendar year 1960:				Max 1,230	Min 64	Mean 290			Acra-feet 210,500			
Water year 1960-61:				Max 428	Min 107	Mean 230			Acra-feet 166,600			

* Discharge measurement made on this day.

11-3235. Mokelumne River near Clements, Calif.

Location.--Lat 38°12'25", long 121°05'20", NW¼ sec.15, T.4 N., R.8 E., on left bank 700 ft upstream from highway bridge, 1 mile north of Clements, and 4 miles downstream from Murphy Creek.

Drainage area.--630 sq mi.

Records available.--October 1904 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A and WSP 1735.

Gage.--Water-stage recorder. Datum of gage is 67.16 ft above mean sea level (levels by East Bay Municipal Utility District).

Oct. 28, 1904, to Apr. 18, 1926, staff gage at bridge 700 ft downstream at datum 1.93 ft higher. Apr. 19, 1926, to Apr. 8, 1931, water-stage recorder, 75 ft downstream from bridge at datum 0.07 ft lower.

Average discharge.--24 years (1904-28), 1,111 cfs (804,300 acre-ft per year), 32 years (1929-61), 824 cfs (596,600 acre-ft per year). Storage and diversion by East Bay Municipal Utility District began March 1929.

Extremes.--Maximum discharge during year, 641 cfs June 28 (gage height, 3.51 ft); minimum daily, 111 cfs Feb. 5.

1904-61: Maximum discharge, 28,800 cfs Nov. 21, 1950 (gage height, 24.40 ft); no flow July 9, Aug. 15, 20-23, 1924.

Remarks.--Records good. Concerning regulation and diversions, see Remarks for Mokelumne River at Lancha Plana, preceding page; between Clements and Lancha Plana are several small diversions for irrigation.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	278	186	229	204	346	149	135	198	213	338	283	263
2	240	186	367	225	392	135	138	181	268	304	275	266
3	* 235	186	367	234	339	140	133	178	292	314	265	272
4	233	173	367	228	126	135	130	175	302	288	259	269
5	224	183	367	225	111	133	133	178	302	289	259	272
6	216	186	367	228	152	133	138	183	302	295	265	272
7	205	160	289	225	154	140	135	188	347	297	268	269
8	210	157	175	225	168	135	135	186	299	299	262	269
9	210	160	201	220	154	135	135	181	307	310	262	269
10	208	*168	201	222	140	135	133	178	300	299	270	260
11	210	173	201	222	152	135	133	183	300	295	276	276
12	213	183	201	222	142	135	135	181	297	289	273	269
13	219	188	188	219	136	133	133	178	297	292	276	259
14	213	186	191	214	140	133	133	181	317	295	* 270	253
15	213	183	196	214	142	*155	135	173	363	295	260	259
16	216	183	194	214	142	140	138	173	349	286	260	266
17	210	186	170	214	142	152	138	173	353	295	263	272
18	205	186	165	214	140	140	138	175	371	299	260	269
19	205	186	175	214	140	133	135	175	356	286	276	259
20	205	186	196	217	140	133	135	178	356	289	273	259
21	205	186	196	219	136	128	135	186	400	295	266	253
22	213	188	*196	216	134	126	150	183	407	302	263	* 275
23	194	186	204	198	* 140	126	150	183	*367	299	266	272
24	205	188	199	219	145	128	138	183	389	295	266	259
25	205	196	201	* 211	145	128	* 138	*173	385	292	270	274
26	205	218	196	360	149	133	135	173	374	289	273	272
27	208	196	199	308	145	135	130	173	381	292	270	272
28	208	196	196	207	147	128	133	206	400	289	266	272
29	206	204	196	196	—	130	135	185	407	286	263	272
30	213	204	199	336	—	130	138	155	381	295	266	267
31	213	—	199	367	—	130	—	157	—	296	266	—
Total	6,643	5,547	6,988	7,237	4,639	4,181	4,080	5,553	10,182	9,184	8,290	8,010
Mean	214	185	225	233	166	135	136	179	339	296	267	267
Max.	278	218	367	367	392	155	150	206	407	338	283	276
Min.	194	157	165	196	111	126	130	155	213	286	259	253
Ac-ft	13,180	11,000	13,860	14,350	9,200	8,290	8,090	11,010	20,200	18,220	16,440	15,890

Calendar year 1960: Max 1,360 Min 69 Mean 281 Acre-feet 203,800
 Water year 1960-61: Max 407 Min 111 Mean 221 Acre-feet 159,700

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3250. Woodbridge Canal at Woodbridge, Calif.

Location.--Lat 38°09'10", long 121°18'00", in SE¹/₄ sec.34, T.4 N., R.6 E., on right bank at Woodbridge at point of diversion.

Records available.--April 1926 to September 1961.

Gage.--Differential water-stage recorder and gate-opening recorder. Datum of gage is 32.18 ft above mean sea level (levels by East Bay Municipal Utility District). Prior to Mar. 15, 1931, water-stage recorder at site 0.2 mile downstream at different datum.

Average discharge.--35 years, 135 cfs (97,740 acre-ft per year).

Extremes.--1926-61: Maximum daily discharge, 482 cfs July 8, 1953; no flow part of each year.

Remarks.--Records good except those for period of indefinite head-discharge relation, which are fair. Discharge computed from records of gate openings and effective head as shown by recorders. Canal diverts from Woodbridge Reservoir on Mokelumne River in sec.34, T.4 N., R.6 E., for irrigation of lands south and west of Woodbridge.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	161	*117				0	80	61	102	255	*185	*158
2	140	118				0	80	74	109	232	176	166
3	*133	117				0	80	88	125	203	165	155
4	144	90				0	88	88	140	191	154	173
5	158	69				0	85	88	170	183	157	175
6	132	62				5.8	88	83	172	188	155	179
7	129	62				20	87	81	168	193	162	165
8	130	61				27	84	90	185	186	168	157
9	127	61				32	70	94	185	175	174	146
10	122	16				44	68	92	173	174	173	144
11	118	0				56	79	90	166	169	172	154
12	116	0				57	79	91	173	176	176	152
13	116	0				62	78	90	173	170	178	139
14	110	0				69	77	82	179	173	179	139
15	105	0				60	75	78	189	171	178	149
16	100	0				63	75	89	201	171	172	152
17	*99	0				44	71	88	201	178	170	152
18	111	0				36	72	88	199	180	176	145
19	107	0				32	56	88	211	173	178	136
20	102	0				39	63	92	216	166	177	144
21	99	0				43	60	82	220	163	182	142
22	91	0				42	58	79	231	166	171	135
23	85	0				44	a 64	96	240	169	174	136
24	85	0				49	a 62	102	251	171	182	135
25	78	0				49	a 60	99	251	175	173	145
26	73	0				47	a 62	92	243	183	175	148
27	85	0				53	a 62	90	241	184	173	156
28	96	0				54	*a 63	83	254	185	175	151
29	97	0				54	68	100	*249	184	173	149
30	99	0				55	68	118	255	191	174	148
31	106					*66		*112		*194	169	
Total	3,454	773	0	0	0	1,202.8	2,162	2,768	5,872	5,674	5,346	4,525
Mean	111	25.8	0	0	0	38.8	72.1	89.3	196	183	172	151
Max.	161	118	0	0	0	69	88	118	255	255	185	179
Min.	73	0	0	0	0	0	56	61	102	165	154	135
Ac-ft	6,850	1,530	0	0	0	2,380	4,290	5,490	11,650	11,250	10,600	8,980

Calendar year 1960:

Max 331

Min 0

Mean 134

Acres-feet 96,970

Water year 1960-61:

Max 255

Min 0

Mean 87.1

Acres-feet 63,020

* Discharge measurement made on this day.

a No gage-height record.

Note.--Head-discharge relation indefinite June 30 to Sept. 8.

SAN JOAQUIN RIVER BASIN

687

11-3255. Mokelumne River at Woodbridge, Calif.

Location.--Lat 38°09'30", long 121°18'10", in NE $\frac{1}{4}$ sec. 34, T.4 N., R.6 E., on left bank at Woodbridge, 0.3 mile downstream from county highway bridge and 0.4 mile downstream from dam and canal intake of Woodbridge Irrigation District.

Drainage area.--644 sq mi.

Records available.--May 1924 to September 1961 (low-water records only 1924-25).

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 14.9 ft above mean sea level (levels by East Bay Municipal Utility District). May 1924 to July 1928, about 100 ft downstream from bridge at datum about 4 ft higher; July 1928 to March 1931, 400 ft downstream from bridge at about same datum.

Average discharge.--32 years (1929-61), since start of diversion through East Bay Municipal Utility District aqueduct, 639 cfs (462,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,930 cfs Nov. 10 (gage height, 13.47 ft); minimum daily, 12 cfs Apr. 20-23, 30.

1924-61: Maximum discharge, 27,000 cfs Nov. 22, 1950 (gage height, 29.58 ft), from rating curve extended above 6,000 cfs on basis of contracted-opening measurement of peak flow; minimum daily, 1.4 cfs Sept. 19, 20, 22, 1927.

Remarks.--Records good. Concerning regulation and diversions see Remarks for Mokelumne River at Lancha Plana (p. 684); between Woodbridge and Lancha Plana are many additional diversions for irrigation, including Woodbridge Canal (see preceding page).

Cooperation.--Fifteen discharge measurements furnished by East Bay Municipal Utilities District.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	128	*64	183	164	*336	*23	22	13	13	19	*17	*19
2	70	55	215	175	334	21	21	14	13	19	17	19
3	*29	43	309	*184	375	21	21	15	15	19	16	19
4	30	60	319	186	281	23	19	*14	17	18	16	27
5	30	70	322	187	137	22	18	14	18	18	16	32
6	30	80	323	188	117	23	16	14	18	18	16	32
7	30	*90	323	187	127	26	16	14	20	18	17	31
8	30	86	225	185	133	29	15	15	*21	18	17	*31
9	35	93	172	184	139	30	14	14	21	18	17	31
10	35	707	176	184	126	35	*13	14	21	17	17	31
11	35	273	172	184	119	35	13	*14	21	17	17	34
12	35	193	168	184	122	33	13	14	21	17	17	39
13	31	193	163	183	113	29	13	14	20	17	17	49
14	35	183	163	183	111	21	13	14	20	18	17	50
15	35	173	163	183	114	27	13	15	*21	18	17	*49
16	35	168	163	184	115	50	13	14	19	18	16	50
17	32	164	163	184	113	57	14	14	19	18	16	56
18	32	164	163	185	113	67	14	*14	21	*18	16	76
19	32	164	163	188	112	66	13	13	21	18	17	74
20	32	162	163	185	111	53	*12	14	19	18	17	72
21	32	161	163	190	110	47	12	14	21	18	17	69
22	34	159	163	190	109	42	12	15	*22	18	17	74
23	36	158	163	186	109	29	12	15	21	19	17	88
24	38	164	164	185	108	32	13	16	20	22	18	86
25	40	165	161	199	109	40	13	15	21	21	18	*79
26	42	194	160	246	109	40	13	*14	21	17	19	73
27	45	186	159	331	54	39	13	14	21	16	19	67
28	50	171	161	272	21	37	*13	13	*17	16	19	60
29	50	170	162	212	---	27	13	15	*18	16	20	59
30	55	*170	162	199	---	22	12	15	18	16	19	60
31	60	---	161	319	---	*21	---	*13	---	*17	19	---
Total	1,263	4,883	5,990	6,196	3,977	1,069	432	440	579	555	535	1,536
Mean	40.7	163	193	200	142	34.5	14.4	14.2	19.3	17.9	17.3	51.2
Max.	128	707	323	331	375	67	22	16	22	22	20	88
Min.	29	43	159	164	21	21	12	13	13	16	16	19
Ac-ft	2,510	9,690	11,880	12,290	7,890	2,120	857	873	1,150	1,100	1,060	3,050
Calendar year 1960:	Max 707		Min 15		Mean 87.9		Acre-feet 63,830					
Water year 1960-61:	Max 707		Min 12		Mean 75.2		Acre-feet 54,470					

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Nov. 8, Dec. 14-21, Jan. 4, Feb. 18-22.

SAN JOAQUIN RIVER BASIN

11-3255. Mokelumne River at Woodbridge, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1			-	-	52	51	44	44	51	50	57	53	61	58	65	63	67	66	73	68	77	73	75	71
2			-	-	52	52	44	44	51	51	56	55	63	60	66	62	70	66	74	69	75	70	72	70
3			-	-	52	52	-	-	51	51	56	54	65	62	66	62	72	67	73	70	75	69	72	68
4			-	-	52	52	-	-	51	51	56	55	65	63	63	58	71	66	73	70	73	70	70	67
5			-	-	52	51	-	-	51	51	55	55	66	62	63	58	70	66	74	70	76	71	70	69
6			-	-	51	49	43	43	51	51	55	54	67	63	59	58	70	66	74	70	76	72	70	68
7			-	-	49	48	43	43	52	51	55	54	67	64	63	57	69	65	74	68	77	72	70	68
8			-	-	48	47	44	43	52	52	55	54	67	63	63	57	68	64	75	69	78	73	69	68
9			-	-	47	46	46	44	52	52	55	54	67	63	63	58	68	66	75	70	78	73	69	68
10			56	55	46	46	47	46	52	52	55	54	66	62	60	59	68	65	78	72	76	73	68	67
11			55	55	47	46	47	47	52	52	55	54	67	62	64	58	67	65	79	74	77	74	68	67
12			55	55	47	47	47	47	52	52	56	55	64	62	65	60	68	65	77	75	77	73	69	68
13			55	55	47	47	47	47	52	52	57	55	65	61	66	61	69	66	79	74	75	72	68	68
14			55	54	-	-	47	47	52	52	58	56	65	61	67	62	69	65	78	74	74	70	69	68
15			54	53	-	-	47	47	52	52	59	57	67	62	67	62	70	65	78	73	74	70	69	68
16			53	53	-	-	47	47	52	51	58	57	68	63	67	62	72	67	77	73	75	70	69	68
17			54	53	-	-	47	47	51	51	58	57	67	64	67	62	73	69	78	74	74	69	68	68
18			54	54	-	-	47	46	-	-	57	57	67	64	67	62	71	68	77	73	75	71	68	68
19			54	54	-	-	46	45	-	-	57	57	68	64	65	63	72	68	78	73	72	71	68	68
20			54	53	-	-	45	45	-	-	57	57	67	60	65	63	73	68	78	72	74	71	68	68
21			54	54	-	-	45	45	-	-	58	57	64	63	67	62	75	70	78	73	74	70	68	68
22			54	53	-	-	45	45	-	-	58	57	61	60	66	62	74	71	78	74	72	69	68	68
23			53	52	48	48	46	45	-	-	60	58	62	60	66	62	74	70	77	73	72	69	68	68
24			52	52	48	47	48	46	52	52	59	59	64	59	66	61	74	70	76	72	74	70	68	68
25			53	52	47	46	49	48	52	52	59	58	63	58	66	62	74	73	76	72	74	71	68	68
26			54	53	46	46	51	49	52	52	58	58	63	58	67	63	75	71	76	71	73	70	68	68
27			53	53	46	46	51	50	53	52	58	58	63	58	67	62	75	71	76	70	73	71	68	68
28			53	52	46	45	50	50	54	52	58	56	68	62	67	64	74	70	77	72	73	71	68	68
29			52	52	45	44	50	50	-	-	59	56	66	64	68	65	71	69	78	73	73	70	68	68
30			52	51	44	44	50	50	---	---	59	56	69	63	68	65	73	65	79	74	72	70	68	68
31			---	---	44	44	50	50	---	---	60	57	---	---	66	65	---	---	79	74	74	70	---	---
Avg			-	-	-	-	-	-	-	-	57	56	65	62	65	61	71	67	77	72	75	71	69	68

SACRAMENTO RIVER BASIN

689

11-3263. Dry Creek near Ione, Calif.

Location.--Lat 38°24'54", long 120°54'18", in SW 1/4 sec. 32, T.7 N., R.10 E., on right bank 1,000 ft downstream from bridge on State Highway 104 and 4.6 miles northeast of Ione.

Drainage area.--70.8 sq mi.

Records available.--February 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map).

Extremes.--1960: Maximum discharge during period February to September, 1,010 cfs Feb. 8 (gage height, 7.06 ft), from rating curve extended above 320 cfs; no flow for several months.

1960-61: Maximum discharge during water year, 94 cfs Mar. 17 (gage height, 4.18 ft); no flow for several months.

Remarks.--No known diversion or regulation above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, February to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						9.1	20	12	1.0			
2						8.7	17	11	.7			
3						8.7	15	11	.5			
4						8.2	14	9.6	.3			
5					22	9.1	13	8.2	.3			
6					23	11	11	7.0	.3			
7					20	*16	9.6	6.0	.2			
8					460	40	9.6	6.0	.2			
9					226	22	8.7	5.3	.1			
10					208	17	8.7	4.7	.1			
11					125	15	9.1	4.4	.1			
12					75	31	9.1	3.9	.1			
13					47	217	7.8	*3.4	0			
14					33	99	7.8	3.2	0			
15					26	60	7.0	3.2	0			
16					21	40	7.0	3.0	0			
17					17	30	7.0	2.6	0			
18					19	24	6.3	2.4	0			
19					22	20	6.0	2.3	0			
20					16	18	*5.6	2.0	0			
21					15	16	5.3	1.8	0			
22					13	14	5.3	1.7	0			
23					12	13	7.8	2.0	0			
24					11	*12	13	3.0	0			
25					11	12	11	3.7	0			
26					10	11	9.1	3.2	0			
27					9.6	23	*33	*2.4	0			
28					9.1	40	41	2.1	0			
29					9.1	22	22	1.8	0			
30						20	16	1.5	0			
31						26		1.4	0			
Total						912.8	362.8	135.8	3.9	0	0	0
Mean						29.4	12.1	4.38	0.13	0	0	0
Max.						217	41	12	1.0	0	0	0
Min.						8.2	5.3	1.4	0	0	0	0
Ac-ft						1,810	720	269	7.7	0	0	0
Calendar year												
Water year												

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3263. Dry Creek near Ione, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	0.8	6.3	3.6	8.8	3.7	0.3			
2			1.6	.9	8.5	3.7	8.0	4.4	.3			
3			7.4	1.0	1.1	3.7	7.4	3.8	.3			
4			3.6	1.0	8.4	3.7	6.6	3.1	.3			
5			2.5	*1.0	6.4	3.9	6.3	2.8	.3			
6			1.7	1.0	5.2	4.3	5.7	2.7	.2			
7			1.4	1.0	5.1	4.8	5.1	3.3	.2			
8			1.2	1.0	4.6	*4.4	4.9	3.5	.1			
9			.9	1.1	*4.9	4.7	4.5	2.9	.1			
10			1.1	1.1	5.0	5.3	4.3	2.9	.1			
11			1.5	1.1	7.9	4.9	4.0	3.4	.1			
12			1.5	1.1	1.7	4.7	3.8	3.4	0			
13			1.3	1.1	1.1	4.4	4.8	3.1	0			
14			1.2	1.1	7.5	4.2	4.4	2.5	0			
15			1.4	1.2	7.2	1.9	3.9	2.1	0			
16			1.1	1.3	1.0	2.9	3.4	1.8	0			
17			1.1	1.4	8.6	6.2	3.0	1.5	0			
18			1.1	1.4	6.8	3.9	2.8	1.3	0			
19			*1.0	1.3	6.0	2.1	2.6	1.4	0			
20			.9	1.4	5.4	2.3	2.4	1.3	0			
21			.8	1.3	5.0	*2.0	2.5	1.3	0			
22			.9	1.3	4.6	1.5	8.0	1.2	0			
23			.9	1.3	4.8	1.7	1.7	1.1	0			
24			.8	1.4	4.4	1.7	1.4	*.9	0			
25			.8	1.7	4.2	2.6	*8.8	.8	0			
26			.9	*4.4	4.1	2.1	6.3	.6	0			
27			1.0	5.8	3.9	1.9	*5.3	.5	0			
28			1.0	3.9	3.8	1.9	4.3	.4	0			
29			1.0	3.5	-	1.5	3.7	.3	0			
30			.9	*3.5	-	1.2	3.4	.3	0			
31			1.0	5.0	-	9.6	-	.3	-			
Total	0	0	57.9	55.4	187.6	443.9	170.0	62.6	2.3	0	0	0
Mean	0	0	1.87	1.79	6.70	14.3	5.67	2.02	0.08	0	0	0
Max.	0	0	16	5.8	17	62	17	4.4	0.3	0	0	0
Min.	0	0	0	0.8	3.8	3.6	2.4	0.3	0	0	0	0
Ac-ft	0	0	115	110	372	880	337	124	4.6	0	0	0
Calendar year 1960:			Max	-	Min	-	Mean	-	Acre-feet	-		
Water year 1960-61:			Max	62	Min	0	Mean	2.68	Acre-feet	1,940		

* Discharge measurement made on this day.

MOKELUMNE RIVER BASIN

691

11-3270. Sutter Creek near Sutter Creek, Calif.

Location.--Lat 38°23'45", long 120°46'50", in S¹/₄ sec.5, T.6 N., R.11 E., on left bank 1.3 miles east of town of Sutter Creek.

Drainage area.--50.6 sq mi.

Records available.--October 1935 to December 1941, March 1960 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder and artificial control. Altitude of gage is 1,220 ft (from topographic map). Prior to Oct. 29, 1937, staff gage 15 ft downstream at datum 4.00 ft lower. Oct. 29, 1937, to Dec. 7, 1938, staff gage at same site at datum 4.00 ft lower.

Average discharge.--7 years, 32.5 cfs (23,530 acre-ft per year).

Extremes.--Maximum discharge during year, 61 cfs Nov. 26 (gage height, 1.27 ft); no flow for many months.

1935-41, 1960-61: Maximum discharge, 3,900 cfs Feb. 22, 1936 (gage height, 8.0 ft), from rating curve extended above 1,800 cfs; no flow at times in each year except 1938 and 1941.

Remarks.--Small diversions for irrigation upstream.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by the Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961											
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1		0	1.0	3.4	7.1	5.7	1.1	6.5	2.6		
2		0	2.5	3.4	7.5	5.8	9.6	6.6	2.4		
3		0	1.6	3.4	1.1	5.8	9.4	5.6	2.2		
4		0	9.9	3.4	8.5	5.8	8.9	4.9	1.9		
5		0	7.1	* 3.4	7.1	6.2	7.6	4.7	1.7		
6		0	6.2	2.6	6.8	9.2	7.4	5.2	1.5		
7		0	5.9	2.7	6.2	1.1	6.9	6.2	1.4		
8		0	5.6	2.8	6.0	* 8.8	7.2	5.7	1.3		
9		0	6.0	2.8	* 6.0	9.4	6.7	5.1	1.3		
10		0	5.6	2.7	5.6	1.0	6.7	5.3	1.2		
11		0	5.4	2.6	1.3	7.9	6.0	5.9	1.0		
12		2.2	5.2	2.7	1.9	7.4	6.2	6.2	.8		
13		6.9	5.2	2.6	1.2	8.7	7.4	5.5	.7		
14		* 1.1	4.9	2.8	9.8	6.7	6.8	5.0	.5		
15		5.3	4.5	3.0	9.2	2.0	6.2	4.4	.2		
16		3.6	4.5	3.3	1.3	3.8	5.6	4.2	0		
17		3.1	4.7	3.2	1.1	3.7	5.3	3.8	0		
18		4.0	4.5	3.2	1.0	3.2	4.9	3.4	0		
19		5.2	* 4.2	3.3	9.8	2.1	4.5	3.1	0		
20		4.1	4.2	3.9	8.8	2.5	4.5	2.9	0		
21		3.4	4.4	3.7	7.8	* 2.1	4.7	2.9	0		
22		3.2	4.5	3.4	6.8	1.7	1.0	2.8	0		
23		3.0	4.4	3.6	7.1	1.6	2.0	2.5	0		
24		2.7	4.2	3.9	7.1	1.6	1.6	* 2.5	0		
25		2.5	4.4	3.5	6.4	3.9	* 1.4	2.6	0		
26		2.6	4.4	* 5.9	6.2	2.6	1.2	2.4	0		
27		1.6	4.5	7.0	6.0	2.2	9.8	2.2	0		
28		8.2	4.0	5.0	5.6	2.1	8.5	2.2	0		
29		* 5.9	3.6	3.9	-	1.6	7.4	2.2	0		
30		5.0	3.7	* 5.1	-	1.3	6.6	2.1	0		
31		-	3.7	5.8	-	1.2	-	2.3	-		
Total	0	121.3	190.4	112.0	240.4	500.4	247.8	126.9	20.7	0	0
Mean	0	4.04	6.14	3.61	8.99	16.1	8.26	4.09	0.69	0	0
Max.	0	26	25	7.0	19	39	20	6.6	2.6	0	0
Min.	0	0	3.6	2.6	5.6	5.7	4.5	2.1	0	0	0
Ac-ft	0	241	378	222	477	993	492	252	41	0	0
Calendar year 1960: Max - Min 0 Mean 4.27 Acre-feet 3,100											
Water year 1960-61: Max 39 Min 0 Mean 4.27 Acre-feet 3,100											

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3295. Dry Creek near Galt, Calif.

Location.--Lat 38°14'48", long 121°13'03", in NE¼ sec. 32, T.5 N., R.7 E., on right bank of main channel just downstream from county road bridge, 2 miles downstream from Coyote Creek, and ¼ mile east of Galt.

Drainage area.--325 sq mi.

Records available.--October 1926 to September 1933, October 1944 to September 1961. Monthly figures only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 52.83 ft above mean sea level (levels by East Bay Municipal Utility District). Dec. 4, 1926, to Sept. 30, 1933, at site ¼ mile downstream at different datum. Oct. 1, 1944, to Sept. 30, 1945, at present site at datum 3.00 ft higher.

Average discharge.--24 years, 105 cfs (76,020 acre-ft per year); median of yearly mean discharges, 66 cfs (47,800 acre-ft per year).

Extremes.--Maximum discharge during year, 177 cfs Feb. 2 (gage height, 4.45 ft); no flow for several months.

1926-33, 1944-61: Maximum discharge, 24,000 cfs Apr. 3, 1958 (gage height, 15.28 ft); no flow for several months in each year.

Remarks.--Records good. Many small diversions above station for irrigation. Total storage of many small reservoirs, about 1,000 acre-ft and total number of acres irrigated, approximately 500.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.25	0	2.8	8.6
2.4	.2	3.0	19.0
2.5	.9	3.5	58
2.6	2.4	4.0	114
2.7	4.9		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	24	0	5.5					
2		0		0	50	0	2.8					
3		0		0	100	0	1.0					
4		0		0	36	0	.3					
5		0		0	10	0	0					
6		0		0	2.0	0	0					
7		0		0	.5	0	0					
8		0		0	.1	0	0					
9		0		0	0	0	0					
10		* 0		0	0	0	0					
11		0		0	0	0	0					
12		0		0	0	0	0					
13		0		0	3.1	0	0					
14		0		0	3.8	0	0				(*)	
15		0		0	.3	* 0	0					
16		0		0	0	0	0					
17		0		0	1.0	102	0					
18		0		0	1.1	110	0					
19		0		* 0	0	54	0					
20		0		0	0	30	0					
21	(*)	0		0	0	32	0					
22		0	(*)	0	0	25	0	(*)				(*)
23		0	(*)	0	* 0	16	0		(*)			
24		0		0	0	15	0					
25		0		0	0	17	* 0					
26		0		0	0	47	0					
27		0		0	0	32	0					
28		0		0	0	29	0					
29		1.0		0	0	27	0			(*)		
30		* 0		0	0	17	0					
31				* 1.8	14	17	0					
Total	0	1.0	0	32	231.9	562.5	9.6	0	0	0	0	0
Mean	0	0.03	0	1.03	8.28	18.1	0.32	0	0	0	0	0
Max.	0	1.0	0	18	100	110	5.5	0	0	0	0	0
Min.	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	2.0	0	63	460	1,120	19	0	0	0	0	0

Calendar year 1960:

Water year 1960-61: Max 2,300 Min 0 Mean 37.2 Acre-feet 27,030

Max 110 Min 0 Mean 2.29 Acre-feet 1,660

Peak discharge (base, 1,500 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-3330. Camp Creek near Somerset, Calif.

Location.--Lat 38°39'26", long 120°39'46", in SW 1/4 sec. 4, T.9 N., R.12 E., on right bank 0.2 mile upstream from mouth, 1.3 miles north-east of Somerset, and 5.6 miles south of Camino.

Drainage area.--62.7 sq mi.

Records available.--February to May 1924 (published as "near Pleasant Valley"), October 1954 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,820 ft (from topographic map). Feb. 1 to May 31, 1924, staff gage at site about 0.2 mile upstream at different datum.

Average discharge.--7 years (1954-61), 64.8 cfs (46,910 acre-ft per year), adjusted for storage, diversion, and evaporation from Jenkinson Lake.

Extremes.--Maximum discharge during year, 39 cfs Feb. 11 (gage height, 2.43 ft); minimum, 0.5 cfs Aug. 1-3. 1924, 1954-61: Maximum discharge, 6,020 cfs Dec. 23, 1955 (gage height, 12.48 ft); minimum, that of Aug. 1-3, 1961.

Remarks.--Records good. Flow partly regulated since January 1955 by Jenkinson Lake (usable capacity, 40,570 acre-ft). Water is released from Jenkinson Lake through Camino conduit for irrigation and domestic supply in North Fork Cosumnes and South Fork American River basins.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.3	0.5	1.8	8.3
1.4	1.2	2.0	14
1.5	2.2	2.2	24
1.6	3.5	2.5	44

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.1	*7.6	14	3.9	7.8	5.3	9.8	7.0	6.3	2.5	0.7	1.8
2	3.1	4.3	29	3.9	8.9	5.6	8.6	7.6	6.0	2.3	.6	1.9
3	3.1	5.3	14	4.0	10	6.0	7.6	6.3	5.8	2.3	.8	1.6
4	3.1	6.3	8.3	4.3	7.0	5.6	7.0	5.8	5.3	2.6	1.3	1.8
5	3.1	6.6	6.6	4.0	6.3	5.8	6.6	5.8	5.3	2.7	1.3	1.8
6	6.9	7.3	5.8	4.3	6.0	8.0	6.3	7.3	5.0	2.7	1.3	1.8
7	8.9	11	5.0	4.0	5.8	7.3	6.0	8.6	5.0	2.6	1.4	1.9
8	9.5	8.0	5.0	4.0	5.8	6.0	5.8	6.3	5.0	2.3	1.3	2.0
9	9.2	6.8	4.8	4.0	6.8	11	5.6	6.0	5.0	4.3	1.3	2.0
10	8.6	5.8	4.8	4.0	10	8.3	5.3	11	4.8	5.0	1.3	2.0
11	9.2	6.3	4.8	4.0	20	8.6	5.3	10	4.8	4.8	1.3	2.0
12	8.3	12	4.6	4.0	17	8.0	6.8	9.8	4.8	5.6	1.4	2.0
13	10	16	4.6	4.0	11	7.3	7.8	8.0	4.8	5.3	1.4	2.0
14	10	13	4.6	4.6	8.6	6.8	6.0	7.0	*4.6	5.3	1.3	2.0
15	9.8	9.8	4.6	4.3	10	16	5.6	6.6	4.3	4.8	1.4	2.0
16	9.2	6.6	4.6	*4.3	12	*15	5.3	6.3	4.0	5.0	*1.4	2.1
17	8.9	6.3	4.8	4.0	9.2	18	5.3	5.3	3.9	2.7	1.4	2.6
18	8.9	12	4.8	4.0	8.3	16	5.3	4.8	3.9	1.6	1.4	2.7
19	8.9	7.8	4.6	4.0	7.6	12	5.3	5.0	3.9	1.6	1.4	3.0
20	8.9	6.3	4.6	4.0	6.8	14	*7.6	5.0	3.7	1.4	1.6	3.0
21	8.9	5.8	4.6	4.0	6.6	12	8.9	5.6	3.5	1.4	1.3	3.0
22	8.9	5.6	4.3	4.0	6.3	10	14	5.6	3.2	1.4	1.4	2.8
23	8.6	5.3	4.3	4.0	6.0	13	16	5.6	3.2	1.3	1.4	2.7
24	8.6	5.3	4.3	4.3	5.8	13	11	5.3	3.4	1.2	1.4	2.6
25	8.9	5.8	4.3	4.3	5.8	23	9.2	5.3	3.4	1.1	1.4	2.5
26	9.5	18	4.3	7.3	5.6	18	8.9	5.3	3.2	1.0	1.4	2.3
27	10	11	4.3	6.8	5.3	20	7.8	5.3	3.0	1.0	1.4	2.3
28	10	6.8	4.0	5.0	5.3	18	7.6	5.3	2.7	.9	1.4	2.3
29	9.8	5.8	4.0	5.0	-	14	6.6	5.3	2.7	.8	1.6	2.3
30	9.8	6.3	4.0	6.3	-----	12	6.3	5.3	2.6	.8	1.8	2.5
31	9.8	-----	4.0	7.0	-----	11	-----	7.3	-----	.8	1.8	-----
Total	253.5	240.8	190.3	139.6	231.6	354.6	225.2	200.7	127.1	79.1	41.6	67.3
Mean	8.18	8.03	6.14	4.50	8.27	11.4	7.51	6.47	4.24	2.55	1.34	2.24
Max	10	18	29	7.3	20	23	16	11	6.3	5.6	1.8	3.0
Min	3.1	4.3	4.0	3.9	5.3	5.3	5.3	4.8	2.6	0.8	0.6	1.6
Ac-ft	503	475	377	277	459	703	447	398	252	157	83	133
(†)	-734	+31	+211	-54	+844	+1,880	+1,820	+1,800	-3,580	-6,610	-5,410	-3,210
(*)	489	245	250	50	0	0	7.9	243	3,880	6,600	5,240	2,910
(††)	103	15	23	38	28	27	1.7	117	267	285	197	114

Adjusted for change in lake contents, diversion, and evaporation

Mean	5.85	12.9	14.0	5.06	24.0	42.4	40.2	41.6	13.8	7.03	1.79	-0.79
Ac-ft	361	769	861	311	1,330	2,610	2,390	2,560	819	432	110	-47
Observed												
Calendar year 1960:	Max	311	Min	2.8	Mean	22.5	Ac-ft	16,360	Mean	44.0	Ac-ft	31,850
Water year 1960-61:	Max	29	Min	0.6	Mean	5.89	Ac-ft	4,270	Mean	17.3	Ac-ft	12,510

* Discharge measurement made on this day.

† Change in contents, in acre-feet, in Jenkinson Lake, furnished by Bureau of Reclamation.

†† Diversion, in acre-feet, from Jenkinson Lake, furnished by Bureau of Reclamation.

††† Evaporation, in acre-feet, from Jenkinson Lake, furnished by Bureau of Reclamation.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of net runoff may appear. This arises primarily from the difficulty of computing net runoff as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SAN JOAQUIN RIVER BASIN

11-3335. North Fork Cosumnes River near El Dorado, Calif.

Location.--Lat 38°35'20", long 120°50'38", in SW¼ sec.35, T.9 N., R.10 E., on downstream side of left abutment of county road bridge, 0.8 mile north of Nashville, 2.6 miles upstream from mouth, and 6 miles south of El Dorado.

Drainage area.--202 sq mi.

Records available.--August 1911 to December 1941, October 1948 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 840 ft (from topographic map). Prior to October 1933, staff gage at site about 1.5 miles upstream at different datum. October 1933 to December 1941, water-stage recorder at site 1,000 ft upstream at different datum.

Extremes.--Maximum discharge during year, 214 cfs Mar. 25 (gage height, 3.29 ft); minimum, 0.2 cfs Sept. 11, 12, 13.

1911-41, 1948-61: Maximum discharge, 15,800 cfs Dec. 23, 1955 (gage height, 14.8 ft), from rating curve extended above 2,500 cfs on basis of slope-area measurement of peak flow; no flow for part of 1924, 1926, 1931, 1933-34.

Remarks.--Records good except those for periods of shifting control, which are fair. Flow partly regulated since January 1955 by Jenkinson Lake (useable capacity, 40,570 acre-ft). Camino conduit above the station diverts water out of the basin (see Remarks for station Camp Creek near Somerset). Numerous small diversions above station for irrigation and domestic use.

Rating tables, except periods of shifting-control method (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 2

Dec. 2 to Sept. 30

1.5	2.3	2.1	31	1.25	0.2	1.7	12
1.6	4.2	2.3	53	1.3	.6	1.8	18
1.7	7.0	2.5	83	1.4	1.6	2.0	38
1.9	16	3.0	168	1.5	3.4	2.5	103
				1.6	6.6	3.1	185

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	8.2	18	17	46	29	99	78	70	14	25	27
2	2.9	8.2	*151	16	54	29	98	84	65	31	10	30
3	3.1	*7.4	104	15	72	31	104	74	66	36	12	15
4	3.2	7.8	60	18	60	35	110	*72	60	37	9.4	13
5	3.4	7.8	44	18	46	31	106	68	51	37	9.9	30
6	*3.9	9.0	35	16	41	36	99	70	47	37	10	29
7	7.0	9.0	29	19	37	41	*94	90	43	36	13	26
8	10	12	26	18	36	35	85	77	41	35	16	8.2
9	8.2	12	24	17	37	44	78	73	38	55	16	1.1
10	8.2	9.8	24	17	50	55	73	87	35	68	16	.5
11	7.8	9.4	25	17	88	44	69	108	29	65	10	.3
12	7.8	12	23	17	131	44	70	107	30	63	6.2	.3
13	7.0	32	23	17	80	41	82	95	27	59	6.2	.3
14	7.8	45	22	16	61	39	68	91	*21	54	6.6	.4
15	7.4	26	21	17	*56	90	64	89	24	55	9.4	.4
16	7.0	18	21	*17	78	*103	60	86	31	63	*13	.5
17	7.0	13	21	18	60	112	60	81	46	54	13	.8
18	7.0	16	22	18	54	104	61	78	47	47	13	1.1
19	7.0	28	22	17	47	82	60	78	44	32	13	*2.2
20	7.0	20	22	16	42	98	54	76	41	*29	14	6.2
21	7.0	14	21	16	41	96	50	78	38	30	13	9.4
22	7.4	12	21	16	39	90	74	73	54	20	13	7.4
23	7.4	12	21	16	38	108	99	67	54	25	14	5.9
24	7.4	11	20	16	36	116	86	60	37	23	14	4.0
25	7.8	11	20	17	35	177	70	56	37	21	*13	4.0
26	8.2	51	20	23	34	133	68	54	41	22	14	3.4
27	9.0	58	20	35	32	134	67	50	25	22	17	2.2
28	9.0	25	19	30	30	138	67	64	21	16	24	2.4
29	9.0	17	18	25	-	112	70	72	25	12	28	3.2
30	9.0	15	17	25	-	102	74	68	21	21	27	4.0
31	8.6	-	17	35	-	98	-	68	21	24	26	-
Total	215.2	536.6	950	595	1461	2427	2319	2372	1209	1143	444.7	238.2
Mean	6.94	17.9	30.6	19.2	52.2	78.3	77.3	76.5	40.3	36.9	14.3	7.94
Max.	10	58	151	35	131	177	110	108	70	68	28	30
Min.	2.7	7.4	17	15	30	29	50	50	21	12	6.2	0.3
Ac-ft	427	1,066	1,880	1,180	2,900	4,810	4,600	4,700	2,400	2,270	882	472

Calendar year 1960 : Max 2,350 Min 0.8 Mean 93.0 Acres-feet 67,490

Water year 1960-61 : Max 177 Min 0.3 Mean 38.1 Acres-feet 27,580

Peak discharge (base, 1,800 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1-6, June 3 to Sept. 30.

11-3342. Middle Fork Cosummes River near Somerset, Calif.

Location.--Lat 38°37'29", long 120°42'02", in NW1/4 sec.19, T.9 N., R.12 E., on left bank 1,000 ft downstream from county road bridge, 0.2 mile downstream from Perry Creek, and 1.8 miles southwest of Somerset.

Drainage area.--108 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,647.95 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year 195 cfs Dec. 2 (gage height, 5.16 ft); minimum, 1.7 cfs probably Sept. 11 (from recorded range in stage).

1957-61: Maximum discharge, 3,400 cfs Apr. 3, 1958 (gage height, 10.85 ft); minimum, 1.7 cfs probably Sept. 11, 1961.

Flood of Dec. 23, 1955 reached a stage of 18.1 ft, from floodmarks (discharge not determined).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No storage or diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 30

July 1 to Sept. 30

2.6	4.0	2.3	1.5
2.8	7.5	2.5	2.5
3.0	12	2.7	4.8
3.5	27	2.9	8.5
4.0	53	3.2	16
4.5	99		
5.0	169		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	7.3	40		42	28	106	105	51	10	3.3	
2	4.4	7.1	139		40	28	115	103	52	9.0	3.2	
3	4.6	*8.1	61		57	32	134	96	49	8.8	3.2	
4	4.6	11	38		43	30	140	94	45	11	3.1	
5	*4.6	10	30		36	30	134	88	42	11	2.9	
6	8.2	9.5	23		32	37	124	91	40	9.8	2.7	
7	12	13	21		31	35	115	98	38	9.0	2.7	
8	10	13	21	15	30	32	100	97	36	8.1	2.7	
9	8.5	11	22		32	42	96	90	34	7.7	2.9	
10	8.1	10	21		38	39	89	114	32	7.2	2.8	3
11	8.1	10	21		66	38	84	121	30	6.6	2.8	
12	8.1	22	19		68	38	90	121	29	6.2	2.8	
13	8.1	50	19		49	36	89	120	27	6.2	2.6	
14	7.9	40	19		44	37	85	115	*25	5.8	2.7	
15	7.7	25	20		49	74	79	111	23	5.3	2.5	
16	7.5	19	20	*14	49	*63	79	105	21	5.1	*2.4	
17	7.5	17		14	43	75	82	100	20	5.1	2.3	
18	7.3	21		13	40	67	81	98	19	4.8	2.2	5
19	7.1	25		14	36	60	76	98	18	4.5	2.2	*7.0
20	7.1	21		14	36	74	*68	97	17	*4.8	2.4	5.1
21	6.9	18		14	36	85	67	94	16	4.7	2.4	4.3
22	6.9	16		14	36	85	86	85	15	4.4	2.4	4.0
23	6.9	16		15	34	106	90	82	14	4.4	2.2	3.9
24	6.9	15	20	15	33	118	74	75	13	4.2	*2.0	3.8
25	6.7	15		15	32	125	74	71	12	4.0	1.9	3.5
26	6.9	51		23	32	101	74	67	12	4.2	1.9	3.4
27	7.3	35		34	30	106	79	63	12	4.0	1.9	3.2
28	7.5	24		24	29	97	87	58	11	3.8	2.0	3.3
29	7.5	20		22	-	89	97	55	11	3.2	2.0	3.3
30	7.5	19		24	-	89	101	51	10	3.4	2.1	3.4
31	7.5	-		29	-	98	-	53	-	3.4	3	-
Total	224.2	579.0	834	523	1123	1994	2795	2816	774	189.7	78.2	104.2
Mean	7.23	19.3	26.9	16.9	40.1	64.3	93.2	90.8	25.8	6.12	2.52	3.47
Max.	12	51	139	34	68	125	140	121	52	11	3.3	7.0
Min.	4.3	7.1	19	13	29	28	67	51	10	3.2	1.9	-
Ac-ft	445	1,150	1,650	1,040	2,230	3,960	5,540	5,590	1,540	376	155	207

Calendar year 1960 : Max 1,500 Min 4.0 Mean 78.5 Acre-feet 56,990
 Water year 1960-61 : Max 140 Min - Mean 33.0 Acre-feet 23,880

Peak discharge (base, 700 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 17 to Jan. 15, Aug. 31 to Sept. 19.

SAN JOAQUIN RIVER BASIN

11-3343. South Fork Cosumnes River near River Pines, Calif.

Location.--Lat 38°33'25", long 120°47'32", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 8, T. 8 N., R. 11 E., on left bank 2.4 miles upstream from mouth and 2.7 miles west of River Pines.

Drainage area.--64.3 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,220 ft (from topographic map).

Extremes.--Maximum discharge during the year, 57 cfs Dec. 1 (gage height, 1.58 ft); no flow for several months.

1957-61: Maximum discharge 4,740 cfs Apr. 3, 1958 (gage height, 9.90 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement of peak flow; no flow for several months in 1959-61.

Remarks.--Records good. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.1	0	0.8	8.0
.2	.1	1.0	16
.3	.3	1.2	28
.4	1.1	1.4	42
.5	2.1	1.6	59
.6	3.5		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	16	3.7	10	6.8	18	11	4.5			
2		0	4.7	3.3	12	6.8	16	11	4.5			
3		*0	28	3.5	17	7.1	15	9.6	4.5			
4		0	17	3.9	14	7.1	13	8.9	4.1			
5		0	13	3.5	11	7.4	12	8.0	3.7			
6		0	11	3.7	10							
7		0	9.2	4.1	9.2	11	10	8.0	3.0			
8		.6	8.3	3.9	8.6	10	10	8.9	2.6			
9		1.0	7.4	3.9	8.3	12	9.2	7.7	*2.4			
10		.8	7.1	3.9	8.6	12	8.6	8.9	2.3			
11		.9	6.8	3.9	18	12	8.3	10	2.0			
12		1.8	6.1	3.9	25	11	7.7	10	1.8			
13		5.9	5.9	3.9	18	10	9.2	8.0	1.7			
14		13	5.7	3.7	14	10	8.0	7.7	1.4			
15		8.6	5.5	3.9	*14	24	6.8	7.7	1.2			
16		5.5	5.7	3.9	19	25	6.4	7.1	.9			
17		3.9	5.5	*3.7	15	42	5.7	6.6	.5			
18		4.9	5.5	3.7	13	36	5.5	6.1	.2			
19		7.1	5.3	3.7	12	28	5.1	5.9	.2			(*)
20		4.9	4.9	3.7	11	29	*5.1	5.7	.1	(*)		.
21		3.9	4.9	3.7	10	25	5.1	6.1	.1			
22		3.5	4.9	3.7	9.6	22	12	5.9	.1			
23		3.1	4.7	3.7	9.2	23	23	5.7	0			
24		3.0	4.7	3.7	8.6	23	19	5.3	0			
25		2.6	4.5	3.9	8.0	46	16	4.9	.2			
26		23	4.5	5.9	8.0	34	*15	4.3	0			
27		22	4.5	9.2	7.4	32	14	4.1	0			
28		12	4.3	7.7	7.1	30	12	3.7	0			
29		8.6	3.9	6.4	—	24	12	3.9	0			
30		7.1	3.9	6.6	—	22	11	3.9	0			
31		—	3.9	8.0	—	19	—	3.9	—			
Total	0	147.7	269.6	137.9	335.6	617.2	330.7	216.8	45.3	0	0	0
Mean	0	4.92	8.70	4.45	12.0	19.9	11.0	6.99	1.51	0	0	0
Max.	0	23	47	9.2	25	46	23	11	4.5	0	0	0
Min.	0	0	3.9	3.3	7.1	6.8	5.1	3.7	0	0	0	0
Ac-ft	0	293	535	274	666	1,220	656	430	90	0	0	0

Calendar year 1960 :

Max 885

Min 0

Mean 18.1

Acres-feet 13,110

Water year 1960-61 :

Max 47

Min 0

Mean 5.76

Acres-feet 4,160

Peak discharge (base, 600 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

697

11-3350. Cosummes River at Michigan Bar, Calif.

Location.--Lat 38°30'00", long 121°02'45", in SE¼ sec.36, T.8 N., R.8 E., on downstream side of midstream pier of highway bridge at Michigan Bar, 5.5 miles southwest of Latrobe, and 12 miles downstream from confluence of North and Middle Forks.

Drainage area.--537 sq mi.

Records available.--October 1907 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 168.09 ft above mean sea level, datum of 1929. Prior to July 10, 1930, staff gage at same site and datum.

Average discharge.--54 years, 475 cfs (343,900 acre-ft per year).

Extremes.--Maximum discharge during year, 486 cfs Mar. 25 (gage height, 3.85 ft); no flow Sept. 20.

1907-61: Maximum discharge, 42,000 cfs Dec. 23, 1955 (gage height, 14.59 ft), from rating curve extended above 6,000 cfs on basis of comparison with upstream and downstream peaks and velocity-area studies; no flow for parts of many years.

Flood in March 1907 reached a stage of 16.3 ft.

Remarks.--Records good. Flow partly regulated by Jenkinson Lake (usable capacity, 40,570 acre-ft). Camino conduit above the station diverts water out of the basin (see Remarks for station Camp Creek near Somerset). Numerous small diversions above station for irrigation and domestic use.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.7	1.0	2.5	52
1.8	2.5	2.8	97
1.9	5.0	3.1	167
2.0	9.0	3.5	310
2.2	22	4.0	580

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	13	*50	40	94	*65	228	*187	103	17	*27	20
2	4.2	13	230	38	149	65	232	204	99	16	27	18
3	4.0	14	252	34	153	66	242	180	97	*29	21	17
4	3.0	14	134	32	142	70	242	170	92	37	14	17
5	4.5	14	94	37	106	71	256	164	82	36	13	12
6	4.5	15	76	38	88	74	242	161	76	37	11	10
7	*4.5	16	62	37	80	83	221	197	70	37	9.6	11
8	5.0	15	56	39	76	82	204	184	65	35	11	11
9	15	19	52	39	80	80	180	174	64	35	14	9.0
10	16	22	52	38	88	103	170	174	60	37	16	7.4
11	15	21	53	37	123	94	161	246	52	39	17	6.2
12	15	21	51	37	260	88	156	249	52	41	16	5.0
13	14	36	48	37	174	87	187	232	49	44	11	4.0
14	14	103	45	37	130	82	156	218	41	43	9.0	4.0
15	13	87	46	36	125	231	153	210	37	42	8.6	3.8
16	14	58	45	37	150	274	139	197	34	37	8.6	2.5
17	13	43	45	*36	132	322	139	190	27	41	12	2.5
18	13	39	44	36	114	294	137	180	38	38	13	3.2
19	13	45	46	36	103	221	137	177	45	35	11	2.8
20	12	58	46	35	94	221	128	174	45	31	11	2.0
21	12	45	45	35	90	238	121	174	42	30	13	2.2
22	12	37	43	35	85	221	150	164	41	29	13	3.2
23	12	32	43	35	83	242	228	156	50	23	*11	4.2
24	11	29	43	36	78	286	228	145	46	21	11	4.5
25	11	29	42	36	76	405	164	134	40	26	11	5.0
26	11	72	42	46	72	338	159	130	37	25	11	5.0
27	11	161	42	60	71	306	153	121	34	26	11	4.5
28	12	88	42	74	68	330	156	112	25	26	11	3.8
29	13	61	39	71	—	270	167	106	19	24	14	4.2
30	13	48	37	62	—	238	177	101	19	19	18	4.0
31	13	—	37	106	—	228	—	*95	—	23	19	—
Total	331.9	1268	1982	1332	3084	5775	5413	5306	1581	979	423.8	209.0
Mean	10.7	42.3	63.9	43.0	110	186	180	171	52.7	31.6	13.7	6.97
Max.	16	161	252	106	260	405	256	249	103	44	27	20
Min.	3.0	13	37	32	68	65	121	95	19	16	8.6	2.0
Ac-ft	658	2,520	3,930	2,640	6,120	11,450	10,740	10,520	3,140	1,940	841	415
Calendar year 1960 :			Max 6,300	Min 2.0		Mean 213		Acre-feet 154,300				
Water year 1960-61 :			Max 405	Min 2.0		Mean 75.8		Acre-feet 54,910				

Peak discharge (base, 4,000 cfs).--No peak above base.

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

11-3357. Deer Creek near Sloughhouse, Calif.

Location.--Lat 38°33'06", long 121°06'30", in NW 1/4 sec. 16, T.8 N., R.8 E., on right bank 0.2 mile upstream from bridge on Scott Road, 0.4 mile west from Little Deer Creek, and 5.9 miles northeast of Sloughhouse.

Drainage area.--46.9 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 160 ft (from topographic map).

Extremes.--Maximum discharge during year, 391 cfs Mar. 15 (gage height, 7.50 ft); no flow for several months.
1959-61: Maximum discharge, 3,100 cfs Feb. 8, 1960 (gage height, 10.45 ft); no flow for several months in each year.

Remarks.--No known regulation or diversion above station.

Cooperation.--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	53		48	4.0	7.0	1.8				
2		0	81		108	3.8	6.8	2.0				
3		0	19		68	* 3.8	5.8	1.9				
4		0	7.7		25	3.6	5.5	1.7				
5		0	4.7		14	3.5	5.2	1.6				
6		0	3.8		11	3.6	4.6	1.5				
7		0	3.1		8.9	3.9	4.3	1.4				
8		0	2.5		* 7.2	3.7	3.9	1.3				
9		0	2.0		12	3.8	3.4	1.2				
10		0	1.9		19	3.3	3.3	1.2				
11		0	2.8		54	3.0	3.0	1.7				
12		0	2.8		49	2.8	3.0	1.6				
13		0	2.7	a 1.1	20	2.8	3.1	1.7				
14		0	2.3		14	2.8	3.0	1.5				
15		0	2.1		18	166	2.8	1.2				
16		0	2.4		32	4.0	2.9	.9				
17		0	3.1		16	87	2.3	.7				
18		0	3.0		12	35	2.0	.5				
19		0	* 2.3		8.9	19	1.8	.5				
20		0	2.3		7.4	15	1.7	.5				
21		0	1.9		7.2	* 12	1.7	.4				
22		0	1.9		6.6	9.6	2.8	.3				
23		0	* 2.0		6.1	9.9	4.9	.2				
24		0	2.0		5.6	12	6.2	.1				
25		0	1.7	a 1.5	5.3	32	* 4.4	.1				
26		7.4	1.7	* 4.0	5.3	19	3.2	0				
27		3.6	1.9	8.4	4.9	14	2.6	0				
28		1.0	* 1.7	5.1	4.4	15	2.2	0				
29		.5	1.6	23	-	11	1.7	0				
30		.3	1.4	* 29	-	8.9	1.6	0				
31			1.2	* 101	-	7.5	-	0				
Total	0	12.8	223.5	198.4	597.8	561.3	106.7	27.5	0	0	0	0
Mean	0	0.43	7.21	6.40	21.4	18.1	3.56	0.89	0	0	0	0
Max.	0	7.4	81	101	108	166	7.0	2.0	0	0	0	0
Min.	0	0	1.2	-	4.4	2.8	1.6	0	0	0	0	0
Ac-ft	0	25	443	394	1,190	1,110	212	55	0	0	0	0
Calendar year 1960:			Max	1,760	Min	0	Mean	9.07	Acre-feet	6,580		
Water year 1960-61:			Max	166	Min	0	Mean	4.73	Acre-feet	3,430		

* Discharge measurement made on this day.

a No gage-height record.

SAN JOAQUIN RIVER BASIN

699

11-3360. Cosumnes River at McConnell, Calif.

Location.--Lat 38°21'29", long 121°20'34", in sec.20, T.6 N., R.6 E., on downstream side of bridge on U. S. Highway 99, 0.2 mile south of McConnell, 1 mile downstream from Deer Creek, and 7 miles north of Galt.

Drainage area.--730 sq mi.

Records available.--October 1941 to September 1961 in reports of Geological Survey. Monthly figures only for some periods, published in WSP 1315-A. Gage heights only during high-water periods 1931-40, in reports of California Department of Water Resources.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers.

Average discharge.--20 years (1941-61), 554 cfs (401,100 acre-ft per year); median of yearly mean discharges, 400 cfs (290,000 acre-ft per year).

Extremes.--Maximum discharge during year, 728 cfs Feb. 3 (gage height, 32.51 ft); no flow for several months.

1943-61: Maximum discharge, 54,000 cfs Dec. 23, 1955 (gage height, 46.26 ft), from rating curve extended above 36,000 cfs; no flow for parts of each year.

Remarks.--Records good except those prior to February, which are fair. Diversions for irrigation of about 2,100 acres between stations at Michigan Bar and at McConnell.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30	
29.5	0	29.36	0
29.6	6	29.4	3
29.8	18	29.6	21
30.0	34	30.0	62
30.2	52	30.4	122
30.6	100	31.0	265
31.0	170	31.5	395
31.5	300	32.2	620

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	37	13	454	52	220	138	40			(*)
2		0	53	17	278	51	218	149	*37			
3		0	273	17	606	49	218	156	33			
4		0	172	10	355	50	235	134	28			
5		0	98	7.2	242	55	*242	124	*26			
6		0	71	12	160	57	232	124	18			
7		0	57	16	113	60	212	126	39			
8		0	46	13	93	70	190	151	0			
9		0	40	17	80	64	168	130	0			
10		0	36	17	81	67	147	120	*0			
11		0	36	14	118	87	134	140	0			
12		0	35	15	261	75	124	195	0			
13		0	32	13	348	70	122	192	0			
14		0	30	13	228	69	138	172	*0			
15		47	28	13	163	*152	115	160	0		(*)	
16		47	26	13	158	458	104	151	0			
17		31	25	*15	222	368	96	130	0			
18		23	24	14	162	467	99	120	0			
19		16	25	14	124	325	99	113	0			
20		22	26	14	101	240	94	106	0			
21		33	26	14	82	248	87	106	0			
22		24	24	14	75	240	93	*104	0			(*)
23		17	23	13	*68	228	140	98	0			
24		4.2	22	13	68	260	210	88	0			
25		0	22	14	64	310	170	80	0			
26		25	22	21	62	410	128	72	0			
27		89	22	29	57	328	117	64	0			
28		110	21	39	56	328	113	58	0			
29		65	21	47	-	308	117	52	0			
30		*46	20	63	-	258	128	47	0			
31		-	14	100	-	258	-	43	-			
Total	0	599.2	1,407	6,442	4,870	5,062	4,510	3,643	1,859	0	0	0
Mean	0	20.0	45.4	20.8	174	196	150	118	6.20	0	0	0
Max.	0	110	273	100	606	467	242	195	40	0	0	0
Min.	0	0	14	7.2	56	49	87	43	0	0	0	0
Ac-ft	0	1,190	2,790	1,280	9,680	12,020	8,950	7,230	369	0	0	0

Calendar year 1960 :

Max 6,600

Min 0

Mean 196

Acre-feet 142,300

Water year 1960-61 :

Max 606

Min 0

Mean 60.1

Acre-feet 43,510

Peak discharge (base, 3,600 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SAN JOAQUIN RIVER BASIN

11-3370. Contra Costa Canal near Oakley, Calif.

Location.--Lat 37°59'45", long 121°42'00", in NE $\frac{1}{4}$ sec.25, T.2 N., R.2 E., at Pumping Plant No. 1, 0.7 mile east of Oakley and 2.6 miles northwest of Knightsen.

Records available.--February 1950 to September 1961.

Gage.--Recording flow meters on pumps. Prior to Jan. 1, 1953, water-stage recorder at site 3.2 miles downstream at datum 121.72 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--11 years, 69.4 cfs (50,240 acre-ft per year).

Extremes.--1950-61: Maximum daily discharge, 210 cfs July 14, 1961; minimum daily, 8.0 cfs Jan. 12, 1952.

Remarks.--Water is diverted from Sacramento-San Joaquin Delta by way of Old River, Rock Slough, and a dredged channel. A series of four pumping plants lifts the water about 115 ft into canal. Water is used for municipal, agricultural, and industrial purposes. The canal is a part of the Central Valley project.

Cooperation.--Records of daily discharge furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	145	61	58	62	51	55	103	128	159	167	149
2	145	140	61	57	57	51	55	102	130	158	174	141
3	140	135	59	58	56	55	58	108	130	160	176	134
4	131	137	58	57	58	54	60	113	132	155	179	136
5	122	115	57	58	62	54	97	118	137	173	176	141
6	118	117	56	58	65	55	100	119	137	169	173	144
7	118	142	55	57	56	55	77	117	138	174	174	141
8	117	130	50	57	53	53	61	118	138	177	174	142
9	111	130	48	60	53	49	62	124	136	174	174	143
10	112	112	49	62	54	50	112	126	141	178	176	142
11	117	114	48	63	55	50	88	124	137	197	174	142
12	123	98	50	62	54	51	77	124	140	207	169	146
13	121	87	49	65	52	52	92	124	149	205	162	144
14	121	85	51	63	53	53	80	124	159	210	167	149
15	118	91	50	63	51	53	81	126	204	207	163	151
16	117	90	50	62	52	48	77	129	199	206	163	144
17	121	84	50	62	52	50	78	131	194	197	160	140
18	118	77	50	62	50	50	75	136	179	203	159	130
19	118	75	49	62	51	49	80	136	172	206	155	138
20	121	75	49	63	51	51	87	128	173	204	152	142
21	125	73	48	67	52	51	86	126	172	206	150	139
22	122	67	54	62	51	52	83	124	165	202	150	*132
23	119	62	57	68	50	52	77	123	160	197	151	132
24	127	54	54	68	51	51	77	131	170	200	155	130
25	129	54	56	60	51	53	83	138	170	198	152	137
26	121	52	58	60	51	54	91	143	171	204	148	140
27	123	53	59	65	51	51	98	136	172	198	147	141
28	127	53	58	63	51	50	103	137	171	200	151	143
29	123	59	59	64	-	54	105	132	167	199	146	139
30	124	57	57	63	-----	56	103	129	165	184	147	131
31	124	-----	59	64	-----	56	-----	138	-----	184	148	-----
Total	3,817	2,763	1,669	1,913	1,505	1,614	2,458	3,887	4,736	5,891	5,012	4,203
Mean	123	92.1	53.8	61.7	53.8	52.1	81.9	125	158	190	162	140
Max.	145	145	61	68	65	56	112	143	204	210	179	151
Min.	111	52	48	57	50	48	55	102	128	155	146	130
Ac-ft	7,570	5,480	3,310	3,790	2,990	3,200	4,880	7,710	9,390	11,680	9,940	8,340
Calendar year 1960 :	Max 199			Min 48			Mean 106			Acres-feet 77,050		
Water year 1960-61 :	Max 210			Min 48			Mean 108			Acres-feet 78,280		

* Discharge measurement made on this day.

SAN JOAQUIN RIVER BASIN

701

11-3375. Marsh Creek near Byron, Calif.

Location--Lat 37°52'25", long 121°43'35", in Los Meganos Grant, on right bank 40 ft downstream from highway bridge on Marsh Creek road and 5.0 miles west of Byron, Contra Costa County.

Drainage area--42.5 sq mi.

Records available--February 1953 to September 1961.

Gage--Water-stage recorder, and concrete control. Datum of gage is 177.87 ft above mean sea level, datum of 1929.

Average discharge--8 years, 7.17 cfs (5,190 acre-ft per year).

Extremes--No flow during the year.

1953-61: Maximum discharge, 3,800 cfs Dec. 23, 1955 (gage height, 12.98 ft), from rating curve extended above 320 cfs on basis of slope-area measurement of peak flow; no flow for several months in each year.

Remarks--No flow since May 6, 1960. Observations of no flow generally made once a month. No storage or diversion. Figures for calendar year 1960 are as follows: maximum daily discharge, 156 cfs; minimum, zero; mean, 1.90 cfs; runoff, 1,380 acre-ft.

SACRAMENTO RIVER BASIN

11-3414. Sacramento River near Mount Shasta, Calif.

Location.--Lat 41°16'00", long 122°18'38", in SE $\frac{1}{4}$ sec.33, T.40 N., R.4 W., 0.1 mile upstream from Stink Creek and 3 miles south of city of Mount Shasta.

Drainage area.--13 $\frac{1}{4}$ sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 2,820 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,380 cfs Feb. 11 (gage height, 6.94 ft); minimum daily, 42 cfs Aug. 25.
1959-61: Maximum discharge, that of Feb. 11, 1961; minimum daily, that of Aug. 25, 1961.

Remarks.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	57	*1,440	133	670	195	395	618	661	108	52	47
2	47	59	604	132	663	195	590	570	832	101	51	45
3	48	61	291	125	562	188	779	531	757	92	51	47
4	47	59	204	*123	426	181	782	495	742	87	50	47
5	54	63	167	123	361	193	630	442	691	89	55	*46
6	143	66	148	117	351	188	558	440	610	87	61	46
7	92	68	140	118	328	177	498	405	533	86	63	44
8	80	65	133	119	*322	190	464	448	487	82	59	44
9	69	*66	131	126	601	*190	476	726	436	78	56	44
10	67	67	131	126	1,700	186	452	979	393	76	51	45
11	64	72	131	125	2,260	211	483	772	407	72	52	44
12	63	102	*130	124	1,030	195	539	612	374	73	50	44
13	60	98	132	121	707	193	469	549	368	86	50	44
14	59	84	131	125	556	330	439	570	373	80	47	44
15	59	78	155	130	752	648	442	631	*365	75	48	45
16	59	83	264	126	549	445	539	*689	337	71	*49	60
17	60	92	412	126	440	390	619	782	306	68	48	66
18	61	119	616	125	362	338	549	900	272	68	48	63
19	59	86	509	124	320	335	439	1,020	241	*63	50	59
20	61	74	328	128	287	306	383	1,020	224	60	52	56
21	61	73	268	128	272	285	407	910	205	57	49	55
22	58	69	234	126	263	318	390	867	185	58	47	55
23	56	85	218	152	246	322	327	779	172	58	46	54
24	56	185	203	154	233	322	297	706	162	60	44	57
25	57	683	194	146	224	295	279	706	150	55	42	55
26	*59	215	183	170	211	293	*292	700	140	52	44	54
27	60	134	176	191	203	279	317	600	128	52	44	*53
28	62	110	165	182	194	251	370	565	123	52	45	54
29	59	97	158	200	-	244	494	541	118	51	48	55
30	59	174	150	302	-----	267	562	540	113	50	44	53
31	59	-----	145	1,260	-----	311	-----	521	-----	50	46	-----
Total	1,945	3,344	8,291	5,507	15,093	8,461	14,260	20,634	10,905	2,197	1,542	1,528
Mean	62.7	111	267	178	539	273	475	666	364	70.9	49.7	50.8
Max	143	683	1,490	1,260	2,260	648	782	1,020	832	108	63	66
Min	47	57	130	117	194	177	279	405	113	50	42	44
Ac-ft	3,860	6,630	16,440	10,920	29,940	16,780	28,280	40,930	21,630	4,360	3,060	3,020
Calendar year 1960:			Max	1,760	Min	43	Mean	196	Acre-feet	142,000		
Water year 1960-61:			Max	2,260	Min	42	Mean	257	Acre-feet	185,800		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

703

11-3420. Sacramento River at Delta, Calif.

Location.--Lat 40°56'20", long 122°24'55", in NW $\frac{1}{4}$ sec.35, T.36 N., R.5 W., on left bank 0.2 mile downstream from Dog Creek, 0.6 mile southeast of Delta, and 2.8 miles south of La Moine.

Drainage area.--427 sq mi.

Records available.--October 1944 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 1,075.00 feet above mean sea level (levels by Bureau of Reclamation).

Average discharge.--17 years, 1,147 cfs (830,400 acre-ft per year).

Extremes.--Maximum discharge during year, 14,100 cfs Feb. 11 (gage height, 12.32 ft); minimum, 170 cfs Oct. 1. 1944-61: Maximum discharge, 37,000 cfs Dec. 22, 1955 (gage height, 19.50 ft), from rating curve extended above 19,000 cfs on basis of slope-area measurement of peak flow; minimum, 141 cfs Sept. 3, 4, 5, 1950.

Remarks.--Records good.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.6	160	7.0	2,560
4.0	285	8.0	4,020
4.5	485	10.0	7,900
5.0	750	12.0	13,100
6.0	1,480		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	209	9,970	690	4,420	1,050	1,970	1,850	1,460	380	236	209
2	175	206	7,190	662	3,670	1,020	2,280	*1,700	1,710	372	232	206
3	*175	206	3,120	635	3,260	980	2,660	1,610	1,580	360	229	209
4	180	203	1,870	613	2,510	948	2,740	1,530	1,540	352	232	206
5	185	206	1,350	591	2,070	1,070	2,320	1,430	1,450	*352	246	203
6	578	209	1,070	575	1,820	1,000	2,080	1,420	1,340	352	254	200
7	424	218	923	570	1,630	928	1,910	1,300	1,210	340	254	197
8	299	218	828	565	1,780	1,040	1,770	1,280	1,140	332	246	*197
9	257	215	750	640	4,100	1,130	1,750	1,850	1,060	320	246	194
10	236	215	702	602	7,730	1,270	1,680	2,850	987	316	232	194
11	232	243	657	*565	1,070	1,720	1,660	2,380	994	302	222	194
12	226	372	613	555	5,610	1,640	1,770	1,940	954	296	236	194
13	226	521	596	535	4,100	1,410	1,610	1,730	902	316	226	191
14	222	396	580	521	3,600	1,940	1,520	1,690	883	313	222	191
15	218	340	640	512	4,940	5,740	1,470	1,780	870	299	226	197
16	215	313	2,020	498	4,020	3,990	1,620	1,830	822	288	226	226
17	215	*356	4,160	490	3,180	3,750	1,830	1,940	768	282	222	274
18	215	613	5,140	476	2,490	3,030	1,700	2,110	708	271	215	250
19	215	400	4,170	467	2,200	2,660	1,440	2,280	657	268	215	236
20	215	328	2,820	462	1,950	2,360	1,310	2,270	613	264	229	226
21	212	320	1,980	458	1,770	2,120	1,530	2,010	*570	257	222	222
22	209	299	1,620	458	1,640	2,050	1,610	1,960	545	254	218	218
23	209	392	1,400	526	1,510	1,950	1,350	1,860	516	250	212	218
24	209	1,730	1,240	521	1,400	2,110	1,240	1,680	494	250	209	215
25	209	4,870	1,110	508	1,310	2,010	1,180	1,660	476	250	*206	215
26	222	1,730	1,010	565	1,220	2,300	1,180	1,720	449	246	209	212
27	215	974	935	720	*1,160	2,260	1,220	1,490	432	240	215	209
28	215	720	864	662	1,090	2,020	1,300	1,420	420	240	215	209
29	215	602	816	1,040	-	1,850	1,560	1,360	412	240	222	206
30	212	1,040	768	*2,360	-	*1,820	1,750	1,340	400	232	215	203
31	212	-	732	8,390	-	1,870	-	1,280	-	236	209	-
Total	7,222	18,664	61,644	27,432	86,880	61,036	51,010	54,550	26,362	9,070	6,998	6,321
Mean	233	622	1,989	885	3,103	1,969	1,700	1,760	879	293	226	211
Max.	578	4,870	9,970	8,390	10,700	5,740	2,740	2,850	1,710	380	254	274
Min.	175	203	580	458	1,090	928	1,180	1,280	400	232	206	191
Ac-ft	14,320	37,020	122,300	54,410	172,300	121,100	101,200	108,200	52,290	17,990	13,880	12,540

Calendar year 1960 : Max 11,800 Min 167 Mean 1,031 Acre-feet 743,800
 Water year 1960-61 : Max 10,700 Min 175 Mean 1,143 Acre-feet 827,600

Peak discharge (base, 8,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	8a.m.	10.15	8,240	1-31	9a.m.	11.41	11,400
12-1	9a.m.	12.18	13,600	2-11	3a.m.	12.32	14,100

SACRAMENTO RIVER BASIN

11-3435. North Fork Pit River near Alturas, Calif.

Location.--Lat 41°30', long 120°29', in NE¼ sec.8, T.42 N., R.13 E., on right bank 1.5 miles downstream from Parker Creek, 3 miles northeast of Alturas, and 4 miles upstream from mouth.

Drainage area.--209 sq mi, excluding Goose Lake basin.

Records available.--May 1929 to November 1932, October 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is about 4,500 ft (from U. S. Forest Service Map).

Average discharge.--7 years, 38.8 cfs (28,090 acre-ft per year).

Extremes.--Maximum discharge during year, 312 cfs Mar. 26 (gage height, 2.82 ft); minimum, 0.1 cfs Sept. 23, 24.

1929-32, 1957-61: Maximum discharge, 2,140 cfs Feb. 24, 1958 (gage height, 9.85 ft), from rating curve extended above 240 cfs; no flow Apr. 29, 30, 1931, June 6, 1959.

Remarks.--Records good. Flow regulated by many small reservoirs (total capacity now, about 2,480 acre-ft). Diversions of up to 6,100 acre-ft to Dorris Reservoir (capacity, 11,100 acre-ft). Diversions for irrigation of about 7,100 acres above and below gage.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0.2	1.5	34
1.1	2.1	1.8	76
1.2	7.0	2.2	152
1.3	14	2.6	248

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	1.8	4.9	1.1	2.4	2.4	5.9	2.0	5.4	0.5	1.0	0.6
2	.6	1.8	5.0	1.0	4.6	2.6	8.8	2.0	7.0	.3	1.0	.6
3	.6	2.1	3.6	1.0	7.1	2.3	10.1	2.0	5.3	.4	1.0	.5
4	.6	*1.8	2.8	1.2	3.3	2.4	11.8	2.0	3.9	.4	1.0	.4
5	.6	1.5	1.8	1.3	2.5	2.6	4.4	2.1	2.4	.4	.8	.4
6	1.1	1.8	1.2	1.3	2.3	2.6	4.9	3.0	1.8	.4	1.0	.4
7	*3.7	2.5	1.4	1.4	2.4	2.4	4.9	2.6	1.0	.4	.8	.4
8	1.8	2.9	1.4	1.7	2.6	2.7	4.4	1.8	2.1	.5	.8	.4
9	1.2	2.9	1.5	1.9	8.3	2.6	4.1	1.7	2.9	.5	.6	.4
10	1.2	2.9	1.5	1.9	6.2	2.6	3.5	1.7	4.2	.5	.6	.5
11	1.2	3.3	1.6	1.6	4.4	3.2	3.1	2.6	5.8	.6	.8	.5
12	1.0	9.8	1.5	1.3	5.6	3.2	5.7	3.0	6.4	.5	.8	.5
13	1.5	8.4	1.6	1.1	4.9	3.6	*3.2	1.8	6.4	.5	.8	.5
14	1.5	8.4	1.8	1.3	*8.1	3.5	2.7	1.6	6.4	.6	.8	.5
15	1.8	8.4	1.5	1.5	7.3	3.1	2.3	1.9	5.8	.8	.6	.6
16	2.1	1.1	1.7	1.3	4.7	3.1	2.1	1.8	3.7	.8	.6	.6
17	2.5	2.0	3.6	1.4	3.4	3.0	2.3	*1.5	3.3	.8	.8	.8
18	2.5	1.8	1.8	1.3	2.7	3.0	2.5	4.7	2.9	.8	.8	.8
19	1.5	1.9	4.7	1.1	2.8	2.8	2.7	1.0	2.9	.8	.8	.6
20	1.0	1.3	3.1	1.1	2.6	3.1	2.7	2.1	2.9	.8	.8	.4
21	1.0	6.4	2.5	1.3	2.7	3.1	2.6	5.2	1.0	.5	.8	.3
22	1.2	3.7	2.1	1.3	3.0	2.6	2.7	9.8	.8	.5	.8	.3
23	1.5	3.7	1.8	1.5	2.4	3.5	2.7	6.4	.8	.5	.8	.3
24	1.5	2.9	1.8	1.6	2.7	7.9	2.8	4.7	1.0	.6	.6	.2
25	1.5	5.2	1.8	1.5	2.6	2.03	2.6	4.2	1.2	*.6	.8	.3
26	1.5	1.5	1.9	1.4	2.5	2.39	2.1	3.3	1.0	.6	.8	.3
27	1.5	1.3	1.5	1.3	2.5	1.88	1.9	2.9	.6	.8	.8	.3
28	1.8	8.4	*1.1	1.2	2.5	8.4	2.0	3.3	.6	.8	.6	.3
29	2.1	1.3	1.0	1.7	—	5.9	2.0	3.3	.6	.8	.6	.3
30	2.1	3.0	1.3	1.8	—	6.0	2.0	1.4	.6	1.0	.6	.3
31	2.5	—	1.2	2.0	—	5.6	—	5.6	—	1.0	.6	—
Total	56.7	242.6	76.0	43.4	109.1	162.8	1.155	471.9	331.9	19.0	24.0	13.3
Mean	1.83	8.09	24.5	14.0	39.0	52.5	38.5	15.2	11.1	0.61	0.77	0.44
Max.	11	30	118	20	83	239	118	56	70	1.0	1.0	0.8
Min.	0.6	1.5	1.0	1.0	2.3	2.3	1.9	1.0	0.6	0.3	0.6	0.2
Ac-ft	112	481	1,510	861	2,160	3,230	2,290	936	658	38	48	26
Calendar year 1960 : Max 1,240 Min 0.3 Mean 29.0 Acres-feet 21,000												
Water year 1960-61 : Max 239 Min 0.2 Mean 17.1 Acres-feet 12,350												

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

705

11-3455. South Fork Pit River near Likely, Calif.

Location.--Lat 41°14', long 120°25', in NE 1/4 sec. 11, T.39 N., R.13 E., on left bank 1.3 miles downstream from West Valley Creek and 3.5 miles east of Likely.

Drainage area.--248 sq mi.

Records available.--October 1928 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 4,508 ft above mean sea level (levels by Topographic Division). Prior to Oct. 1, 1931, at site 1,000 ft downstream at different datum.

Average discharge.--33 years, 71.8 cfs (51,980 acre-ft per year).

Extremes.--Maximum discharge during year, 189 cfs July 24 (gage height, 3.07 ft); minimum daily, 1.5 cfs Feb. 25-27.

1928-61: Maximum discharge, 1,060 cfs Apr. 27, 1932 (gage height, 5.55 ft), from rating curve extended above 600 cfs; minimum, 0.2 cfs Feb. 3, 1941.

Remarks.--Records good except those for period of no gage-height record, which are fair, and those for periods of ice effect, which are poor. Flow regulated by West Valley Creek Reservoir beginning in May 1937 (total capacity, 17,700 acre-ft). Diversions for irrigation of about 3,800 acres above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.3	1.2	1.9	21
1.4	2.4	2.2	45
1.5	4.2	2.6	93
1.6	6.6	3.1	187
1.7	10		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	22	16	2	26	3.5	10	85	95	60	152	14
2	34	22	17	2	30	5	13	83	70	60	152	14
3	35	22	14	2	32	4.5	23	83	85	60	148	14
4	37	*20	13	2	26	5	44	93	90	60	142	15
5	38	22	11	2	24	5.5	47	102	95	60	106	15
6	*40	25	10	3	24	5	45	135	85	60	82	14
7	40	33	10	4	29	4.5	44	131	80	55	80	14
8	41	30	11	6	27	5	42	113	75	55	80	17
9	40	26	12	10	20	5.4	44	115	70	55	76	22
10	46	26	13	8	8.3	5.9	45	120	60	64	53	21
11	55	33	14	6	6.6	8.0	41	106	60	*63	48	20
12	58	34	15	5	4.2	7.6	54	82	65	64	41	22
13	58	28	16	6	3.8	9.7	*45	74	55	65	38	22
14	57	28	18	7	*7.6	20	37	73	50	76	33	14
15	57	27	20	6.5	14	20	41	78	50	86	31	9.7
16	40	23	23	6	10	20	56	77	45	85	31	9.7
17	26	14	27	5.5	5.9	20	79	*78	40	83	30	10
18	26	23	27	5	6.4	19	75	118	40	82	30	12
19	30	14	26	4.5	3.5	20	60	146	35	80	30	13
20	29	12	20	4.5	3	20	49	145	60	80	24	12
21	27	10	15	5	3.5	20	46	150	75	79	16	12
22	22	12	10	7	3	21	41	150	70	79	15	11
23	22	17	6	9	2.5	24	40	150	70	101	14	11
24	22	18	5	8	2	19	41	110	65	187	13	12
25	22	16	4	7	1.5	19	34	90	60	*187	13	14
26	23	14	3.5	7.5	1.5	19	40	90	50	185	14	26
27	23	13	3	8	1.5	16	65	80	40	183	14	35
28	24	11	*2.5	5	2	16	68	95	55	158	14	19
29	23	12	2	10		12	72	110	65	127	14	22
30	22	14	2	15		8.0	77	125	65	154	14	25
31	22		2	20		12		105		152	14	
Total	1,073	621	388	198.5	328.8	399.6	1,418	3,292	1,920	2,945	1,562	4,914
Mean	34.6	20.7	12.5	6.40	11.7	12.9	47.3	106	64.0	95.0	50.4	16.4
Max.	58	34	27	20	32	24	79	150	95	187	152	35
Min.	22	10	2.5	2	1.5	3.5	10	73	35	55	13	9.7
Ac-ft	2,130	1,230	770	394	652	793	2,810	6,530	3,810	5,840	3,100	975
Calendar year 1960 :				Max 212	Min 2.2	Mean 50.8				Acre-feet 36,920		
Water year 1960-61 :				Max 187	Min 1.5	Mean 40.1				Acre-feet 29,030		

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 27-29, Dec. 4-16, Dec. 20 to Jan. 31, Feb. 20 to Mar. 8. No gage-height record May 16, May 20 to July 9.

SACRAMENTO RIVER BASIN

11-3485. Pit River near Canby, Calif.

Location.--Lat 41°24', long 120°55', in SW $\frac{1}{4}$ sec.10, T.41 N., R.9 E., on right bank at lower end of Warm Spring Valley, 4 miles southwest of Canby.

Drainage area.--1,430 sq mi, approximately, excluding Goose Lake Basin.

Records available.--January 1904 to December 1905, May 1929 to September 1961 (1929-31 incomplete).

Gage.--Water-stage recorder. Altitude of gage is 4,300 ft (from topographic map). January 1904 to December 1905 staff gage and May 6, 1929, to Sept. 30, 1931, water-stage recorder, at site 100 ft upstream at different datum.

Average discharge.--31 years (1905, 1931-61), 224 cfs (162,200 acre-ft per year).

Extremes.--Maximum discharge during year, 570 cfs June 3 (gage height, 3.70 ft); minimum, 0.9 cfs Aug. 3.

1904-5, 1929-61: Maximum discharge observed, 13,000 cfs Mar. 8, 1904 (gage height, 15.0 ft, datum then in use); minimum, 0.1 cfs Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

Remarks.--Records good except those for periods of ice effect, which are poor. Flow regulated by many small reservoirs (total capacity now, about 141,000 acre-ft). Diversions for irrigation of about 39,000 acres above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-5

Oct. 6 to Sept. 30

2.3 15
2.4 25
2.5 40

1.9 0.7
2.0 1.3
2.1 2.8
2.2 7.0
2.3 16

2.4 30
2.5 49
2.7 103
3.0 205
3.5 450

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	38	116	50	135	66	113	12	11	27	1.1	16
2	23	40	149	47	152	71	132	4.5	2.6	29	2.0	16
3	26	*40	130	50	221	73	122	2.0	309	63	1.1	15
4	*16	63	90	47	268	71	125	4.9	305	103	3.2	15
5	15	40	50	45	156	63	125	11	201	135	2.0	13
6	19	40	47	43	116	63	106	22	177	113	2.8	12
7	19	43	45	50	97	66	63	36	174	56	61	13
8	19	51	47	63	94	61	68	59	109	32	79	17
9	27	76	49	71	91	61	73	113	71	23	56	54
10	26	76	50	66	138	59	68	191	45	16	61	43
11	27	71	35	62	191	51	45	118	38	30	49	29
12	32	68	40	58	188	61	45	24	34	38	32	34
13	43	79	46	56	188	76	*47	40	38	34	26	29
14	54	91	52	64	180	66	26	29	49	54	22	27
15	47	85	50	60	254	61	34	16	40	45	19	34
16	66	94	70	54	225	51	38	*12	20	47	14	26
17	59	88	109	54	174	66	36	11	41	43	15	26
18	63	122	94	50	125	63	27	13	45	43	19	29
19	54	116	191	46	103	61	24	45	54	49	17	20
20	47	103	152	45	91	66	22	45	38	49	17	19
21	45	88	103	47	82	63	13	41	30	36	17	17
22	38	68	85	50	76	63	19	34	24	19	16	16
23	38	56	85	56	79	66	19	27	27	12	15	17
24	38	47	79	54	79	82	17	24	22	*9.7	14	17
25	38	56	71	54	71	152	14	16	19	5.7	6.6	15
26	36	51	82	51	66	325	11	13	15	4.5	15	14
27	32	45	76	43	68	422	14	12	22	3.2	19	13
28	27	35	*63	41	71	356	13	15	19	3.6	24	12
29	30	36	60	38	—	198	13	15	17	1.0	22	12
30	30	40	56	34	—	149	12	15	22	1.0	19	13
31	34	—	54	61	—	132	—	15	—	1.0	16	—
Total	1,092	1,946	2,426	1,610	3,779	3,284	1,484	1,035.4	2,018.6	1,125.7	682.8	633
Mean	35.2	64.9	78.3	51.9	135	106	49.5	33.4	67.3	36.3	22.0	21.1
Max.	66	122	191	71	268	422	132	191	309	135	79	54
Min.	15	35	35	34	66	51	11	2.0	2.6	1.0	1.1	12
Ac-ft	2,170	3,860	4,810	3,190	7,500	6,510	2,940	2,050	4,000	2,230	1,350	1,260

Calendar year 1960 :

Max 2,380

Min 4.0

Mean 123

Acre-feet 89,320

Water year 1960-61 :

Max 422

Min 1.0

Mean 57.9

Acre-feet 41,870

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 27-30, Dec. 3-16, Dec. 29 to Jan. 7, Jan. 10-22.

SACRAMENTO RIVER BASIN

707

11-3490. Pit River near Lookout, Calif.

Location.--Lat 41°19'25", long 121°07'35", in NE¼ sec.11, T.40 N., R.7 E., on right bank 0.5 mile downstream from unnamed tributary and 8½ miles north of Lookout.

Drainage area.--1,621 sq mi, excluding Goose Lake basin.

Records available.--January 1929 to September 1931, August 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,160 ft (from topographic map). January 1929 to September 1931, water-stage recorder at site approximately 2½ miles downstream at different datum.

Extremes.--Maximum discharge during year, 722 cfs June 1 (gage height, 8.55 ft); minimum, 1.2 cfs Aug. 2, 3.
1929-31, 1958-61: Maximum discharge, 3,200 cfs Feb. 8, 1960 (gage height, 14.58 ft); no flow Aug. 29, 1931.

Remarks.--Records good except those for period of no gage-height record, which are fair, and those for periods of ice effect, which are poor. Flow regulated by many small reservoirs. See Remarks for station near Canby. Diversions for irrigation of about 41,000 acres above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 27

Mar. 28 to Sept. 30

4.8	20	4.4	1.0	4.8	16
5.0	33	4.5	2.5	5.0	32
5.5	79	4.6	5.0	5.2	49
6.0	145	4.7	9.0	5.5	79
7.0	340				
8.5	710				

Note.--Same as preceding table above 5.5 ft.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	36	245	46	220	93	184	21	219	23	1.8	23
2	32	41	303	48	230	90	181	20	148	31	1.3	20
3	*30	*43	190	50	350	95	176	18	139	41	1.3	20
4	37	45	130	45	371	92	168	8.2	436	91	1.4	20
5	24	56	80	46	240	93	156	8.6	345	138	2.2	20
6	23	42	56	48	163	86	162	20	252	203	3.5	19
7	22	45	50	50	134	85	107	38	276	119	4.8	15
8	24	47	48	60	120	86	92	49	203	60	9.8	12
9	22	54	46	70	189	90	93	74	124	40	9.2	16
10	30	81	45	74	234	101	92	a160	79	28	6.6	72
11	29	76	45	76	307	138	83	a230	59	20	7.9	54
12	32	70	47	74	354	124	64	a91	51	32	6.9	44
13	38	77	49	70	*301	124	*69	a36	44	42	4.0	41
14	46	82	54	74	369	130	61	a51	52	38	3.4	37
15	56	78	58	70	550	123	46	a40	60	55	3.0	34
16	52	87	64	66	498	110	51	a33	46	49	2.8	46
17	64	92	150	68	318	106	54	*a22	28	52	2.2	37
18	60	96	196	58	214	144	49	19	48	47	2.0	38
19	60	124	232	56	174	113	43	20	56	48	2.6	37
20	54	106	230	52	154	126	39	58	62	55	2.5	28
21	49	98	156	54	144	116	37	46	42	53	2.4	26
22	47	80	111	56	130	107	31	45	35	42	2.3	24
23	40	66	97	66	112	115	37	37	28	25	2.2	23
24	40	57	95	59	115	158	36	33	32	17	1.9	23
25	40	59	86	60	110	321	32	30	24	*13	2.2	23
26	41	74	84	61	96	438	28	25	21	9.0	1.2	20
27	39	54	*83	55	92	608	20	19	18	6.2	1.4	18
28	35	35	64	50	96	565	23	18	26	4.8	2.7	17
29	31	45	52	50	—	400	23	20	25	4.0	3.9	16
30	33	60	49	50	—	270	22	25	20	4.8	3.2	15
31	32	—	48	258	—	210	—	26	—	3.0	2.4	—
Total	1,193	2,006	3,243	2,020	6,385	5,457	2,259	1,340.8	2,998	1,395.8	903.3	838
Mean	38.5	66.9	105	65.2	228	176	75.3	43.3	99.9	45.0	29.1	27.9
Max.	64	124	303	258	550	608	184	230	436	203	9.8	72
Min.	22	35	45	45	92	85	20	8.2	18	3.0	1.3	12
Ac-ft	2,370	3,980	6,430	4,010	12,660	10,820	4,480	2,660	5,950	2,770	1,190	1,660

Calendar year 1960:

Max 2,700

Min 9.8

Mean 169

Acre-feet 122,800

Water year 1960-61:

Max 608

Min 1.3

Mean 82.3

Acre-feet 59,580

* Discharge measurement made on this day.

a No gage-height record.

Note.--Stage-discharge relation affected by ice Nov. 14, 15, 27-30, Dec. 4-16, Dec. 28 to Jan. 23.

SACRAMENTO RIVER BASIN

11-3505. Ash Creek at Adin, Calif.

Location.--41°12', long 120°57', in SW $\frac{1}{4}$ sec. 21, T.39 N., R.9 E., on left bank 300 ft upstream from highway bridge at Adin and 0.4 mile upstream from Butte Creek.

Drainage area.--249 sq mi.

Records available.--March 1904 to December 1905, October 1928 to November 1932, October 1957 to September 1961. Record of daily discharge for Oct. 19-31, 1928 is in error and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 4,190 ft (estimated on basis of bench mark 300 ft downstream). Prior to Sept. 12, 1957, recorder or staff gage at sites within 1 mile of present site, at different datums.

Average discharge.--9 years (1904-5, 1928-32, 1957-61), 53.3 cfs (38,590 acre-ft per year).

Extremes.--Maximum discharge during year, 466 cfs Dec. 1 (gage height, 7.57 ft); minimum, 1.2 cfs Aug. 16.

1904-5, 1928-32, 1957-61: Maximum discharge, 1,690 cfs Feb. 24, 1958 (gage height, 12.67 ft), from rating curve extended above 600 cfs; minimum, that of Aug. 16, 1961.

Remarks.--Small diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	23	200	26	60	41	81	22	36	8.9	26	8.2
2	20	23	99	28	73	40	77	27	29	10	23	11
3	19	26	57	29	84	38	75	26	22	11	23	11
4	18	26	42	29	48	39	72	26	21	12	24	12
5	22	25	33	29	38	44	68	28	16	8.6	22	12
6	22	34	28	31	36	46	64	41	14	7.4	24	*14
7	25	48	29	30	36	47	58	47	15	9.4	27	14
8	25	30	* 30	31	37	48	52	39	14	9.8	28	14
9	23	28	30	34	102	54	55	*29	14	10	27	14
10	24	29	30	34	76	62	54	26	13	11	*26	16
11	26	*33	30	* 31	84	62	*53	37	14	11	24	17
12	26	35	29	31	122	52	*64	43	16	*12	23	16
13	26	34	31	30	102	*50	49	37	15	15	24	17
14	24	36	31	29	* 224	53	43	32	*14	15	24	20
15	24	40	32	30	* 215	56	49	29	13	15	22	19
16	23	37	33	29	137	53	52	22	13	15	18	16
17	24	34	49	28	92	54	54	19	12	15	13	15
18	* 22	45	62	26	73	53	50	19	11	18	14	19
19	20	34	48	26	80	50	45	15	10	25	12	20
20	20	30	39	26	91	64	41	12	10	26	7.4	22
21	19	29	36	25	88	54	43	15	8.9	26	10	22
22	20	27	35	26	76	52	43	21	7.4	25	11	21
23	21	27	33	26	58	67	46	16	7.5	24	11	20
24	21	28	32	26	56	108	41	15	8.0	25	*12	18
25	22	32	34	25	55	163	36	16	9.2	23	14	21
26	25	37	34	25	47	154	38	15	11	22	12	21
27	26	37	33	27	45	159	26	16	10	24	12	21
28	25	35	31	24	42	124	26	9.6	6.9	25	13	20
29	25	35	30	25	-	113	24	11	7.5	26	12	21
30	24	56	31	27	-----	98	21	28	7.6	25	11	21
31	24	-----	31	85	-----	89	-----	41	-----	25	6.5	-----
Total	705	993	1322	928	2277	2187	1500	779.6	406.0	535.1	555.9	513.2
Mean	22.7	33.1	42.6	29.9	81.3	70.5	50.0	25.1	13.5	17.3	17.9	17.1
Max.	26	56	200	85	224	163	81	47	36	26	28	22
Min.	18	23	28	24	36	38	21	9.6	6.9	7.4	6.5	8.2
Ac-ft	1,400	1,970	2,620	1,840	4,520	4,340	2,980	1,550	805	1,060	1,100	1,020
Calendar year 1960:			Max	1,040	Min	4.2	Mean	52.3			Acre-feet	38,000
Water year 1960-61:			Max	224	Min	6.5	Mean	34.8			Acre-feet	25,210

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

709

11-3520. Pit River near Bieber, Calif.

Location.--Lat 41°00'55", long 121°09'13" (revised), in NE 1/4 sec. 27, T.37 N., R.7 E., on right bank 2.2 miles upstream from Spring Gulch and 7.4 miles south of Bieber.

Drainage area.--2,970 sq mi, approximately, excluding Goose Lake basin.

Records available.--January 1904 to September 1908, December 1913 to August 1914, September 1921 to September 1926, November 1928 to September 1931, October 1951 to September 1961. Yearly figures only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 4,080.4 ft (revised) above mean sea level (levels by Topographic Division). Prior to November 1928, staff gage at same site and datum.

Average discharge.--23 years (1903-8, 1921-26, 1928-31, 1951-61), 504 cfs (364,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,250 cfs Feb. 16 (gage height, 5.28 ft); no flow many days in July, August, September. 1904-8, 1913-14, 1921-26, 1928-31, 1951-61: Maximum discharge, 33,800 cfs Mar. 19, 1907 (gage height, 16.7 ft), from rating curve extended above 15,000 cfs; no flow at times in 1923-24, 1926, 1929-31, 1955, 1961.

Remarks.--Records good except those for periods of ice effect and those below 3 cfs, which are poor. Flow regulated by many small reservoirs (total capacity now, about 201,000 acre-ft). Diversions for irrigation of about 33,000 acres between stations near Canby and near Bieber.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 16				Feb. 17 to Sept. 30			
1.8	2.9	2.9	92	1.4	0	2.0	7.5
1.9	5.2	3.2	152	1.5	.1	2.2	17
2.0	8.6	3.5	236	1.6	.2	2.5	38
2.1	14	4.0	425	1.7	.5	2.8	74
2.3	28	4.5	685	1.8	1.5	3.2	152
2.6	55	5.5	1,450	1.9	4.0		

Note.--Same as preceding table above 3.2 ft.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	3.0	180	82	416	173	381	6.7	8.7	1.7	0	0.1
2	1.4	3.0	470	84	384	168	317	8.3	8.7	1.3	0	.1
3	*1.2	*3.1	540	86	461	155	302	7.1	9.6	3.1	0	.1
4	7.8	28	350	84	480	160	285	3.1	8.7	1.3	0	.1
5	6.4	26	220	80	465	165	265	3.4	8.3	.6	0	0
6	6.4	30	130	86	364	178	246	2.6	7.1	.4	0	0
7	5.8	41	100	90	265	175	242	3.1	3.1	.3	0	0
8	5.8	106	90	99	224	170	195	6.7	4.3	.2	0	0
9	5.0	79	80	129	252	181	162	7.1	7.5	.1	0	0
10	3.7	57	78	145	545	198	158	9.6	21	.2	0	0
11	6.7	59	80	130	500	206	145	22	49	.3	0	0
12	16	78	90	120	789	242	*68	33	125	.2	0	0
13	26	84	96	115	*815	239	63	21	147	.2	.2	0
14	14	89	100	120	770	227	74	32	*84	.1	6.3	0
15	11	92	105	110	857	230	58	27	44	11	2.1	0
16	16	110	119	96	1210	215	43	*27	26	2.8	.4	0
17	45	105	168	86	1060	206	42	21	11	.6	.2	0
18	26	115	398	78	655	203	36	32	34	.2	.1	0
19	20	127	380	80	470	233	32	26	28	.2	.1	0
20	20	138	364	84	386	236	14	16	7.1	.1	.1	0
21	41	131	317	86	347	242	8.3	20	2.1	.1	.1	0
22	55	115	242	88	332	221	14	52	.6	.1	.1	0
23	47	107	184	94	282	215	17	45	.5	0	0	0
24	38	99	155	106	246	227	26	26	.4	*0	0	0
25	37	97	145	102	230	347	26	16	.3	0	0	0
26	38	109	136	99	212	540	12	12	.4	0	0	0
27	37	90	*125	104	189	705	10	9.6	.7	0	0	0
28	34	70	115	100	175	892	10	8.7	.3	0	0	0
29	31	80	100	95	—	822	8.3	6.7	.3	0	0	0
30	40	107	90	106	637	637	6.7	7.9	1.1	0	0	0
31	35	—	84	134	465	465	—	8.7	—	0	0.1	—
Total	724.6	246.0	583.1	3,098	13,381	9,274	3,266.3	527.3	648.8	25.1	9.8	0.4
Mean	23.4	82.0	188	99.9	478	299	109	17.0	21.6	0.81	0.32	0.01
Max.	55	138	540	145	1,210	892	381	52	147	11	6.3	0.1
Min.	3.7	26	78	78	175	155	6.7	2.6	0.3	0	0	0
Ac-ft	1,440	4,880	11,570	6,140	26,540	18,390	6,480	1,050	1,390	50	19	0.8

Calendar year 1960:

Max 3,650

Min 0.4

Mean 235

Acre-feet 170,700

Water year 1960-61:

Max 1,210

Min 0

Mean 108

Acre-feet 77,850

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 15-18, 27-29, Dec. 1, 2, 4-15, Dec. 28 to Jan. 7, Jan. 11-22.

SACRAMENTO RIVER BASIN

11-3525. Horse Creek at Little Valley near Pittville, Calif.

Location.--Lat 40°53'56", long 121°10'23", in NE¼ sec.15, T.35 N., R.7 E., on left bank 100 ft downstream from railroad bridge, 0.5 mile northeast of Little Valley, and 13 miles southeast of Pittville.

Drainage area.--203 sq mi.

Records available.--December 1928 to September 1931, October 1959 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,150 ft (from topographic map). Prior to 1959 at datum 0.1 ft lower.

Extremes.--Maximum discharge during year, 70 cfs Dec. 1 (gage height, 2.46 ft), from rating curve extended above 30 cfs; minimum, 2.6 cfs July 4.

1928-31, 1959-61: Maximum discharge, 513 cfs Feb. 8, 1960 (gage height, 3.51 ft), from rating curve extended above 30 cfs; minimum, that of July 4, 1961.

Remarks.--Divisions for irrigation above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	7.7	37	9.4	14	11	11	8.5	14	3.8	4.0	4.6
2	5.6	8.2	56	8.8	16	10	11	7.4	15	3.6	4.0	4.8
3	5.6	9.2	33	9.3	19	11	10	6.4	16	3.5	4.2	4.9
4	6.0	9.0	21	9.5	18	11	9.6	7.7	14	3.4	4.2	4.7
5	5.4	8.7	14	9.8	16	11	9.4	8.2	13	3.7	4.1	4.4
6	5.7	8.7	11	9.3	14	12	8.8	9.0	9.2	3.8	4.2	4.5
7	5.6	9.5	9.6	9.3	13	11	7.5	10	10	4.1	4.5	4.7
8	6.1	9.5	9.1	9.0	13	11	4.8	9.2	11	4.1	4.8	4.6
9	5.6	9.0	9.0	9.4	19	12	5.5	9.3	9.0	4.2	4.7	4.3
10	8.9	9.2	8.8	9.8	25	11	5.8	9.7	8.4	4.5	4.3	4.1
11	8.0	10	8.8	9.8	40	11	6.1	11	7.9	5.0	4.1	4.1
12	9.8	11	9.5	9.6	45	11	8.1	12	7.5	5.5	3.7	4.2
13	9.7	11	10	9.4	33	11	8.9	11	6.3	5.5	3.5	4.5
14	7.2	12	11	9.6	25	11	*7.6	10	5.2	5.2	3.5	4.5
15	7.4	*11	11	9.6	*30	11	7.9	8.5	4.5	5.1	3.5	4.5
16	6.9	11	10	9.3	42	10	7.2	8.8	4.5	5.2	3.4	4.5
17	6.9	11	11	9.6	32	10	*6.7	*8.6	4.1	5.1	3.4	5.1
18	*7.6	11	10	9.5	23	9.6	7.1	7.9	3.9	5.0	3.7	6.1
19	7.7	10	10	*9.4	19	9.5	8.0	7.7	*4.1	4.9	3.9	5.6
20	7.6	10	11	9.6	17	10	7.7	7.1	4.8	5.1	3.8	5.0
21	8.1	9.8	11	9.2	15	9.6	7.7	7.5	4.7	4.3	3.9	5.2
22	7.7	9.6	10	9.2	14	9.4	8.9	7.2	4.5	3.8	3.8	5.3
23	7.4	9.8	9.8	9.6	13	10	9.8	7.0	4.7	3.9	3.9	5.7
24	7.7	9.6	9.4	10	12	11	10	6.4	4.8	*3.6	3.9	5.5
25	*7.9	10	9.2	10	12	14	11	6.7	4.5	3.8	3.9	5.6
26	8.1	13	9.3	11	12	16	11	7.4	4.6	3.9	3.7	6.1
27	7.6	11	9.4	11	11	18	9.0	7.7	4.5	4.0	3.7	6.2
28	7.4	11	9.5	11	11	18	8.7	6.5	4.5	4.1	4.2	6.1
29	7.7	12	9.1	11	-	14	8.1	6.9	4.7	4.1	4.4	6.2
30	7.5	13	9.2	11	-	13	8.1	11	4.3	3.9	4.2	6.7
31	7.7	-	9.2	13	-	12	-	12	-	4.0	4.5	-
Total	223.9	305.5	415.9	305.0	573	360.1	251.0	264.3	218.2	133.7	123.6	152.3
Mean	7.22	10.2	13.4	9.84	20.5	11.6	8.37	8.53	7.27	4.31	3.99	5.08
Max.	9.7	13	56	13	45	18	11	12	16	5.5	4.8	6.7
Min.	5.4	7.7	8.8	8.8	11	9.4	4.8	6.4	3.9	3.4	3.4	4.1
Ac-ft	444	606	824	605	1,140	714	498	524	433	265	245	302
Calendar year 1960:			Max	347	Min	4.3	Mean	12.4	Acre-feet	9,010		
Water year 1960-61:			Max	56	Min	3.4	Mean	9.11	Acre-feet	6,600		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

711

11-3537. Fall River near Dana, Calif.

Location.--Lat 41°06'20", long 121°33'00", in NE¹/₄ sec.30, T.38 N., R.4 E., on left bank 0.7 mile southeast of Dana and 1 mile downstream from large springs below Bear Creek.

Drainage area.--More than 140 sq mi; hydrologic drainage boundaries uncertain owing to ground-water exchange.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,340 ft (from topographic map).

Extremes.--Maximum discharge during year, 669 cfs Feb. 11 (gage height, 6.75 ft); minimum daily, 365 cfs July 30, Aug. 2-4, 10, 11, 13, 1958-61: Maximum discharge, 1,020 cfs Mar. 8, 1960 (gage height, 7.20 ft); minimum daily, that of July 30, Aug. 2-4, 10, 11, 13, 1961.

Remarks.--Practically entire flow of stream originates in large spring about 1 mile upstream. Some pumping from stream in vicinity of gage for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	378	399	427	396	571	480	502	527	484	382	366	376
2	377	396	450	393	535	480	510	524	496	382	365	377
3	377	400	430	395	546	479	523	523	484	381	365	378
4	379	400	419	394	522	475	539	520	472	381	365	379
5	379	401	410	394	510	478	548	518	465	379	367	379
6	384	404	403	395	504	479	548	523	458	379	367	380
7	383	406	403	397	506	472	547	530	454	379	367	382
8	384	405	405	398	503	473	548	523	448	378	368	384
9	381	404	403	399	524	479	550	516	442	378	367	385
10	384	405	401	402	575	475	551	528	439	377	365	386
11	384	408	401	400	621	479	552	553	434	378	365	* 388
12	385	412	400	399	606	476	561	555	435	379	366	387
13	385	417	398	399	571	470	568	540	426	379	365	386
14	385	416	401	400	559	476	* 565	532	423	379	366	385
15	384	413	403	400	586	494	544	529	421	377	367	385
16	384	* 415	399	401	* 586	492	525	525	416	376	366	386
17	385	409	430	399	554	487	518	* 520	412	375	368	385
18	389	413	468	400	538	480	* 507	515	405	373	366	384
19	389	408	* 481	399	529	479	508	517	* 400	373	368	383
20	388	407	448	* 400	521	484	504	517	399	373	370	382
21	392	408	429	401	515	478	503	516	396	373	369	380
22	392	406	418	401	510	480	515	512	394	370	369	378
23	392	408	410	407	503	482	519	505	394	370	367	376
24	391	407	406	410	497	495	516	498	392	370	* 367	376
25	394	421	404	413	498	494	512	490	390	368	368	374
26	393	434	404	414	491	491	512	487	389	368	368	374
27	394	421	401	418	488	490	509	487	391	366	370	373
28	396	415	397	420	484	* 483	505	483	390	367	372	373
29	398	412	396	427	—	483	507	476	387	367	375	372
30	400	409	397	435	—	488	526	479	385	365	375	370
31	399	—	397	544	—	493	—	480	—	366	375	—
Total	12,005	12,279	12,839	12,650	14,953	14,944	15,842	15,948	12,721	11,608	11,404	11,403
Mean	387	409	414	408	534	482	528	514	424	374	368	380
Max.	400	434	481	544	621	499	568	559	496	382	375	388
Min.	377	396	396	393	484	470	502	470	385	365	365	370
Ac-ft	23,810	24,360	25,470	25,090	29,660	29,640	31,420	31,630	25,230	23,020	22,620	22,620

Calendar year 1960: Max 884 Min 373 Mean 448 Acre-feet 325,500
 Water year 1960-61: Max 621 Min 365 Mean 435 Acre-feet 314,600

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3555. Hat Creek near Hat Creek, Calif.

Location.--Lat 40°41'12", long 121°25'25", in SBL sec.28, T.33 N., R.5 E., on right bank 0.8 mile northeast of Old Station Post Office and 8 miles southeast of Hat Creek Post Office.

Drainage area.--122 sq mi, approximately; hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.---July 1926 to September 1929, April 1930 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,300 ft (from topographic map). July 1926 to April 1928 at site 0.5 mile upstream at different datum.

Average discharge.---34 years, 131 cfs (94,840 acre-ft per year).

Extremes.--Maximum discharge during year, 214 cfs June 15 (gage height, 2.83 ft); minimum, 108 cfs Dec. 7.

1926-61: Maximum discharge, 3,320 cfs Dec. 11, 1937 (gage height, 7.75 ft, in gage well, affected by drawdown), from rating curve extended above 160 cfs on basis of slope-area measurement of peak flow; minimum, 65 cfs Sept. 7, 1934.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Diversions for irrigation of about 260 acres above station.

Rating table (gage height, in feet, and discharge in cubic feet per second)

2.37	110
2.5	134
2.8	206

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	117	119	138	115	124	119	124	138	175	141	124	119
2	117	119	128	113	128	121	126	134	183	138	124	119
3	117	121	121	113	128	123	130	138	183	136	126	117
4	117	121	117	113	126	123	132	136	190	134	126	113
5	117	121	112	112	126	121	132	134	190	132	126	113
6	132	121	110	112	126	121	130	138	190	132	128	113
7	*128	121	110	112	126	121	128	134	196	130	132	113
8	126	119	110	113	130	123	126	136	196	128	*138	119
9	126	119	112	115	134	121	126	141	185	126	124	123
10	126	119	112	115	132	121	128	156	190	128	115	123
11	124	123	113	117	152	123	132	147	190	128	115	123
12	124	123	113	117	136	121	*138	143	188	128	119	*123
13	124	117	115	117	*126	121	130	143	193	130	117	121
14	123	113	115	117	124	123	128	147	*196	130	117	121
15	123	119	115	117	124	124	130	154	196	128	115	121
16	123	123	119	117	123	121	136	*158	196	126	117	123
17	123	124	123	117	123	121	145	161	193	124	115	123
18	123	132	123	115	121	121	147	166	188	123	115	119
19	121	123	119	115	121	123	138	173	180	123	123	117
20	121	123	117	115	121	121	132	180	180	119	123	115
21	121	121	117	117	121	123	132	183	180	117	123	115
22	121	119	119	117	121	124	130	183	175	117	123	113
23	121	121	121	117	121	126	130	178	168	117	123	113
24	121	126	117	117	121	124	128	173	168	117	123	113
25	121	128	110	117	119	124	126	178	166	117	123	113
26	121	117	115	119	119	124	126	180	161	117	123	112
27	121	119	*117	117	121	124	126	168	158	117	123	113
28	121	119	117	119	119	123	128	168	154	117	124	117
29	121	121	117	121	—	123	132	170	145	117	124	119
30	119	119	115	126	—	123	134	180	138	123	121	119
31	119	—	115	124	—	124	—	168	—	124	121	—
Total	3,779	3,630	3,622	3,608	3,513	3,795	3,930	4,886	5,391	3,884	3,790	3,525
Mean	122	121	117	116	125	122	131	158	180	125	122	118
Max.	132	132	138	126	152	126	147	183	196	141	138	123
Min.	117	113	110	112	119	119	124	134	138	117	115	113
Ac-ft	7,500	7,200	7,180	7,160	6,970	7,530	7,800	9,690	10,690	7,700	7,520	6,990

Calendar year 1960 : Max 218 Min 110 Mean 134 Acre-feet 97,300
 Water year 1960-61 : Max 196 Min 110 Mean 130 Acre-feet 93,920

Peak discharge (base, 170 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
5-21	11p.m.	2.77	198	6-15	11p.m.	2.83	214

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 22-26, Dec. 28 to Feb. 12.

SACRAMENTO RIVER BASIN

713

11-3605. Burney Creek near Burney, Calif.

Location--Lat 40°52'15", long 121°40'50", in SE 1/4 sec. 19, T.35 N., R.3 E., on right bank 300 ft upstream from road bridge, three-quarters of a mile southwest of Burney, and 4.5 miles upstream from Goose Creek.

Drainage area--87.2 sq mi.

Records available--August 1911 to August 1913 (published as "at Burney"), March 1921 to September 1922, April 1958 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage--Water-stage recorder. Altitude of gage is 3,180 ft (from topographic map). August 1911 to August 1913 and March 1921 to September 1922 staff gage or water-stage recorder at different site and datum.

Extremes--Maximum discharge during year, 427 cfs Feb. 8 (gage height, 9.27 ft), from rating curve extended above 200 cfs; minimum, 3.4 cfs Aug. 4. 1911-13, 1921-22, 1958-61: Maximum discharge, 592 cfs Jan. 12, 1959 (gage height, 9.75 ft); minimum, that of Aug. 4, 1961.

Remarks--Probably small diversions for irrigation upstream. Slight regulation probably caused by logging operations.

Cooperation--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.5	15	200	23	187	47	105	102	97	14	5.1	8.3
2	7.4	13	98	23	170	52	110	105	116	13	5.8	8.1
3	7.5	15	57	23	176	56	128	95	88	16	5.6	8.0
4	8.0	13	36	23	125	60	138	88	73	15	5.2	8.6
5	9.6	14	27	23	98	58	130	83	62	14	5.8	8.3
6												
7	24	16	22	23	92	52	119	119	56	14	6.2	8.4
8	16	16	23	26	96	51	112	134	49	15	6.2	9.0
9	13	14	20	27	91	71	105	119	45	13	6.3	9.5
10	12	13	20	24	230	73	106	108	38	12	7.5	10
11	12	16	20	25	224	74	112	133	35	12	8.1	11
12	12	19	21	23	211	68	103	134	36	11	7.5	*11
13	14	23	18	21	161	62	122	128	39	12	7.7	11
14	16	30	17	21	138	60	120	112	31	12	9.4	11
15	13	22	22	20	146	*73	*104	101	28	11	10	11
16	12	*19	20	20	*179	96	96	96	27	12	9.4	11
17	12	20	29	18	144	79	96	95	25	10	12	11
18	12	23	97	17	128	82	*100	92	25	10	13	12
19	*12	65	115	20	131	73	99	*91	24	9.7	13	11
20	12	24	*86	*19	98	79	95	94	23	9.5	13	9.4
21	12	18	56	17	86	103	84	92	*24	11	14	8.9
22	14	19	49	18	97	91	96	88	21	12	12	8.6
23	14	16	40	18	90	96	103	86	19	11	11	8.1
24	13	18	34	20	69	104	102	80	18	7.7	12	7.6
25	12	30	32	21	87	123	106	68	19	7.4	12	7.7
26	13	81	30	20	97	117	106	66	20	*7.1	*11	8.0
27	12	44	29	23	63	109	102	78	19	6.6	11	8.2
28	12	31	25	26	60	105	103	80	17	6.6	12	9.1
29	12	26	24	23	53	98	102	70	16	6.5	13	8.6
30	12	21	24	36	-	88	107	63	15	6.6	14	8.4
31	12	32	25	85	-----	92	105	78	15	6.2	14	8.6
31	13	-----	25	340	-----	99	-----	99	-----	5.4	13	-----
Total	583.0	726	1341	1066	3527	2491	3216	2977	1120	3293	305.8	279.4
Mean	12.4	24.2	43.3	34.4	126	80.4	107	96.0	37.3	10.6	9.86	9.31
Max.	24	81	200	340	230	123	138	134	116	16	14	12
Min.	7.4	13	17	17	53	47	84	63	15	5.4	5.1	7.6
Ac-ft	760	1,440	2,660	2,110	7,000	4,940	6,380	5,900	2,220	653	607	554
Calendar year 1960:			Max	458	Min	6.2	Mean	40.9	Acre-feet	59,720		
Water year 1960-61:			Max	340	Min	5.1	Mean	48.7	Acre-feet	35,220		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3625. Pit River below Pit No. 4 Dam, Calif.

Location.--Lat 40°58'25", long 121°46'42", in SW¹/₄ sec.17, T.36 N., R.2 E., on right bank 0.65 mile downstream from Ruling Creek, 1.3 miles downstream from Pit No. 4 Dam, and 2.7 miles downstream from Pit No. 3 powerhouse.

Drainage area.--4,860 sq mi, approximately, excluding Goose Lake basin.

Records available.--May 1922 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "near Pecks Bridge" April to October 1922, and as "at Lindsay Flat" November 1922 to June 1927.

Gage.--Water-stage recorder. Altitude of gage is 2,345 ft (from river-profile map). Prior to November 1922 at site at Pecks Bridge 7.4 miles upstream at different datum. November 1922 to June 20, 1927, at site at Lindsay Flat 1.8 miles upstream at different datum.

Average discharge.--51 years (1910-61), 2,708 cfs (1,961,000 acre-ft per year), including diversion to Pit No. 4 powerhouse. Period 1910-22 extrapolated on basis of records for Pit River at Big Bend.

Extremes.--Maximum discharge during year, 467 cfs Apr. 9 (gage height, 5.66 ft); minimum daily, 45 cfs Feb. 6, 7. 1922-55 (prior to diversion to Pit No. 4 powerhouse): Maximum discharge, 30,200 cfs Dec. 12, 1937 (gage height, 17.90 ft), from rating curve extended above 8,000 cfs on basis of velocity-area studies; minimum daily, 234 cfs Sept. 13, 1953. 1955-61: Maximum discharge, 17,200 cfs Dec. 23, 1955 (gage height, 14.39 ft); minimum daily, that of Feb. 6, 7, 1961.

Remarks.--Records excellent. Flow regulated by many small reservoirs and powerplants (total usable reservoir capacity, about 210,000 acre-ft). Many diversions above station; diversion to Pit No. 4 powerhouse began June 9, 1955.

Cooperation.--Water-stage-recorder graph and three discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.1	33	4.5	100
4.2	48	4.8	164

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	81	98	50	54	47	85	133	128	133	153	148
2	100	76	66	51	51	47	91	133	126	137	143	139
3	98	76	64	51	47	48	89	135	128	135	141	139
4	100	76	62	51	47	47	87	133	126	137	141	143
5	100	74	64	51	47	53	83	131	124	141	143	150
6	100	76	59	50	45	51	83	135	126	143	143	146
7	100	73	56	51	45	48	81	133	124	146	*143	146
8	102	74	53	53	47	48	81	131	124	137	141	162
9	100	73	53	53	61	58	102	*126	124	139	141	146
10	100	*74	51	53	51	61	94	128	124	139	141	146
11	100	74	51	53	81	59	92	131	128	148	139	146
12	98	79	51	53	66	54	96	126	124	139	141	146
13	96	78	51	51	64	53	96	126	126	143	150	146
14	98	79	50	51	62	53	87	126	128	143	141	146
15	96	79	48	51	67	56	76	126	126	143	137	148
16	94	79	50	51	58	56	76	126	128	143	146	146
17	94	83	58	53	56	59	76	124	124	141	137	148
18	96	92	53	53	56	56	76	124	135	148	137	146
19	96	79	51	53	54	58	76	126	124	143	137	155
20	98	81	51	53	53	59	76	126	135	148	139	157
21	98	78	53	53	53	56	78	126	124	143	150	148
22	98	78	53	53	51	56	79	128	128	150	150	155
23	98	79	54	53	51	58	85	128	133	155	150	153
24	98	85	53	53	50	71	85	128	124	146	150	155
25	98	100	53	53	48	64	79	126	124	146	150	148
26	98	94	53	53	47	73	79	128	124	153	137	157
27	98	83	53	53	47	66	78	128	*128	153	141	146
28	98	78	51	53	47	64	120	128	146	155	139	148
29	96	*78	51	56	---	64	131	128	139	153	135	155
30	92	78	50	71	---	64	133	128	131	153	135	148
31	98	---	50	94	---	62	---	128	---	143	150	---
Total	1048	2387	1714	1681	1506	1769	2650	1983	1853	4478	4421	4462
Mean	98.3	79.6	55.3	54.2	53.8	57.1	88.3	128	128	144	143	149
Max	112	100	98	94	81	73	133	135	146	155	153	162
Min	92	73	48	50	45	47	76	124	124	133	135	139
Ac-ft	6,050	4,730	3,400	3,330	2,990	3,510	5,260	7,900	7,600	8,880	8,770	8,850
(†)	128,400	144,200	162,800	141,700	184,900	171,000	153,600	146,000	114,400	86,160	111,000	124,900
Mean*	2,186	2,503	2,703	2,358	3,384	2,838	2,671	2,503	2,051	1,546	1,948	2,249
Ac-ft*	134,400	148,900	166,200	145,000	187,900	174,500	158,900	153,900	122,000	95,040	119,800	133,800

Calendar year 1960:

Max 3,570

Min 48

Mean 164

Ac-ft 118,800

Mean* 2,481

Ac-ft* 1,801,000

Water year 1960-61:

Max 162

Min 45

Mean 98.4

Ac-ft 71,270

Mean* 2,403

Ac-ft* 1,740,000

* Discharge measurement made on this day.

† Diversion, in acre-feet, to Pit No. 4 powerhouse, furnished by Pacific Gas & Electric Co.

* Adjusted for diversion.

SACRAMENTO RIVER BASIN

715

11-3630. Pit River at Big Bend, Calif.

Location.--Lat 41°01', long 121°55', in sec.31, T.37 N., R.1 E., on left bank at Big Bend, 0.5 mile downstream from Nelson Creek and 1 mile upstream from Kosk Creek.

Drainage area.--4,920 sq mi, approximately, excluding Goose Lake basin.

Records available.--October 1910 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Henderson" 1910-23.

Gage.--Water-stage recorder. Datum of gage is 1,674.47 ft above mean sea level, datum of 1929. Prior to Dec. 28, 1912, staff gage and Dec. 28, 1912, to June 21, 1924, water-stage recorder, at same site at datum 7.69 ft higher.

Extremes.--Maximum discharge during year, 930 cfs Feb. 11 (gage height, 7.30 ft); minimum daily, 56 cfs Dec. 14, Jan. 22-25. 1910-61: Maximum discharge, 34,200 cfs Dec. 12, 1937 (gage height, 16.26 ft), from rating curve extended above 12,000 cfs on basis of velocity-area studies; minimum daily, 34 cfs Mar. 29, 1955.

Remarks.--Records good except those for periods of doubtful gage-height record, which are fair. Flow regulated by many reservoirs and powerplants (total usable reservoir capacity, about 210,000 acre-ft). Many diversions above station; diversion to Pit No. 5 powerhouse began May 1, 1944.

Cooperation.--Water-stage-recorder graph and three discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 16)

4.2	51	6.0	350
4.5	81	6.5	510
5.0	140	7.0	740
5.5	226		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	108	97	338	62	455	130	200	215	185	136	128	121
2	105	83	125	60	273	129	208	206	189	136	129	122
3	103	82	132	60	263	128	*219	202	177	138	129	123
4	109	82	103	59	202	124	222	200	168	136	128	122
5	110	83	83	59	168	135	208	200	168	139	124	120
6	115	84	74	58	155	132	200	208	165	138	121	118
7	112	90	70	57	144	127	191	198	168	138	*122	121
8	109	85	67	57	152	130	182	200	165	135	126	122
9	109	88	62	70	282	141	175	*195	164	133	128	127
10	110	*84	61	64	295	164	168	215	156	133	126	118
11	111	90	60	61	640	168	165	258	156	135	128	118
12	109	103	59	59	570	152	167	226	158	134	127	120
13	110	106	57	59	345	152	159	222	158	133	127	117
14	110	102	56	58	338	161	153	215	153	132	126	117
15	110	97	59	64	350	204	150	208	152	130	127	118
16	108	93	116	58	394	187	148	204	152	128	128	123
17	104	103	236	59	405	195	147	202	149	132	126	122
18	108	129	191	58	386	182	144	196	143	134	126	122
19	104	102	150	58	307	189	140	195	147	134	121	126
20	108	97	121	58	191	200	138	187	143	133	122	117
21	104	98	105	57	178	187	144	162	147	129	122	117
22	105	98	93	56	168	180	150	183	143	126	121	116
23	106	103	83	56	156	185	155	182	144	122	123	118
24	105	143	81	56	152	217	149	178	141	123	122	117
25	104	167	77	56	145	208	143	177	143	130	124	118
26	108	143	71	58	141	228	139	182	144	130	128	121
27	112	123	71	58	138	224	134	173	*144	130	128	120
28	105	110	*68	57	137	206	143	170	145	129	126	122
29	104	108	66	80	-----	202	215	168	145	130	126	122
30	105	116	63	160	-----	200	217	178	143	128	124	120
31	106	-----	62	524	-----	196	-----	171	-----	123	124	-----
TOTAL	3,336	3,087	3,130	2,416	7,525	5,363	5,073	6,096	4,655	4,087	3,887	3,605
MFAN	108	103	101	77.9	269	173	169	197	155	132	125	120
MAX	115	167	338	524	640	228	222	258	189	139	129	127
MIN	103	82	56	56	132	124	134	168	141	122	121	116
AC-FT	6,620	6,120	6,210	4,790	14,930	10,640	10,060	12,090	9,230	8,110	7,710	7,150

CALENDAR YEAR 1960: MAX 4,940 MIN 50 MEAN 209 AC-FT 151,900
WATER YEAR 1960-61: MAX 640 MIN 56 MEAN 149 AC-FT 103,700

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Feb. 2-8, 13-16.

SACRAMENTO RIVER BASIN

11-3650. Pit River near Montgomery Creek, Calif.

Location.--Lat 40°50'50", long 121°59'30" in NE $\frac{1}{4}$ sec.32, T.35 N., R.1 W., on left bank 1 mile upstream from Cow Canyon Creek and 3.5 miles west of town of Montgomery Creek.

Drainage area.--5,170 sq mi, approximately, excluding Goose Lake Basin.

Records available.--October 1944 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 1,075.00 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--17 years, 3,718 cfs (2,692,000 acre-ft per year).

Extremes.--Maximum discharge during year, 11,500 cfs Jan. 31 (gage height, 7.55 ft); minimum, 579 cfs Sept. 30. 1944-61: Maximum discharge, 37,100 cfs Dec. 23, 1955 (gage height, 14.12 ft); minimum, 486 cfs Sept. 27, 1959.

Remarks.--Records excellent. Flow regulated by many small reservoirs and several power plants above station. Many diversions above station for irrigation. Concerning regulation and diversions see Remarks for stations upstream. This station is just above pool stage when Shasta Lake is full.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.1	750
2.5	1,080
3.0	1,600
5.0	4,680
7.0	9,720

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*3,010	2,680	6,510	1,870	6,620	3,810	4,630	4,070	3,940	1,830	2,440	2,610
2	1,090	2,720	5,260	1,910	5,700	3,850	4,290	4,160	4,060	964	2,500	2,290
3	2,200	2,740	4,870	2,980	5,620	4,090	4,400	3,590	1,820	2,280	2,740	1,750
4	2,510	2,540	4,320	3,750	4,690	2,730	5,200	3,640	2,150	1,880	*2,580	1,250
5	2,560	2,750	3,790	3,120	4,170	2,920	4,830	3,920	3,460	2,780	1,980	2,480
6	2,720	2,120	3,120	3,000	4,080	3,770	5,140	3,680	3,420	2,820	989	2,190
7	2,650	2,930	3,070	1,950	4,430	3,740	4,710	1,840	3,670	2,850	2,310	2,440
8	2,570	2,680	3,050	1,480	4,690	3,950	3,860	3,610	3,420	2,260	2,750	1,780
9	2,440	2,180	3,100	2,650	6,900	4,620	3,160	3,560	3,400	1,010	2,440	2,600
10	2,550	2,090	3,040	*3,340	6,500	4,390	3,880	4,070	1,990	2,560	2,240	1,020
11	2,690	2,340	1,990	3,320	8,520	4,000	4,400	4,660	1,110	2,500	2,620	2,400
12	2,580	2,590	3,250	3,310	7,370	3,000	4,090	4,460	3,010	2,780	2,130	2,390
13	2,570	3,020	3,120	3,290	6,380	4,340	4,290	3,120	3,070	2,590	768	2,500
14	2,540	2,920	2,820	3,280	6,400	4,080	3,800	2,240	2,800	2,610	2,500	2,380
15	2,600	2,930	2,860	1,840	6,570	5,370	3,720	3,960	3,140	2,580	2,860	2,980
16	2,090	2,740	3,520	2,820	6,330	4,880	3,800	4,320	2,840	1,410	2,580	1,910
17	2,330	2,700	4,880	3,260	6,210	5,160	3,480	4,390	1,080	2,420	2,300	1,380
18	2,520	3,230	4,970	3,240	5,920	4,370	3,950	4,100	990	2,450	2,660	2,440
19	2,770	2,840	4,530	3,180	5,660	4,000	3,800	3,740	2,080	2,560	1,640	2,610
20	2,660	1,990	4,950	3,130	4,990	4,480	3,570	2,080	2,030	2,540	1,550	2,560
21	2,680	*2,660	4,140	2,000	5,100	5,160	3,520	2,340	2,860	2,640	2,100	2,600
22	2,590	2,830	4,460	1,460	5,040	4,890	1,940	3,420	2,840	2,090	2,600	2,810
23	2,700	2,910	3,440	2,980	4,740	5,050	3,850	3,450	2,800	864	2,150	2,030
24	2,690	3,970	2,790	3,090	4,720	5,050	4,390	3,370	1,980	2,020	2,380	900
25	2,680	4,240	2,530	3,260	4,130	5,590	4,740	3,420	2,020	2,490	2,580	2,330
26	2,690	4,170	2,740	3,290	3,180	5,060	*3,860	3,810	2,410	2,440	2,080	2,290
27	2,640	3,250	3,220	3,450	3,970	5,750	3,770	2,400	3,020	2,580	1,710	2,640
28	2,880	2,990	3,700	1,310	*3,760	5,640	3,930	1,770	2,830	2,550	1,910	2,580
29	2,640	3,360	3,420	2,110	-	5,460	2,090	3,500	2,860	2,420	2,520	2,600
30	2,620	3,080	3,000	4,890	-	5,390	2,180	3,270	2,890	1,670	2,580	1,790
31	2,680	-	2,500	8,950	-	*5,240	-	*3,840	-	2,320	2,730	-
Total	79,140	86,190	112,960	93,510	152,390	139,830	172,770	107,800	79,990	69,758	69,917	66,530
Mean	2,553	2,873	3,644	3,016	5,442	4,511	3,909	3,477	2,666	2,250	2,255	2,218
Max.	3,010	4,240	6,510	8,950	8,520	5,750	5,200	4,660	4,060	2,850	2,750	2,980
Min.	1,090	2,090	1,990	1,310	3,180	2,730	1,940	1,770	990	864	768	900
Ac-ft	157,000	172,000	224,100	185,500	302,300	277,300	232,600	213,800	158,700	138,400	138,700	132,000
Calendar year 1960 :			Max 13,800	Min 720	Mean 3,361	Acres-feet 2,440,000						
Water year 1960-61 :			Max 8,950	Min 768	Mean 3,220	Acres-feet 2,331,000						

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

717

11-3655. Squaw Creek above Shasta Lake, Calif.

Location.--Lat 40°51'25", long 122°05'08", in SW $\frac{1}{4}$ sec.29, T.35 N., R.2 W., on left bank 1.3 miles upstream from Salt Creek, about 2 miles upstream from Shasta Lake, and 10 miles west of town of Montgomery Creek.

Drainage area.--65.3 sq mi.

Records available.--October 1944 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as "above Shasta Reservoir" prior to 1950.

Gage.--Water-stage recorder. Altitude of gage is 1,170 ft (from topographic map).

Average discharge.--17 years, 230 cfs (166,500 acre-ft per year).

Extremes.--Maximum discharge during year, 3,440 cfs Jan. 30 (gage height, 13.45 ft); minimum, 14 cfs Sept. 28-30.
1944-61: Maximum discharge, 17,800 cfs Dec. 21, 1955 (gage height, 21.90 ft), from rating curve extended above 4,200 cfs on basis of slope-area measurement at gage height 18.90 ft; minimum, 10 cfs Sept. 22-25, 1949, Jan. 3, 1950, Jan. 6, 1957.

Remarks.--Records good. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

5.9	14	8.0	255
6.0	18	9.0	555
6.2	28	10.0	1,010
6.5	46	12.0	2,240
7.0	89	14.0	3,960
7.5	157		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*15	17	1150	100	1070	191	425	184	112	46	25	17
2	15	17	950	95	*720	182	391	*173	124	45	24	16
3	15	16	560	90	680	171	367	166	106	44	24	16
4	15	16	309	87	551	162	341	157	99	44	24	16
5	16	16	211	83	447	207	314	154	95	44	24	16
6	41	17	161	80	394	199	289	165	92	*44	24	16
7	27	23	131	78	344	182	266	157	89	43	23	16
8	21	20	112	80	355	209	246	144	87	42	24	*16
9	18	18	99	87	1020	289	231	147	84	40	22	15
10	18	18	92	*79	1240	441	215	193	81	38	22	15
11	18	24	85	75	1670	510	203	504	81	38	21	15
12	18	56	78	72	1250	481	197	428	78	37	22	14
13	17	84	74	70	930	415	184	352	75	40	21	14
14	17	62	71	67	880	421	175	301	73	38	21	14
15	17	50	74	66	990	870	164	268	70	35	20	15
16	16	40	384	64	930	925	155	242	68	35	19	18
17	16	39	1270	62	766	1090	149	221	66	34	19	22
18	16	85	1050	60	615	900	143	203	64	33	18	18
19	16	51	815	59	517	761	138	189	61	32	19	17
20	16	37	548	58	444	702	133	179	59	32	20	16
21	16	*35	394	56	388	623	154	170	58	31	19	16
22	16	32	306	55	344	547	191	157	56	30	18	16
23	16	34	251	57	309	488	199	149	55	30	18	16
24	16	171	213	55	279	567	197	141	53	29	17	16
25	16	436	186	54	259	671	189	135	52	29	17	15
26	18	276	164	56	235	806	186	141	51	28	17	15
27	18	141	147	64	*221	940	175	125	49	28	18	15
28	17	94	135	56	205	761	164	118	49	27	18	14
29	17	76	124	94	—	623	184	114	48	26	18	14
30	17	87	112	539	—	536	188	118	47	26	18	14
31	17	—	106	2330	—	*477	—	111	—	26	17	—
Total	552	2088	10362	4928	18053	16347	6553	6006	2182	1094	631	473
Mean	17.8	69.6	334	159	645	527	218	194	72.7	35.3	20.4	15.8
Max.	41	436	1,270	2,330	1,670	1,090	425	504	124	46	25	22
Min.	15	16	71	54	205	162	133	111	47	26	17	14
Ac-ft	1,090	4,140	20,550	9,770	35,810	32,420	13,000	11,910	4,330	2,170	1,250	938
Calendar year 1960:				Max 4,580	Min 15	Mean 201		Acres-feet 146,200				
Water year 1960-61:				Max 2,330	Min 14	Mean 190		Acres-feet 137,400				

Peak discharge (base, 2,000 cfs).--Jan. 30 (10 a.m.) 3,440 cfs (13.45 ft).

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3675. McCloud River near McCloud, Calif.

Location.--Lat 41°11'20", long 122°03'50", in NE $\frac{1}{4}$ sec.34, T.39 N., R.2 W., on right bank 0.4 mile downstream from Angel Creek and 6 miles southeast of McCloud.

Drainage area.--382 sq mi.

Records available.--April 1931 to September 1961.

Gage.--Water-stage-recorder. Datum of gage is 2,711.2 ft above mean sea level (river-profile survey).

Average discharge.--30 years, 897 cfs (649,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,930 cfs Jan. 31 (gage height, 2.85 ft); minimum daily, 755 cfs Nov. 2-10.

1931-61: Maximum discharge, 11,800 cfs Dec. 21, 1955 (gage height, 9.42 ft), from rating curve extended above 3,700 cfs on basis of slope-area measurement of peak flow; minimum, 524 cfs Nov. 23, 24, 1932.

Remarks.--Records good. Two small diversions above station for irrigation, and one 22-inch pipe line for town of McCloud and millpond.

Cooperation.--Water-stage-recorder graph and six discharge measurements furnished by Pacific Gas & Electric Co.

Rating tables (gage height, in feet, and discharge,
in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Apr. 22	
Apr. 23 to Sept. 30			
1.3	725	1.5	830
1.8	1,350	2.0	1,170
2.5	1,610	3.0	2,050

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	785	761	*1,290	798	1,420	890	960	*1,080	1,030	844	811	785
2	779	755	1,190	792	1,230	890	974	1,060	1,110	856	811	785
3	779	755	987	792	1,170	890	1,000	1,050	1,060	850	804	785
4	779	755	915	785	1,070	884	*1,020	1,040	1,040	837	811	792
5	785	755	870	785	1,020	884	1,010	1,020	1,020	824	818	*792
6	811	755	844	785	988	884	1,000	1,030	1,010	818	818	792
7	792	755	830	785	981	872	988	1,040	987	818	818	785
8	785	755	824	785	967	878	974	1,010	974	818	818	785
9	773	755	818	792	1,060	878	974	1,020	960	830	811	792
10	773	755	804	804	1,300	872	974	1,110	954	830	811	792
11	773	761	804	798	1,630	890	967	1,220	960	830	811	792
12	767	785	798	785	1,430	890	981	1,150	954	830	811	785
13	767	785	798	785	1,270	878	981	1,110	948	844	811	785
14	767	779	798	785	1,190	925	981	1,020	941	837	804	785
15	767	773	798	785	*1,280	1,080	974	1,070	934	830	*804	779
16	767	767	837	779	1,230	1,040	a 970	1,060	934	824	798	792
17	767	773	974	779	1,160	1,010	a 970	1,080	928	818	798	785
18	767	785	1,140	773	1,100	981	a 970	1,090	922	818	798	785
19	767	773	1,240	773	1,060	974	a 960	1,100	915	824	798	779
20	767	767	1,060	773	*1,030	974	a 960	1,110	908	830	798	779
21	767	767	974	773	1,010	960	a 1,000	1,100	908	824	798	779
22	767	767	934	773	995	960	a 1,030	1,090	908	824	798	779
23	767	767	908	773	967	960	a 1,020	1,080	902	824	798	779
24	761	824	889	767	953	995	a 1,000	1,070	889	818	798	785
25	761	946	870	767	946	995	a 980	1,060	876	818	792	785
26	761	882	856	773	932	995	967	1,060	882	818	792	785
27	761	804	844	773	918	988	967	1,060	882	818	785	779
28	761	785	837	773	904	967	960	1,040	*870	811	785	779
29	767	779	*824	785		960	994	1,020	837	818	792	779
30	767	798	811	830		953	1,090	1,020	837	818	785	779
31	761		804	1,570		953		1,020		818	785	
Total	23,918	23,423	28,170	25,075	31,211	29,150	29,596	33,150	28,280	25,619	24,870	23,539
Mean	772	781	909	809	1,115	940	987	1,069	943	826	802	785
Max.	811	946	1,290	1,570	1,630	1,080	1,090	1,220	1,110	856	818	792
Min.	761	755	798	767	904	872	960	1,010	837	811	785	779
Ac-ft	47,440	46,460	55,870	49,740	61,910	57,820	58,700	65,750	56,090	50,810	49,330	46,690

Calendar year 1960
Water year 1960-61

Max 1,790
Max 1,630

Min 755
Min 755

Mean 919
Mean 893

Acre-feet 667,500
Acre-feet 646,600

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	6p.m.	2.32	1,460	1-31	6p.m.	2.85	1,930
12-19	7a.m.	2.14	1,310	2-11	2p.m.	2.73	1,790

* Discharge measurement made on this day.
a No gage-height record.

11-3680. McCloud River above Shasta Lake, Calif.

Location.--Lat 40°57'30", long 122°13'05", in NW $\frac{1}{4}$ sec.28, T.36 N., R.3 W., on right bank just upstream from Shasta Lake, 0.2 mile downstream from Big Bollibokka Creek, and 11.3 miles east of La Moine.

Drainage area.--606 sq mi.

Records available.--October 1945 to September 1961. Published as "above Shasta Reservoir" prior to 1950.

Gage.--Water-stage recorder. Datum of gage is 1,100.00 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--16 years, 1,701 cfs (1,231,000 acre-ft per year).

Extremes.--Maximum discharge during year, 8,520 cfs Dec. 1 (gage height, 17.39 ft); minimum, 922 cfs Nov. 3, 4, 5.
1945-61: Maximum discharge, 45,200 cfs Dec. 22, 1955 (gage height, 28.20 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurement of peak flow; minimum, 820 cfs Jan. 3, 1950.

Remarks.--Records excellent. Some very small diversions above station for domestic use.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

11.0	910
11.2	1,040
11.6	1,330
12.0	1,660
13.0	2,600
14.0	3,670
16.0	6,270

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	940	934	6,000	1,290	4,320	1,580	2,020	1,780	1,550	1,120	1,020	984
2	940	934	5,290	1,270	3,310	1,550	2,030	1,730	*1,680	1,140	1,020	984
3	*934	928	3,280	1,240	3,000	1,510	2,090	1,680	1,600	1,140	1,010	984
4	934	922	2,350	1,220	2,630	1,490	2,100	1,630	1,550	1,120	*1,020	991
5	946	928	1,910	1,210	2,350	1,610	2,040	1,590	1,510	1,100	1,030	984
6	1,100	940	1,670	1,200	2,190	1,540	1,970	1,620	1,470	1,100	1,030	984
7	1,010	952	1,520	1,200	2,060	1,470	1,880	1,610	1,440	1,080	1,020	984
8	977	940	1,430	1,190	2,100	1,530	1,820	1,550	1,420	1,080	1,030	984
9	952	940	1,360	*1,240	3,280	1,630	1,790	1,570	1,390	1,090	1,020	984
10	946	940	1,310	1,220	4,210	1,850	1,740	1,860	1,370	1,080	1,010	984
11	946	964	1,270	1,200	5,690	2,150	1,700	2,430	1,370	1,080	1,010	984
12	940	1,100	1,220	1,180	4,630	2,070	1,710	2,250	1,360	1,080	1,000	984
13	940	1,140	1,210	1,170	3,710	1,920	1,690	2,090	1,340	1,090	1,000	984
14	946	1,050	1,190	1,150	3,410	1,980	1,640	1,980	1,320	1,080	998	984
15	946	1,010	1,220	1,140	4,180	3,320	1,610	1,910	1,310	1,070	991	984
16	940	998	1,910	1,140	3,910	3,230	1,590	1,860	1,300	1,060	991	1,010
17	946	*1,000	3,700	1,120	3,310	3,200	1,620	1,820	1,280	1,050	984	1,020
18	946	1,170	3,970	1,120	2,900	2,880	1,620	1,800	1,270	1,050	977	1,000
19	946	1,030	3,770	1,110	2,620	2,640	1,570	1,800	1,260	1,050	991	991
20	946	991	2,910	1,110	2,400	2,510	1,540	1,810	1,240	1,040	991	984
21	946	998	2,400	1,100	2,240	2,360	1,700	1,790	1,230	1,040	991	984
22	946	970	2,090	1,100	2,130	2,240	1,800	1,750	1,230	1,040	977	984
23	940	1,040	1,880	1,120	2,010	2,160	1,680	1,710	1,220	1,030	977	984
24	940	1,830	1,750	1,100	1,930	2,240	1,620	1,670	1,220	1,030	977	977
25	940	3,150	1,630	1,100	1,880	2,220	1,580	1,630	1,190	1,030	970	977
26	946	2,140	1,550	1,110	1,800	2,400	1,560	1,640	1,190	1,030	977	977
27	940	1,530	1,490	1,140	1,740	2,480	1,550	1,600	1,190	1,020	984	977
28	940	1,300	1,430	1,110	1,690	2,310	1,530	1,560	1,180	1,020	977	977
29	940	1,220	1,390	1,260		2,180	1,610	1,540	1,140	1,020	984	970
30	934	1,290	1,350	*1,930		*2,100	1,790	1,550	1,130	1,030	977	970
31	934		1,330	6,020		2,050		1,530		1,020	977	
Total	29,467	35,279	66,780	41,810	81,630	66,400	52,190	54,340	39,950	33,010	30,911	29,549
Mean	951	1,176	2,154	1,349	2,915	2,142	1,740	1,753	1,332	1,065	997	985
Max.	1,100	3,150	6,000	6,020	5,690	3,320	2,100	2,430	1,680	1,140	1,030	1,020
Min.	934	922	1,190	1,100	1,690	1,470	1,530	1,530	1,130	1,020	970	970
Ac-ft	58,450	69,970	132,500	82,930	161,900	131,700	103,500	107,800	79,240	65,470	61,310	58,610
Calendar year 1960			Max 10,000		Min 922		Mean 1,563		Acre-feet 1,135,000			
Water year 1960-61			Max 6,020		Min 922		Mean 1,538		Acre-feet 1,113,000			

Peak discharge (base, 4,500 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	12m.	17.39	8,520	2-11	10a.m.-3p.m.	15.87	6,080
1-31	12m.	16.79	7,480				

SACRAMENTO RIVER BASIN

11-3700. Shasta Lake near Redding, Calif.

Location---Lat 40°43'10", long 122°25'10", in NW¼ sec.15, T.33 N., R.5 W., in Shasta Dam on Sacramento River near right bank, 2 miles downstream from Squaw Creek and 9.5 miles north of Redding.

Drainage area---6,665 sq mi, excluding Goose Lake basin.

Records available---November 1942 to September 1961. Prior to 1950, published as Shasta Reservoir near Redding.

Gage---Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to July 10, 1944, staff gages at various sites near dam at same datum.

Extremes---Maximum contents during year, 3,750,00 acre-ft May 26 (elevation, 1,038.39 ft); minimum, 2,333,000 acre-ft Sept. 30 (elevation, 975.70 ft).

1942-61: Maximum contents, 4,528,900 acre-ft May 18, 1957 (elevation, 1,066.22 ft); minimum since initial season of normal operation, 916,200 acre-ft Sept. 25, 26, 1944 (elevation, 877.31 ft).

Remarks---Reservoir is formed by concrete gravity-type dam completed in 1949; regulation of discharge from reservoir began Dec. 30, 1943. Usable capacity, 4,377,000 acre-ft between elevations 737.75 (bottom of lowest set of river outlets) and 1,065.0 ft (top of drum-type spillway gates) above mean sea level. Not available for release, 115,700 acre-ft. All water passes down Sacramento River, some first passing through power plant at dam. Figures given herein represent total contents.

Cooperation---Record of contents furnished by Bureau of Reclamation.

Capacity table, (elevation, in feet, and contents,
in thousands of acre-feet)

975	2,319.7	1,010	3,051.8
980	2,416.0	1,020	3,286.9
990	2,616.6	1,030	3,533.5
1,000	2,826.5	1,040	3,792.6

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961										
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Sept.
1	2,752.4	2,623.7	2,727.1	3,083.3	3,285.7	3,542.3	3,606.3	3,716.7	3,740.8	3,009.8
2	2,745.2	2,619.7	2,766.3	3,084.0	3,314.2	3,533.5	3,615.5	3,718.2	3,741.9	2,993.7
3	2,739.2	2,615.4	2,788.5	3,086.3	3,339.6	3,523.4	3,625.3	3,717.7	3,736.6	2,978.4
4	2,734.5	2,610.9	2,802.9	3,090.4	3,357.6	3,511.0	3,635.9	3,717.2	3,732.7	2,963.1
5	2,730.7	2,607.2	2,812.5	3,093.2	3,372.3	3,502.5	3,644.9	3,717.7	3,730.3	2,946.3
6	2,727.5	2,603.5	2,819.0	3,095.5	3,384.6	3,493.0	3,653.2	3,719.3	3,727.2	2,928.0
7	2,723.3	2,600.2	2,824.0	3,095.5	3,397.1	3,482.7	3,661.4	3,714.3	3,724.3	2,911.8
8	2,718.8	2,596.7	2,828.3	3,095.5	3,411.1	3,475.2	3,665.1	3,713.3	3,720.3	2,896.7
9	2,713.8	2,592.2	2,832.5	3,097.6	3,453.2	3,469.9	3,668.7	3,715.1	3,716.1	2,881.1
10	2,709.1	2,587.3	2,836.4	3,100.8	3,493.5	3,465.2	3,673.6	3,720.3	3,709.9	2,864.6
11	2,705.1	2,584.6	2,838.8	3,103.6	3,548.4	3,461.2	3,678.6	3,727.9	3,701.2	2,849.0
12	2,701.1	2,585.2	2,842.7	3,105.9	3,573.3	3,454.0	3,683.5	3,732.7	3,696.0	2,832.5
13	2,697.1	2,590.5	2,846.6	3,108.7	3,588.4	3,488.3	3,687.9	3,734.5	3,690.8	2,813.6
14	2,692.7	2,591.2	2,849.2	3,110.6	3,599.1	3,473.3	3,692.1	3,734.0	3,684.0	2,796.9
15	2,688.2	2,592.2	2,855.4	3,110.1	3,616.6	3,464.7	3,694.2	3,736.9	3,677.8	2,781.6
16	2,683.8	2,592.0	2,875.5	3,112.0	3,628.7	3,478.7	3,697.1	3,739.2	3,669.8	2,767.4
17	2,679.6	2,592.6	2,918.6	3,114.8	3,635.1	3,491.2	3,700.5	3,742.6	3,658.6	2,753.3
18	2,675.9	2,594.6	2,956.1	3,117.1	3,636.1	3,497.7	3,702.6	3,745.8	3,646.5	2,739.0
19	2,672.5	2,594.8	2,984.5	3,118.4	3,634.8	3,501.5	3,703.6	3,748.7	3,636.1	2,723.5
20	2,668.1	2,594.0	3,004.6	3,120.1	3,630.7	3,502.2	3,703.6	3,748.2	3,624.3	2,707.6
21	2,664.2	2,593.6	3,019.1	3,118.7	3,625.1	3,502.7	3,705.2	3,746.3	3,613.5	2,692.9
22	2,660.2	2,593.2	3,031.0	3,118.2	3,618.1	3,502.0	3,706.2	3,747.4	3,602.2	2,679.6
23	2,656.6	2,595.2	3,039.2	3,120.6	3,609.9	3,501.2	3,708.8	3,748.4	3,590.4	2,665.0
24	2,653.1	2,604.7	3,046.0	3,122.7	3,601.7	3,503.7	3,711.2	3,747.9	3,576.9	2,652.7
25	2,650.8	2,631.1	3,051.3	3,124.8	3,591.2	3,509.5	3,714.3	3,748.2	3,563.4	2,638.1
26	2,646.4	2,641.2	3,057.7	3,128.3	3,577.4	3,526.4	3,716.1	3,750.0	3,550.2	2,625.1
27	2,642.1	2,647.3	3,063.2	3,131.5	3,565.4	3,546.4	3,718.0	3,747.9	3,538.0	2,610.9
28	2,639.6	2,650.2	3,069.7	3,130.8	3,552.2	3,561.4	3,718.8	3,743.7	3,525.9	2,597.7
29	2,634.2	2,653.7	3,074.7	3,140.2	---	3,574.6	3,716.1	3,742.6	3,513.3	2,586.0
30	2,631.3	2,662.3	3,079.3	3,167.4	---	3,586.3	3,714.3	3,742.9	3,500.0	2,573.4
31	2,627.6	---	3,082.3	3,247.1	---	3,597.3	---	3,741.9	---	2,565.2
(†)	990.53	992.20	1,011.33	1,016.34	1,030.74	1,032.51	1,037.03	1,038.88	1,008.88	987.49
(*)	-128.7	+34.7	+420.0	+164.8	+305.1	+45.1	+117.0	+27.6	-473.8	-461.0
(††)	6,370	2,730	3,100	2,380	3,110	3,990	9,420	8,610	14,420	12,580

Calendar year 1960..... † +654.3
Water year 1960-61..... † -423.3

† Elevation, in feet, at end of month.

* Change in contents, in thousands of acre-feet.

†† Evaporation, in acre-feet. furnished by Bureau of Reclamation.

SACRAMENTO RIVER BASIN

721

11-3705. Sacramento River at Keswick, Calif.

Location.--Lat 40°36'05", long 122°26'35", in SW 1/4 sec. 28, T.32 N., R.5 W., on right bank 0.4 mile upstream from Middle Creek, 0.8 mile downstream from Keswick Dam, 1.6 miles downstream from Keswick, and 10 miles downstream from Shasta Dam.

Drainage area.--6,710 sq mi, approximately, excluding Goose Lake basin.

Records available.--October 1938 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 479.81 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1939, at site 1.5 miles upstream at datum 20.2 ft higher and Oct. 1, 1939, to Apr. 30, 1942, at site 1.5 miles upstream at datum 15.2 ft higher. Since Aug. 20, 1960, auxiliary water-stage recorder at city of Redding pumping plant 2.1 miles downstream.

Average discharge.--23 years, 8,326 cfs (6,028,000 acre-ft per year), adjusted for storage and evaporation.

Extremes.--Maximum discharge during year, 14,500 cfs Feb. 15 (gage height, 15.66 ft); minimum daily, 3,700 cfs Dec. 28.

1938-43 (prior to regulation by Shasta Lake): Maximum discharge, 186,000 cfs Feb. 23, 1940 (gage height, 47.2 ft, site and datum then in use), from rating curve extended above 75,000 cfs on basis of peak discharge at Kennett plus 4,000 cfs estimated inflow; minimum observed, 2,730 cfs Aug. 22, 1939.

1944-61: Maximum discharge, 78,800 cfs Feb. 21, 1958 (gage height, 31.55 ft); minimum, 154 cfs May 15, 1948.

Remarks.--Records good. Flow regulated by Shasta Lake beginning Dec. 30, 1943 (see preceding page). Diurnal fluctuations from Shasta powerplant re-regulated by Keswick Reservoir (capacity, 4,170 acre-ft between normal operation elevations 579.0 and 586.0 ft) and powerplant. No diversion for irrigation between Shasta Dam and station at Keswick.

Cooperation.--Eleven discharge measurements furnished by Bureau of Reclamation

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 6.340	5.820	7.400	4.240	4.370	* 12.600	6.230	* 7.670	* 8.230	10.800	* 11.900	9.010
2	6.340	* 5.820	6.300	4.230	4.400	12.600	6.230	7.700	8.220	10.800	11.900	8.520
3	6.340	5.820	3.940	4.230	4.330	12.700	* 6.200	7.680	8.220	* 10.800	11.900	8.330
4	6.340	5.830	3.730	* 4.240	4.290	12.600	6.170	7.720	8.220	10.800	11.900	8.350
5	6.340	5.830	3.710	4.250	4.280	12.600	6.170	7.720	8.260	10.800	11.900	8.350
6	6.340	5.830	3.720	4.230	4.280	12.600	6.200	7.730	8.250	10.800	11.900	* 8.330
7	6.340	5.830	3.710	4.220	4.270	12.600	6.200	7.720	8.230	11.000	11.900	8.040
8	6.340	5.810	3.720	4.240	4.270	12.600	6.200	7.700	8.260	11.300	11.900	7.760
9	6.340	5.790	3.720	4.240	4.780	12.600	6.200	7.700	8.250	11.300	11.900	7.740
10	6.340	5.820	3.710	4.240	6.660	12.700	6.200	7.680	8.280	11.300	11.900	7.760
11	6.060	5.810	3.700	* 4.250	10.100	12.700	6.200	7.680	8.290	11.400	11.900	7.700
12	5.860	5.360	* 3.700	4.250	12.900	12.700	6.200	7.520	8.280	11.300	11.900	7.470
13	5.860	5.330	3.710	4.240	13.500	12.700	* 6.200	7.150	8.260	11.300	11.900	7.260
14	5.860	4.740	3.710	4.250	14.300	* 12.800	6.200	7.160	8.780	11.300	11.900	7.250
15	5.850	4.470	3.730	4.240	* 14.300	12.900	6.200	7.160	* 9.100	11.300	11.900	7.250
16	5.850	4.460	3.880	4.210	* 14.300	12.800	6.200	7.170	9.290	11.300	* 11.100	6.920
17	5.850	4.490	3.970	4.220	* 14.300	12.900	6.200	* 7.180	9.290	11.400	11.800	6.720
18	5.850	4.540	3.840	4.220	14.200	12.800	6.780	7.180	9.290	11.300	10.800	6.700
19	* 5.850	4.560	3.790	4.220	14.200	12.800	7.170	7.200	9.490	* 11.800	10.800	6.700
20	5.830	4.560	3.750	4.220	14.200	12.800	7.170	7.200	10.200	11.900	10.800	6.700
21	5.820	* 4.560	3.740	4.230	14.200	12.800	7.200	7.200	10.300	11.800	10.800	6.700
22	5.830	* 4.260	3.750	4.220	14.200	12.800	7.200	7.210	10.600	11.900	10.800	6.730
23	5.830	4.260	3.750	4.230	14.200	12.800	7.170	7.200	10.900	11.900	10.800	6.730
24	5.820	4.260	3.730	4.220	14.300	12.800	7.180	7.210	10.900	11.900	10.600	6.730
25	5.810	5.400	3.720	4.230	14.300	10.400	6.850	7.220	10.800	11.900	10.400	6.730
26	5.810	5.090	3.710	* 4.230	14.200	8.620	6.760	7.240	10.800	11.900	10.400	6.720
27	5.810	4.290	3.700	4.240	14.300	6.520	6.730	7.210	10.900	11.900	9.980	6.740
28	5.810	4.290	3.700	4.230	14.200	6.550	7.200	7.220	10.800	11.900	9.760	* 6.740
29	5.810	4.290	3.700	4.430	---	6.210	7.510	7.210	10.900	11.900	9.570	6.740
30	5.820	4.500	3.700	4.480	---	6.250	7.740	7.200	10.800	11.900	9.290	6.740
31	5.810	---	3.700	5.710	---	6.250	---	7.630	---	11.900	9.290	---
Total	151,100	151,720	223,400	331,130	296,130	356,100	198,060	229,370	280,390	354,800	344,490	220,160
Mean	6,003	5,057	3,946	4,295	10,580	11,490	6,602	7,399	9,346	11,450	11,110	7,339
Max.	6,340	5,830	7,400	5,710	14,300	12,900	7,740	7,730	10,900	11,900	11,900	9,010
Min.	5,810	4,260	3,700	4,210	4,270	6,210	6,170	7,150	8,220	10,900	9,290	6,700
Ac-ft	369,100	300,900	242,700	264,100	587,400	706,300	392,800	454,900	556,100	703,700	683,300	436,700
Meant	4,009	5,685	10,830	7,014	16,130	12,290	8,726	7,987	5,523	4,033	3,820	3,601
Ac-ft†	246,500	338,300	665,800	431,300	895,600	755,400	519,200	491,100	328,600	248,000	234,900	214,200
Calendar year 1960:	Max	11,600	Min	3,090	Mean	6,505	Meant	7,543	Ac-ft	4,723,000	Ac-ft†	5,476,000
Water year 1960-61:	Max	14,300	Min	3,700	Mean	7,871	Meant	7,416	Ac-ft	5,698,000	Ac-ft†	5,369,000

* Discharge measurement made on this day.

† Adjusted for change in storage and evaporation from Shasta Lake.

SACRAMENTO RIVER BASIN

11-3710. Clear Creek at French Gulch, Calif.

Location.--Lat 40°41'40", long 122°38'10", in NE $\frac{1}{4}$ sec. 27, T. 33 N., R. 7 W., on right bank 1,200 ft downstream from Right Fork, 0.3 mile south of French Gulch, and 15 miles northwest of Redding.

Drainage area.--115 sq mi.

Records available.--July 1950 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,320.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1956. Prior to Dec. 28, 1959, at datum 3.00 ft higher.

Average discharge.--11 years, 225 cfs (162,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,900 cfs Jan. 31 (gage height, 7.93 ft); minimum, 7.0 cfs Sept. 4.

1950-61: Maximum discharge, 7,050 cfs Dec. 22, 1955 (gage height, 13.49 ft, present datum), from rating curve extended above 4,600 cfs on basis of slope-area measurement of peak flow; minimum, 3.9 cfs Sept. 6, 7, 8, 1955.

Remarks.--Records good. No large diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 29 to Nov. 1)

Oct. 1 to Jan. 31

Jan. 31 to Sept. 30

3.5	11	4.5	186	3.5	9.5	5.0	322
3.6	17	5.0	330	3.7	29	6.0	700
3.7	26	6.0	710	4.0	71	7.5	1,600
3.9	52	7.5	1,450	4.5	181		
4.2	111						

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	*15	1,010	107	875	205	359	*155	91	34	16	12
2	15	16	892	100	724	197	352	150	99	33	*15	11
3	16	15	538	*96	688	189	346	143	89	33	14	11
4	16	15	327	91	548	181	331	138	85	31	14	11
5	16	15	*227	87	428	192	305	136	80	33	15	9.5
6		16	173	83	374	178	287	136	78	34	16	*10
7	34	18	142	81	310	165	267	129	75	33	15	10
8	26	18	121	79	296	176	247	122	71	30	17	11
9	22	18	104	81	a 500	186	233	131	69	28	17	11
10	21	18	96	77	a 700	200	225	176	68	27	15	10
11	20	21	85	73	a 1,100	230	216	173	66	26	14	10
12	20	27	77	69	a 900	236	211	165	65	25	16	11
13	21	48	71	67	a 800	230	203	155	61	27	14	12
14	21	34	67	66	696	314	192	148	57	27	14	14
15	20	28	93	64	750	1,370	181	138	*55	25	13	14
16	18	24	400	62	*724	1,030	176	131	52	23	13	21
17	16	24	*1,060	59	632	*1,030	168	124	51	23	12	28
18	16	54	971	57	540	805	168	120	49	22	12	22
19	16	34	818	55	460	680	163	116	47	21	12	19
20	17	26	570	55	399	584	160	113	45	20	15	17
21	17	25	407	54	355	512	197	111	45	19	13	17
22	17	23	315	54	375	476	228	107	44	19	11	17
23	16	28	261	64	200	448	192	103	41	18	*10	17
24	16	128	224	59	*278	456	181	99	39	17	10	16
25	17	381	197	57	258	444	176	95	37	17	10	14
26	17	195	173	67	242	456	171	97	35	17	11	13
27	18	104	158	85	228	460	165	93	34	17	13	13
28	19	71	145	83	*214	436	163	89	35	16	13	12
29	17	60	128	135	-	413	163	91	36	15	14	13
30	16	190	121	311	-	*392	158	95	36	16	15	14
31	16	-	113	*1,340	-	372	-	93	-	16	13	-
Total	582	1,689	10,084	3,818	14,643	13,243	6,584	3,872	1,735	742	422	420.5
Mean	18.8	56.3	325	123	523	427	219	125	57.8	23.9	13.6	14.0
Max.	34	381	1,060	1,340	1,100	1,370	359	176	99	34	17	28
Min.	14	15	67	54	214	165	158	89	34	15	10	9.5
Ac-ft	1,150	3,350	20,000	7,572	20,040	26,270	13,060	7,680	3,440	1,470	837	834
Calendar year 1960 :				Max 2,220	Min 11		Mean 149		Acres-feet 108,300			
Water year 1960-61 :				Max 1,370	Min 9.5		Mean 158		Acres-feet 114,700			

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	12m.	7.90	1,690	3-15	10a.m.	7.57	1,650
1-31	12m.	7.93	1,900				

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

723

11-3720. Clear Creek near Igo, Calif.

Location.--Lat 40°30'50", long 122°31'20", in NE 1/4 sec. 27, T.31 N., R.6 W., on left bank at highway bridge on Redding-Igo road, 1.0 mile northeast of Igo, 8 miles southwest of Redding, and 11.1 miles upstream from mouth.

Drainage area.--228 sq mi.

Records available.--October 1940 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 675 ft (from river-profile map).

Average discharge.--21 years, 417 cfs (301,900 acre-ft per year); median of yearly mean discharges, 340 cfs (246,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,640 cfs Jan. 31 (gage height, 7.56 ft); minimum, 21 cfs Aug. 14.

1940-61: Maximum discharge, 24,500 cfs Dec. 21, 1955 (gage height, 13.75 ft), from rating curve extended above 18,000 cfs on basis of slope-area measurement of peak flow; minimum, 8.6 cfs Sept. 4, 6, 7, 1950.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Small diversions above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
2.2	18	4.2	700	2.1	21	3.0	167
2.4	36	5.0	1,340	2.2	27	3.5	340
2.7	83	6.0	2,580	2.4	45	4.0	580
3.0	152	7.0	4,400	2.6	73	4.5	910
3.5	325						

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	30	2.000	1.96	2.050	3.75	6.40	2.86	1.79	6.7	3.7	3.1
2	27	30	1.800	1.90	1.590	3.61	6.16	2.76	1.97	6.3	3.6	3.0
3	28	30	1.200	*1.83	1.400	3.52	5.86	2.58	1.82	6.3	3.6	3.0
4	29	28	700	1.74	1.060	3.38	5.69	2.51	1.70	6.2	3.3	3.0
5	30	28	500	1.68	821	3.90	5.30	2.48	1.62	6.2	3.5	2.9
6		51	350	1.63	*700	3.52	5.05	2.68	1.54	6.5	3.7	2.8
7	*72	35	300	1.58	604	3.21	4.70	2.58	1.51	*6.3	3.8	2.8
8	54	37	250	1.55	558	3.52	4.40	2.40	1.43	6.0	3.4	2.9
9	42	37	230	1.55	1.420	4.00	4.12	2.44	1.40	5.7	3.7	2.8
10	40	37	200	1.52	1.800	4.20	*3.98	3.04	1.35	5.5	3.5	2.8
11	39	40	180	1.47	2.820	4.35	3.84	2.96	1.30	5.3	3.4	2.8
12	39	50	160	1.42	1.960	4.35	3.76	2.86	1.28	5.1	3.6	2.6
13	40	110	150	1.40	1.460	4.15	3.64	2.68	1.22	5.1	3.6	2.8
14	37	90	140	1.37	1.230	5.80	3.48	2.51	1.15	6.2	3.3	2.8
15	36	70	350	1.37	1.400	*2.490	3.32	2.40	1.08	5.2	3.3	2.9
16	35	*63	900	1.34	1.270	2.030	3.24	2.30	1.04	5.0	3.3	3.8
17	33	65	1.900	1.32	1.070	*2.500	3.12	2.20	9.7	4.7	3.2	6.2
18	31	130	1.700	1.27	910	1.600	3.08	2.14	9.3	4.5	3.1	4.9
19	31	87	1.400	1.25	793	1.300	3.00	2.07	9.1	4.3	3.1	3.8
20	32	70	918	1.22	700	1.070	2.96	2.07	8.7	4.1	3.4	3.8
21	32	63	688	1.20	634	910	3.48	2.07	8.5	4.1	3.4	3.7
22	32	60	542	1.20	580	821	4.35	2.00	8.3	4.1	3.1	3.6
23	32	70	445	1.37	536	779	3.52	1.94	8.1	4.1	2.9	3.6
24	31	200	385	1.34	408	835	3.28	1.88	7.7	4.0	2.9	3.5
25	32	710	338	1.27	470	800	3.16	*1.82	7.5	3.9	2.9	3.3
26	33	338	301	1.69	440	1.010	3.04	1.88	7.1	3.8	3.0	3.3
27	34	199	274	2.26	415	982	2.96	1.82	6.8	3.5	3.3	3.2
28	35	147	251	1.96	395	842	2.90	1.73	7.0	3.6	3.3	3.2
29	33	127	233	880	-	772	2.93	1.70	7.0	3.6	3.3	3.0
30	31	250	219	1.300	-	720	2.90	1.91	7.0	3.6	3.3	3.1
31	30	-	206	3.770	-	670	-	1.85	-	3.7	3.3	-
Total	1.106	3.261	19.210	10.216	29.584	25.657	11.762	7.112	3.438	1.532	1.038	9.90
Mean	35.7	109	620	330	1,060	828	392	229	115	49.4	33.5	33.0
Max.	72	710	2,000	3,770	2,820	2,500	640	304	197	67	38	62
Min.	25	28	140	120	395	321	290	170	68	35	29	26
Ac-ft	2,190	6,470	38,100	20,260	58,680	50,890	23,330	14,110	6,820	3,040	2,060	1,960

Calendar year 1960 : Max 5,170 Min 24 Mean 305 Acre-feet 221,600
 Water year 1960-61 : Max 3,770 Min 25 Mean 315 Acre-feet 227,900

Peak discharge (base, 3,600 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-31	8a.m.	7.56	5,640	3-16	12p.m.	6.63	3,660

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 17 to Nov. 15, Nov. 18, 22-24, Nov. 30 to Dec. 18.

SACRAMENTO RIVER BASIN

11-3720.5. Churn Creek near Redding, Calif.

Location.--Lat 40°38'35", long 122°22'05", in NE 1/4 sec. 7, T. 32 N., R. 4 W., on right bank 0.3 mile upstream from Newtown Creek, 0.35 mile upstream from Oasis Road bridge, and 4 miles north of Redding.

Drainage area.--9.34 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 640 ft (from topographic map).

Extremes.--Maximum discharge during year, 800 cfs Jan. 31 (gage height, 5.69 ft), from rating curve extended above 280 cfs on basis of slope-area measurement at gage height 9.8 ft; no flow for several months.

Remarks.--Records excellent. Small diversion above station for domestic supply.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 17				Dec. 17 to Sept. 30			
1.13	0	1.8	7.3	1.2	0	1.9	10
1.2	.1	2.0	16	1.3	.1	2.3	33
1.3	.2	2.4	42	1.4	.2	2.7	64
1.4	.4	2.8	76	1.5	.8	3.1	108
1.5	1.0	3.2	120	1.6	2.1	3.5	163
1.6	2.3	3.7	201	1.7	3.7	4.0	267
1.7	4.4			1.8	6.5	5.0	540

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	190	3.2	103	6.5	21	4.0	2.7	0.1		
2		0	* 41	3.1	* 114	6.5	18	3.4	3.7	0		
3		* 0	23	2.9	77	6.2	14	2.9	2.9	0		
4		0	13	2.7	47	5.9	11	* 2.4	12	0		
5		0	7.3	2.7	34	12	10	2.4	5.1	0		
6		0	* 5.3	2.6	30	8.8	9.2	8.9	3.4	0		
7		0	4.4	2.6	22	7.3	8.4	6.9	2.7	0		
8		0	3.8	2.4	21	14	7.6	4.3	2.3	0		
9		0	3.4	2.6	159	16	6.9	3.7	2.0	0		
10		0	3.1	2.4	104	15	6.2	6.2	1.6	0		
11		0	2.9	2.3	107	14	5.9	10	1.6	0		
12		0	2.7	2.1	67	12	5.7	5.9	1.4	0		
13		.6	2.3	2.1	53	11	5.1	4.3	1.1	0		
14		.3	2.2	2.1	56	24	4.8	3.4	*.7	0		
15		.3	5.3	2.0	65	* 60	4.3	2.9	.5	0		
16		.4	* 101	2.0	51	5.6	4.0	2.6	.4	0		
17		.5	* 197	2.0	41	90	3.7	2.4	.3	0		
18		.8	97	1.8	31	55	3.5	2.1	.2	0		
19		.5	50	* 1.8	25	4.6	3.4	2.0	.2	0		
20		.4	30	1.8	20	3.8	3.5	2.0	.2	0		
21		.3	19	1.7	17	2.9	4.0	2.0	.2	0		
22		.3	14	1.7	14	25	5.1	1.8	.1	0		
23		.4	10	2.9	13	23	7.3	1.7	.1	0		
24	(*)	1.6	8.4	2.4	10	4.6	4.5	1.4	.1	0		
25		13	7.3	2.1	9.5	40	3.4	1.3	.1	0		
26		7.0	6.2	2.6	8.4	93	3.2	* 1.7	.1	0		
27		3.4	5.1	5.7	8.0	84	3.1	1.8	.1	0		
28		2.2	4.5	4.8	6.9	53	* 2.9	1.6	.1	0		
29		1.9	4.3	6.8	-	41	4.0	1.4	.1	0		
30		6.4	3.7	160	-	32	3.7	5.3	.1	0		
31			3.5	399	-	25	-	3.4	-	0		
Total	0	40.3	870.7	698.1	1313.8	995.2	197.4	106.1	46.1	0.1	0	0
Mean	0	1.34	28.1	22.5	46.9	32.1	6.58	3.42	1.54	0.003	0	0
Max.	0	13	197	399	159	90	21	10	12	0.1	0	0
Min.	0	0	2.2	1.7	6.9	5.9	2.9	1.3	0.1	0	0	0
Ac-ft	0	80	1,730	1,380	2,610	1,970	392	210	91	0.2	0	0

Calendar year 1960:

Max -

Min -

Mean -

Acres-feet -

Water year 1960-61:

Max 399

Min 0

Mean 11.7

Acres-feet 8,460

Peak discharge (base, 300 cfs)

* Discharge measurement or observation of no flow made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	9a.m.	4.56	413	1-31	9a.m.	5.69	800
12-16	3p.m.	4.20	316				

11-3722. South Cow Creek near Millville, Calif.

Location.--Lat 40°32'55", long 122°05'30", in NW 1/4 sec. 16, T.31 N., R.2 W., on left bank 2.5 miles upstream from Old Cow Creek and 4.4 miles east of Millville.

Drainage area.--78.7 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 610 ft (from topographic map). Prior to Aug. 9, 1957, at site 1.0 mile downstream at different datum.

Average discharge.--5 years, 93.5 cfs (67,690 acre-ft per year).

Extremes.--Maximum discharge during year, 4,870 cfs Dec. 1 (gage height, 8.81 ft), from rating curve extended above 1,800 cfs; minimum, 2.9 cfs Sept. 4.
1956-61: Maximum discharge, 5,720 cfs May 18, 1957 (gage height, 9.23 ft, site and datum then in use), from rating curve extended above 800 cfs by comparison with rating curve at present site which was extended above 1,800 cfs; minimum, 0.3 cfs Aug. 30, 1960.

Remarks.--Records good. Diversions above station of up to 35 cfs for irrigation of about 1,050 acres.

Rating tables, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second. Shifting control method used Dec. 1-5)

Oct. 1 to Feb. 11

Feb. 11 to Sept. 30

1.0	5.0	2.5	179	0.7	4.8	1.7	73
1.1	9.0	3.0	320	.8	7.0	2.0	120
1.2	14	3.5	505	.9	9.5	2.5	230
1.4	23	4.0	745	1.0	14	3.0	370
1.6	37	5.0	1,320	1.2	25	4.0	810
1.8	59	6.5	2,470	1.4	40		
2.0	87						

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.6	15	2,380	35	327	69	133	92	92	23	13	12
2	8.2	16	*390	34	760	69	133	89	113	20	10	12
3	9.0	16	181	33	287	66	144	87	98	17	11	11
4	7.8	15	117	32	191	65	156	84	92	18	12	7.5
5	11	16	92	*32	147	84	150	*83	84	19	13	6.6
6	22	17	75	32	145	84	140	95	80	20	14	9.5
7	21	21	67	32	133	73	129	100	76	23	14	12
8	21	*22	60	35	*166	246	118	93	72	24	9.0	11
9	18	20	55	38	1,230	194	115	93	66	23	12	11
10	19	18	51	39	386	162	*110	103	63	23	*13	10
11	20	21	48	35	1,340	127	103	108	62	16	13	11
12	17	34	45	35	410	106	117	100	61	16	15	10
13	17	160	43	34	289	99	110	98	58	15	12	9.5
14	16	69	42	34	275	304	101	93	51	16	13	11
15	15	35	42	33	640	359	97	95	45	14	12	11
16	15	29	69	32	292	224	98	93	43	15	12	16
17	15	28	195	31	218	448	103	93	38	11	12	20
18	15	84	132	31	178	180	106	93	39	*9.5	13	18
19	15	51	89	31	150	180	100	100	38	12	14	17
20	15	37	71	31	134	*210	93	103	35	14	12	17
21	16	35	62	31	120	162	92	97	34	13	14	16
22	15	32	57	31	112	154	110	93	33	14	13	14
23	16	31	53	32	101	165	156	89	29	15	14	15
24	16	32	40	33	93	431	105	83	24	13	13	15
25	14	615	46	31	90	258	92	76	26	13	15	15
26	16	498	44	34	83	325	90	87	26	12	12	13
27	17	116	41	55	77	280	86	84	23	12	13	12
28	15	68	39	45	72	208	86	74	*22	12	15	12
29	15	47	38	287	-	173	89	*69	20	12	18	12
30	15	90	37	348	-	152	89	95	20	14	*15	10
31	16	-	35	1,090	-	140	-	97	-	16	12	-
Total	4,766	2,288	4,745	2,686	8,446	5,796	3,351	2,839	1,563	4,945	4,030	3,771
Mean	15.4	76.3	153	86.6	302	187	112	91.6	52.1	16.0	13.0	12.6
Max.	22	615	2,380	1,090	1,340	448	156	108	113	24	18	20
Min.	7.8	15	35	31	72	65	86	69	20	9.5	9.0	6.6
Ac-ft	945	4,540	9,410	5,330	16,750	11,500	6,650	5,630	3,100	981	799	748

Calendar year 1960: Max 2,380 Min 0.5 Mean 69.1 Acre-feet 50,160
Water year 1960-61: Max 2,380 Min 6.6 Mean 91.7 Acre-feet 66,380

Peak discharge (base, 1,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	5p.m.	5.47	1,640	2-15	7a.m.	6.06	2,210
12-1	9a.m.	8.81	4,870	3-14	10p.m.	5.66	1,890
1-11	3a.m.	5.52	1,670	3-17	1a.m.	4.90	1,350
2-11	4a.m.	8.28	4,260				

SACRAMENTO RIVER BASIN

11-3732. Oak Run Creek near Oak Run, Calif.

Location.--Lat 40°41'25", long 122°02'35", in SE 1/4 sec. 25, T.33 N., R.2 N., on left bank 800 ft downstream from road bridge, 1.1 miles northwest of town of Oak Run, 3.2 miles upstream from Tracy Creek, and 12.2 miles northeast of Millville.

Drainage area.--11.1 sq mi.

Records available.--May 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,040 cfs Feb. 11 (gage height, 6.10 ft), from rating curve extended above 160 cfs on basis of slope-area measurement at gage height 5.96 ft; minimum, 0.5 cfs Sept. 3.

1957-61: Maximum discharge, 1,250 cfs Feb. 16, 1959 (gage height, 6.47 ft), from rating curve extended above 230 cfs; no flow--Aug. 17, 22, 1960.

Remarks.--Records good. Some diversion above station for irrigation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 23				Apr. 23 to Sept. 30	
1.1	1.2	3.0	56	1.0	0.7
1.3	3.0	3.5	96	1.2	1.7
1.6	7.2	4.0	157	1.4	3.4
1.9	13	4.5	260	1.7	7.2
2.2	21	5.0	410	2.0	13
2.6	36			2.4	25

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	3.6	*3.67	5.5	50	12	24	10	8.6	2.7	3.2	1.9
2	1.8	3.6	*7.7	5.3	120	12	22	9.6	9.4	1.8	3.3	2.4
3	1.6	3.1	31	5.2	60	12	20	8.6	7.2	1.4	2.9	1.8
4	1.8	2.9	18	5.0	36	11	19	7.7	6.6	2.9	2.4	1.1
5	3.0	2.3	12	*5.0	27	19	18	*7.7	6.5	2.8	2.6	1.2
6	7.6	2.6	9.7	4.9	26	14	16	9.8	6.5	3.4	2.2	1.3
7	5.3	4.0	7.9	5.2	22	12	15	9.0	6.2	2.7	2.0	2.0
8	4.8	*3.0	7.6	5.8	*4.1	34	14	8.8	5.9	1.4	1.4	1.8
9	4.5	2.8	6.9	9.7	24.6	30	14	9.6	5.8	1.3	1.6	2.4
10	5.0	2.8	6.9	6.6	7.3	28	*13	11	5.2	1.5	*1.6	2.7
11	4.9	4.8	6.4	5.5	25.9	21	12	16	4.7	1.7	1.8	2.6
12	4.8	18	5.9	5.2	6.9	18	12	11	5.3	1.8	2.4	2.6
13	4.2	6.2	5.8	4.9	6.4	16	11	9.6	5.2	2.2	2.9	3.0
14	4.0	20	5.6	4.9	7.8	37	11	8.8	4.7	2.1	2.9	3.1
15	3.5	9.4	6.4	4.9	9.2	39	10	8.3	4.5	2.2	2.5	3.3
16	3.5	6.6	4.8	4.8	50	29	8.5	7.9	3.9	2.2	1.7	5.0
17	2.4	8.2	18.8	4.6	40	48	7.9	7.7	2.6	1.8	1.7	4.8
18	2.6	30	5.5	4.3	34	27	7.9	7.4	2.8	*2.2	3.9	4.4
19	3.1	7.7	2.8	4.2	30	54	6.2	7.4	2.2	2.7	4.4	4.1
20	2.8	6.1	1.9	4.2	26	*3.8	7.6	7.6	2.4	2.7	4.1	3.8
21	1.8	5.5	14	4.1	23	28	10	6.8	1.6	2.6	3.4	3.5
22	2.7	4.3	12	4.0	21	27	24	5.9	1.6	2.2	2.0	3.1
23	3.0	5.9	10	5.3	19	34	74	6.1	1.6	2.3	1.3	3.4
24	2.8	7.7	9.2	4.8	18	100	20	5.9	1.8	2.2	1.7	3.1
25	3.1	14.7	8.3	4.5	17	46	15	4.1	2.5	1.4	1.5	2.4
26	4.1	8.1	7.7	6.6	14	8.9	13	7.6	2.4	1.4	1.4	2.2
27	3.7	1.9	6.9	13	14	54	11	6.8	2.7	1.6	1.2	2.0
28	3.0	10	6.6	7.2	13	3.9	10	6.4	3.3	1.6	1.2	2.4
29	3.4	8.3	6.2	9.5	-	34	12	*6.6	3.0	1.9	2.5	2.8
30	3.2	23	6.1	10.2	-	30	11	8.6	2.6	2.2	*2.2	3.4
31	3.5	-	5.9	1.95	-	27	-	7.2	-	3.4	1.8	-
Total	107.3	515.2	1005.0	547.2	158.2	101.9	469.1	255.5	129.3	66.3	71.7	83.6
Mean	3.46	17.2	32.4	17.7	56.5	32.9	15.6	8.24	4.31	2.14	2.31	2.79
Max.	7.6	147	367	195	259	100	74	16	9.4	3.4	4.4	5.0
Min.	1.6	2.3	5.6	4.0	13	11	6.2	4.1	1.6	1.3	1.2	1.1
Ac-ft	213	1,020	1,990	1,090	3,140	2,020	930	507	256	132	142	166

Calendar year 1960:

Max 367

Min 0.3

Mean 13.6

Ac-ft 9,830

Water year 1960-61:

Max 367

Min 1.1

Mean 16.0

Ac-ft 11,610

Peak discharge (base, 300 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	10a.m.	4.75	325	1-31	3a.m.	4.81	344
12-1	8a.m.	5.96	928	2-11	3a.m.	6.10	1,040
12-17	2p.m.	4.78	334				

SACRAMENTO RIVER BASIN

727

11-3733. Little Cow Creek near Ingot, Calif.

Location.--Lat 40°44'45", long 122°03'40", in SE 1/4 sec. 2, T.33 N., R.2 W., on right bank 1.8 miles northeast of Ingot and 7 miles southwest of Round Mountain.

Drainage area.--60.6 sq mi.

Records available.--March 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,140 ft (from topographic map).

Extremes.--Maximum discharge during water year, 5,140 cfs Dec. 1 (gage height, 14.81 ft); minimum daily, 6.4 cfs Oct. 4.
1957-61: Maximum discharge, 8,200 cfs Nov. 13, 1957 (gage height, 16.64 ft), from rating curve extended above 3,000 cfs; minimum daily, 4.1 cfs July 22, 1960.

Remarks.--No known storage or diversion above station.

Cooperation.--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	6.6	2360	39	660	102	224	144	100	14	7.3	8.7
2	6.8	6.8	524	36	839	99	221	134	118	13	7.5	9.0
3	6.8	7.7	228	35	563	94	230	126	93	14	7.1	8.4
4	6.4	7.7	119	34	343	89	239	119	85	14	7.4	8.4
5	7.6	9.1	81	34	258	143	232	116	81	14	7.7	8.2
6	21	13	62	34	235	118	209	134	73	14	8.1	7.7
7	14	19	52	34	215	99	189	125	68	13	8.4	7.4
8	12	16	47	39	402	330	174	108	62	12	8.4	7.0
9	10	15	42	65	2060	334	168	112	58	12	9.0	7.1
10	10	14	39	50	791	321	158	147	55	12	8.4	7.4
11	10	21	36	42	1960	266	151	268	53	12	8.6	*7.3
12	11	60	33	38	674	182	167	151	52	11	8.5	6.9
13	10	278	31	37	565	157	149	127	46	11	7.8	6.8
14	9.8	114	30	34	743	303	*137	115	41	9.3	7.4	7.1
15	9.8	50	33	34	817	454	130	112	38	8.0	7.2	7.7
16	9.3	*34	298	33	507	298	130	107	34	7.8	7.4	11
17	9.8	32	1350	32	379	520	132	102	32	7.5	7.9	12
18	*10	258	586	31	299	269	129	*97	30	9.1	8.1	11
19	8.4	51	323	31	253	479	116	103	27	9.4	8.6	9.3
20	8.4	35	176	*29	220	448	107	108	*25	8.8	9.5	8.9
21	8.4	30	124	28	194	288	113	104	23	8.5	8.5	8.2
22	8.4	26	100	28	176	255	172	100	23	7.5	8.1	8.1
23	7.2	31	81	33	159	263	423	91	23	7.8	8.2	8.1
24	8.9	58	70	33	147	841	296	84	20	7.7	8.0	7.8
25	8.0	755	64	31	137	487	202	82	18	*7.6	8.0	8.1
26	8.0	468	57	35	126	996	157	103	17	6.9	8.3	8.0
27	8.4	147	52	76	115	565	136	87	17	6.8	8.4	7.9
28	8.4	74	47	50	109	369	127	78	16	6.8	8.6	8.0
29	8.0	55	46	519	-	302	144	75	15	7.4	9.4	7.7
30	6.8	140	44	953	-	262	143	93	15	7.6	9.2	7.6
31	6.8	-	41	2,470	-	237	-	85	-	7.5	9.4	-
Total	285.6	2831.9	7176	4997	13946	9970	5305	3537	1358	308.0	254.4	246.8
Mean	9.21	94.4	231	161	498	322	177	114	45.3	9.94	8.21	8.23
Max	21	755	2,360	2,470	2,060	996	423	268	118	14	9.5	12
Min	6.4	6.6	30	28	109	89	107	75	15	6.8	7.1	6.8
Ac-ft	566	5,620	14,230	9,910	27,660	19,780	10,520	7,020	2,690	611	505	490
Calendar year 1960:			Max	2,360	Min	4.1	Mean	113	Acre-feet	81,570		
Water year 1960-61:			Max	2,470	Min	6.4	Mean	138	Acre-feet	99,600		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3740. Cow Creek near Millville, Calif.

Location.--Lat 40°30'20", long 122°13'55", in NE¼ sec. 32, T.31 N., R.3 W., on right bank 4.2 miles southwest of Millville and 4.3 miles downstream from Little Cow Creek.

Drainage area.--427 sq mi.

Records available.--October 1949 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from topographic map).

Average discharge.--12 years, 649 cfs (469,900 acre-ft per year).

Extremes.--Maximum discharge during year, 35,800 cfs Dec. 1 (gage height, 19.67 ft); minimum, 4.8 cfs July 26, 27.

1949-61: Maximum discharge, 45,200 cfs Dec. 27, 1951 (gage height, 21.55 ft); minimum, 1.0 cfs Aug. 22, 1960.

Remarks.--Records good. Numerous small diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	44	16,400	195	2,840	408	751	457	328	49	22	16
2	13	45	*3,320	184	4,270	401	715	453	461	46	15	17
3	18	44	1,670	177	2,590	386	715	408	393	45	16	16
4	18	41	844	172	1,500	371	725	389	367	49	12	15
5	20	48	580	*167	1,100	436	710	371	332	48	12	12
6	*65	54	442	165	952	509	670	412	308	45	14	11
7	64	62	354	165	892	412	630	496	292	*45	12	16
8	54	*83	315	174	*1,020	606	590	424	279	48	11	23
9	44	78	285	195	9,770	1,270	558	397	255	45	11	16
10	40	75	260	230	3,490	904	*536	457	241	43	*17	16
11	44	83	248	189	7,960	762	514	572	227	37	17	18
12	42	195	227	172	2,680	620	540	509	214	33	20	20
13	41	1,170	216	167	1,790	554	532	449	185	33	26	18
14	39	731	205	160	2,270	713	487	412	164	32	18	21
15	33	305	222	157	3,220	2,370	449	389	151	26	17	29
16	29	187	1,440	150	2,040	1,160	428	371	145	28	12	34
17	27	160	5,370	148	1,430	2,260	441	360	125	26	12	59
18	28	603	2,580	146	1,140	1,140	445	353	110	15	12	53
19	31	312	1,300	141	958	1,300	424	356	105	12	13	44
20	30	195	802	139	839	1,880	389	371	99	12	16	39
21	31	167	595	137	751	*1,090	401	374	96	15	21	40
22	31	153	486	134	680	916	532	356	89	17	18	37
23	32	146	404	144	605	922	1,500	335	87	20	16	30
24	37	200	351	157	563	2,320	915	308	80	17	16	31
25	37	3,210	315	144	527	1,900	680	292	70	12	18	35
26	40	3,110	289	148	487	2,350	545	325	67	10	14	25
27	45	859	263	273	457	2,180	483	349	58	7.3	17	18
28	45	379	242	273	428	1,430	449	298	56	11	20	23
29	42	*249	225	2,030	-	1,080	453	*279	51	10	26	25
30	39	391	211	3,380	-	922	474	328	51	18	*18	24
31	45	-	205	8410	-	817	-	371	-	25	21	-
Total	1,114	13,379	40,666	18,623	57,249	34,389	17,681	12,021	5,486	879.3	510	781
Mean	35.9	446	1,312	601	2,045	1,109	589	388	183	28.4	16.5	26.0
Max.	65	3,210	16,400	8,410	9,770	2,370	1,500	572	461	49	26	59
Min.	10	41	205	134	428	371	389	279	51	7.3	11	11
Ac-ft	2,210	25,540	80,660	36,940	113,600	68,210	35,070	23,840	10,880	1,740	1,010	1,550
Calendar year 1960:				Max	16,400	Min	1.1	Mean	488	Acre-feet 354,100		
Water year 1960-61:				Max	16,400	Min	7.3	Mean	556	Acre-feet 402,200		

Peak discharge (base, 10,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	12m	19.67	35,800	2-9	2p.m.	14.66	18,200
1-31	11a.m.	12.46	12,800				

SACRAMENTO RIVER BASIN

729

11-3741. Bear Creek near Millville, Calif.

Location.--Lat 40°31'50", long 122°06'30", in SE 1/4 sec.20, T.31 N., R.2 W., on right bank 10 feet downstream from bridge on State Highway 44 and 3.8 miles southeast of town of Millville.

Drainage area.--75.3 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 720 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,830 cfs Dec. 1 (gage height, 10.12 ft), from rating curve extended above 450 cfs; minimum, 2.6 cfs Sept. 9.

1959-61: Maximum discharge, that of Dec. 1, 1960; minimum, that of Sept. 9, 1961.

Remarks.--No storage or diversion above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.9	12	1350	34	* 340	* 78	171	61	54	8.4	6.9	4.0
2	7.8	12	404	32	545	77	155	60	78	8.2	6.9	4.1
3	6.5	* 12	207	30	316	73	143	54	59	10	6.8	4.3
4	6.7	12	125	30	207	72	133	51	48	9.9	5.5	4.2
5	7.1	12	91	30	157	101	122	* 49	43	9.9	5.8	4.7
6												
7	14	13	72	30	165	106	113	64	40	11	6.6	3.9
8	13	20	64	29	160	87	106	96	37	9.3	6.7	3.8
9	11	16	58	35	* 212	215	98	65	* 35	8.7	6.2	4.0
10	11	14	55	34	941	279	94	57	34	7.9	* 5.7	2.8
	11	13	52	* 32	* 442	212	90	59	32	7.8	5.6	3.4
11												
12	11	20	48	30	936	189	81	90	32	7.5	5.6	3.5
13	11	37	44	28	431	156	* 83	81	32	* 7.6	6.0	* 3.1
14	10	25	42	29	324	136	83	62	28	9.1	6.7	3.6
15	11	98	40	29	289	172	75	56	22	8.9	5.5	3.7
	10	47	41	28	431	420	70	52	22	8.6	5.3	4.1
16												
17	10	33	101	27	320	256	63	48	20	7.7	5.2	5.7
18	11	29	217	27	246	441	60	43	18	6.3	5.9	7.8
19	10	79	162	27	208	242	60	41	18	6.8	5.0	6.7
20	10	41	104	27	180	245	60	39	17	6.4	4.2	7.1
	10	31	82	26	157	339	58	40	15	6.5	5.6	6.4
21												
22	11	27	71	27	143	237	66	40	14	6.7	5.6	6.9
23	10	26	* 65	27	130	209	114	38	14	6.4	4.3	7.4
24	10	25	57	32	116	210	148	36	15	5.9	4.1	7.0
25	10	26	52	32	109	401	116	35	16	6.9	3.9	7.2
	11	384	48	28	100	334	88	34	15	7.1	4.8	6.4
26												
27	11	395	45	31	94	404	75	44	13	7.2	4.7	6.3
28	* 11	125	44	48	88	418	70	41	11	5.7	5.2	6.2
29	10	67	41	39	82	296	64	37	10	5.7	4.8	5.7
30	11	53	39	134		248	64	36	9.9	5.8	5.3	6.6
31	11	76	38	209		214	63	77	9.3	5.4	4.7	6.4
	11		35	995		188		71		6.5	4.3	
Total	316.0	2006	3894	2196	7869	7055	2786	1657	811.2	235.8	169.4	137.0
Mean	10.2	66.9	126	70.8	281	228	92.9	53.5	27.0	7.61	5.46	5.23
Max.	14	395	1,350	995	941	441	171	96	78	11	6.9	7.8
Min.	6.5	12	35	26	82	72	58	34	9.3	5.4	3.9	2.8
Ac-ft	627	3,980	7,720	4,360	15,610	13,990	5,530	3,290	1,610	468	336	311
Calendar year 1960:			Max	1,350	Min	4.2	Mean	61.2	Acre-feet	44,420		
Water year 1960-51:			Max	1,350	Min	2.8	Mean	79.9	Acre-feet	57,830		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3744. Middle Fork Cottonwood Creek near Ono, Calif.

Location.--Lat 40°23'25", long 122°31'15", in SE 1/4 sec. 3, T.29 N., R.6 W., on left bank 0.4 mile upstream from North Fork and 7.8 miles southeast of Ono.

Drainage area.--249 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 550 ft (from topographic map).

Average discharge.--5 years, 241 cfs (174,500 acre-ft per year).

Extremes.--Maximum discharge during year, 4,480 cfs Jan. 31 (gage height, 11.08 ft); minimum, 3.2 cfs Sept. 8, 9.
1956-61: Maximum discharge, 9,090 cfs Feb. 18, 1958 (gage height, 14.74 ft); minimum, 2.4 cfs Aug. 12, 13, 1959.

Remarks.--Records good except those for periods of shifting control or no gage-height record, which are fair.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	1.0	7.64	a 6.0	1.320	1.83	3.42	11.4	7.5	2.3	7.4	4.4
2	5.0	0.7	4.52	a 5.8	2.550	1.70	3.51	11.3	8.8	2.2	7.4	3.9
3	5.3	0.0	1.64	*a 5.5	1.300	1.55	3.66	10.5	8.8	2.0	7.0	3.9
4	5.6	0.0	1.12	5.3	8.50	1.47	3.54	10.1	9.0	2.0	6.7	4.1
5	5.8	0.7	8.5	5.3	6.30	1.53	3.20	0.0	8.5	2.0	6.7	3.9
6	7.4	1.1	6.0	5.2	5.18	1.75	2.87	10.0	8.0	2.0	6.7	3.7
7	* 1.2	1.2	6.1	5.1	4.56	1.45	2.54	9.9	7.7	2.0	7.4	3.9
8	1.1	1.3	5.6	5.0	4.20	1.37	2.28	9.5	7.2	1.9	8.0	3.7
9	0.7	1.3	5.3	5.0	* 1.420	1.72	2.07	9.5	6.8	1.8	9.4	3.7
10	1.0	1.3	5.0	5.0	1.300	1.81	* 1.92	10.0	6.4	1.6	8.4	3.7
11	1.0	1.4	4.9	4.9	e 1.340	2.05	1.75	10.0	6.0	1.6	7.4	3.7
12	1.0	1.7	4.6	4.7	e 1.060	2.19	1.74	9.9	6.0	1.4	7.4	3.7
13	1.0	2.6	4.5	4.5	e 7.80	2.12	1.64	9.5	5.8	1.4	7.0	3.7
14	1.0	3.1	4.4	4.5	e 6.40	2.30	1.48	9.0	5.3	* 1.4	8.4	3.7
15	9.4	2.6	5.2	4.4	e 5.84	* 4.48	1.38	8.7	5.2	1.3	7.4	4.1
16	9.0	* 2.2	1.36	4.3	e 4.72	3.87	1.30	8.6	4.9	1.2	6.3	6.0
17	9.0	2.2	* 1.060	4.2	e 3.93	* 7.20	1.26	8.4	4.6	1.2	5.7	1.2
18	9.0	2.8	a 8.00	4.1	e 3.45	5.56	1.22	8.2	4.5	1.1	5.4	9.2
19	9.4	4.5	a 6.00	4.0	e 3.08	5.10	1.17	8.2	4.2	0.4	5.7	7.2
20	9.7	2.9	a 5.00	3.9	e 2.82	* 5.56	1.14	8.6	3.9	8.7	6.0	6.3
21	9.7	2.4	a 3.50	3.8	e 2.60	4.93	1.17	9.0	3.7	8.4	5.7	6.0
22	9.7	2.4	a 2.50	3.7	e 2.46	4.72	1.42	8.6	3.5	8.4	* 5.4	5.5
23	9.7	2.2	a 2.00	4.1	e 2.32	5.21	1.30	8.4	3.3	8.4	5.1	5.2
24	9.7	3.5	a 1.70	4.1	* e 2.16	5.14	1.20	7.9	3.1	8.0	4.1	5.2
25	1.0	7.1	a 1.50	4.0	e 2.30	4.65	1.15	* 7.6	2.9	8.0	4.1	5.2
26	1.0	8.8	a 1.20	8.4	e 2.30	4.62	* 1.14	7.7	2.7	8.0	4.1	4.9
27	1.0	6.3	a 1.00	1.43	e 2.28	4.29	1.15	7.6	2.5	7.7	4.9	4.9
28	1.0	4.7	a 9.0	1.03	2.12	3.96	1.14	7.3	2.4	7.4	5.2	4.6
29	1.0	4.0	a 8.0	0.71	-	3.66	1.17	7.7	2.3	6.7	5.2	4.4
30	1.0	4.0	a 7.0	1.100	-	3.51	1.17	8.1	2.3	7.0	5.8	4.4
31	1.0	-----	a 6.5	2.510	-	3.42	-----	8.3	-----	7.4	5.8	-----
Total	280.9	832.4	6.843	6.075	120.21	10.481	5.510	270.4	1.578	407.5	197.2	148.8
Mean	9.06	27.7	22.1	196	676	338	184	90.1	52.6	13.1	6.36	4.96
Max.	12	88	1,060	2,510	2,550	729	366	114	90	23	9.4	12
Min.	4.8	9.0	44	37	212	137	114	73	23	6.7	4.1	3.7
Ac-ft	557	1,650	13,570	12,050	37,530	20,799	10,930	5,540	3,130	808	391	355
Calendar year 1960:				Max 5,870	Min 3.8	Mean 172		Acre-feet 124,800				
Water year 1960-61:				Max 2,550	Min 3.7	Mean 148		Acre-feet 107,200				

Peak discharge (base, 1,800 cfs).--Jan. 31 (10 a.m.) 4,480 cfs (11.08 ft); Feb. 9 (5 p.m.) 1,980 cfs (8.72 ft).

* Discharge measurement made on this day.

a No gage-height record.

e Shifting-control method used.

SACRAMENTO RIVER BASIN

731

11-3757. North Fork Cottonwood Creek near Igo, Calif.

Location.--Lat 40°26'32", long 122°32'57", in SE 1/4 sec. 21, T.30 N., R.6 W., near right bank on downstream side of bridge on Gas Point Road, 1.2 miles downstream from Huling Creek, 4.4 miles south of Igo, and 4.5 miles upstream from Middle Fork.

Drainage area.--88.7 sq mi.

Records available.--October 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 630 ft (from topographic map).

Average discharge.--5 years, 190 cfs (137,600 acre-ft per year).

Extremes.--Maximum discharge during year, 7,220 cfs Jan. 31 (gage height, 36.38 ft), from rating curve extended above 400 cfs on basis of a previous high-water rating; minimum daily, 0.9 cfs Nov. 4.

1956-61: Maximum discharge, 8,670 cfs Feb. 8, 1960 (gage height, 35.70 ft); minimum daily, that of Nov. 4, 1960.

Flood of Dec. 21, 1955, reached a peak discharge of 12,100 cfs by slope-area measurement at site 1.2 miles upstream (above Huling Creek).

Remarks.--Some storage for irrigation above station in Rainbow Lake (capacity, 4,800 acre-ft). Some flow diverted upstream to Clear Creek basin by Happy Valley Irrigation Canal.

Cooperation.--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	1.5	525	77	849	184	226	125	28	16	8.7	9.4
2	11	1.3	230	74	1,080	152	221	101	35	12	7.8	9.4
3	9.9	1.0	164	71	588	144	214	93	31	13	8.8	7.4
4	9.0	.9	123	66	411	140	206	91	29	12	8.7	8.8
5	8.7	1.1	84	66	310	177	195	92	28	16	9.2	8.4
6	10	1.9	72	66	271	172	170	103	25	16	9.6	8.6
7	19	2.8	69	65	239	160	141	99	24	17	9.7	7.7
8	19	2.8	65	67	258	185	112	95	21	17	9.0	8.7
9	18	2.6	63	66	1,020	173	108	95	20	15	12	8.4
10	18	2.8	63	65	674	159	*105	95	18	14	9.4	8.5
11	12	8.2	62	64	928	155	103	79	17	11	8.1	9.6
12	9.4	1.7	59	60	661	146	97	77	18	13	10	8.5
13	11	4.4	58	59	528	144	90	71	18	11	11	8.7
14	11	3.5	59	59	515	203	87	70	16	16	11	9.3
15	11	2.5	84	59	507	553	86	65	15	11	11	11
16	14	20	362	59	448	451	84	63	14	10	12	19
17	12	*19	686	58	389	694	81	60	13	9.6	12	29
18	12	31	360	58	349	440	77	60	12	10	10	20
19	*14	26	271	58	316	418	76	54	14	8.5	11	14
20	14	21	211	55	295	372	108	54	14	9.3	30	13
21	15	18	175	55	273	333	122	50	15	9.6	25	15
22	42	16	*158	56	259	317	153	48	15	9.0	24	13
23	40	16	141	60	252	305	149	47	*15	9.3	21	13
24	8.4	30	133	*59	240	385	144	*34	16	9.0	11	12
25	6.7	9.7	123	59	231	322	145	31	16	8.7	*7.2	11
26	5.8	72	116	111	224	474	141	31	15	*8.5	8.2	10
27	4.4	45	109	147	*219	*356	*141	30	15	8.6	10	11
28	3.0	40	104	99	211	279	135	28	15	8.3	11	11
29	3.0	35	98	1,340	-	253	131	29	16	8.1	11	11
30	2.8	72	93	948	-	240	130	31	16	9.1	9.5	11
31	1.9	-	79	2,800	-	227	29	-	-	8.9	9.1	-
Total	386.0	705.9	4,999	7,006	12,515	8,713	3,978	2,030	564	354.5	366.0	345.4
Mean	12.5	23.5	161	226	448	281	133	65.5	18.8	11.4	11.8	11.5
Max.	42	97	686	2,800	1,080	694	226	125	35	17	30	29
Min.	1.9	0.9	58	55	211	140	76	28	12	8.1	7.2	7.4
Ac-ft	766	1,400	9,920	13,900	24,880	17,280	7,890	4,030	1,120	703	726	685
Calendar year 1960:			Max	3,790	Min	0.9	Mean	133	Acre-feet	96,740		
Water year 1960-61:			Max	2,800	Min	0.9	Mean	115	Acre-feet	83,300		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3760. Cottonwood Creek near Cottonwood, Calif.

Location.--Lat 40°23'10", long 122°14'15", in NE¼ sec.7, T.29 N., R.3 W., on right bank 2 miles east of Cottonwood and 2.4 miles upstream from mouth.

Drainage area.--945 sq mi.

Records available.--October 1940 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 370 ft (from river-profile map).

Average discharge.--21 years, 830 cfs (600,900 acre-ft per year); median of yearly mean discharges, 610 cfs (442,000 acre-ft per year)

Extremes.--Maximum discharge during year, 16,700 cfs Jan. 31 (gage height, 10.80 ft); minimum, 60 cfs July 31.

1940-61: Maximum discharge, 52,300 cfs Mar. 1, 1941 (gage height, 15.4 ft), from rating curve extended above 30,000 cfs; minimum, 15 cfs for several days in September 1945.

Remarks.--Records good. Small diversions for irrigation above station. At times during irrigation season, Cottonwood Creek receives water above station from Sacramento River by way of Anderson-Cottonwood Canal.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	94	4,120	240	5,780	650	953	514	290	a111	62	66
2	80	97	*2,040	235	9,870	601	970	482	309	a106	64	67
3	84	100	989	*225	5,670	574	1,050	*445	328	a97	64	68
4	90	103	670	220	3,040	562	1,050	420	341	a97	62	66
5	84	103	496	215	2,040	580	1,020	406	362	a97	66	64
6	100	110	400	215	1,600	629	*910	425	345	a97	67	63
7	*116	103	345	210	1,320	574	789	450	301	*a97	67	63
8	126	107	312	205	1,170	568	702	420	276	a92	66	67
9	132	116	290	205	*5,260	629	650	415	262	a88	70	64
10	138	110	274	200	4,770	601	615	435	242	a78	66	64
11	126	116	268	200	4,820	594	587	435	236	a78	66	65
12	110	103	257	195	3,830	615	568	430	220	a78	63	66
13	94	126	246	190	2,610	601	556	402	197	73	64	66
14	80	126	240	185	2,250	629	544	370	189	72	65	69
15	75	*97	257	180	2,390	1,830	514	341	186	70	67	67
16	75	87	535	180	2,200	1,360	498	309	181	70	66	74
17	72	80	2,880	175	1,690	*2,830	482	309	168	71	66	109
18	72	84	2,610	170	1,370	1,810	487	305	156	71	66	141
19	72	97	1,470	170	1,180	1,480	470	320	150	68	66	130
20	84	94	998	165	1,040	*1,590	455	332	143	67	68	113
21	90	80	754	160	970	1,420	476	341	134	71	73	100
22	90	77	606	155	919	1,280	550	349	130	69	80	93
23	126	77	508	170	861	1,410	608	336	*123	69	73	85
24	110	77	442	170	*813	1,540	526	309	119	68	71	93
25	103	138	384	160	789	1,490	532	286	113	67	*69	96
26	97	315	356	284	749	1,510	532	294	109	70	69	94
27	90	224	323	692	718	1,530	532	305	100	69	70	81
28	84	165	306	430	688	1,280	520	290	103	70	69	76
29	84	138	290	2,240	-	1,120	514	298	107	67	70	71
30	97	148	274	4,400	-	1,040	526	305	111	65	68	72
31	97	-	262	9,030	-	979	-	294	-	62	67	-
Total	2,953	3,492	24,202	21,871	70,407	33,906	19,186	11,372	6,031	24,25	2,090	24,13
Mean	95.3	115	781	706	2,515	1,094	640	367	201	78.2	67.4	80.4
Max.	138	315	4,120	9,030	9,870	2,830	1,050	514	362	111	80	141
Min.	72	77	240	155	688	562	455	286	100	62	62	63
Ac-ft	5,860	6,930	48,000	43,380	139,700	67,250	38,050	22,560	11,960	4,810	4,150	4,790

Calendar year 1960:

Max 19,400

Min 50

Mean 570

Acres-feet 413,700

Water year 1960-61:

Max 9,870

Min 62

Mean 549

Acres-feet 397,400

Peak discharge (base, 7,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	10a.m.	8.08	8,090	2-9	5p.m.	7.79	8,350
1-31	2p.m.	10.80	16,700				

* Discharge measurement made on this day.

a No gage-height record.

11-3765. Battle Creek near Cottonwood, Calif.

Location.--Lat 40°23'50", long 122°08'05", in NW¼ sec.6, T.29 N., R.2 W., on left bank 6.3 miles upstream from mouth and 7.6 miles east of Cottonwood.

Drainage area.--362 sq mi.

Records available.--October 1940 to September 1961 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 421.47 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--21 years, 448 cfs (324,300 acre-ft per year).

Extremes.--Maximum discharge during year, 11,700 cfs Dec. 1 (gage height, 11.88 ft), from rating curve extended above 4,800 cfs; minimum, 49 cfs July 26.

1940-61: Maximum discharge, 12,800 cfs Feb. 6, 1942 (gage height, 11.85 ft); minimum not determined; minimum gage height, 1.20 ft June 25, 1949.

Maximum stage known, 15.8 ft Dec. 11, 1937, from floodmarks (discharge, 35,000 cfs, by slope-area measurement of peak flow).

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by four small powerplants and several small reservoirs above station. About 10 cfs diverted above station for irrigation. From 50 to 90 cfs bypasses station through Coleman Fish Hatchery.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 1

Dec. 1 to Sept. 30

2.3	134	5.0	1,490
2.6	216	6.0	2,290
3.0	351	7.0	3,320
3.5	580	8.5	5,440
4.0	845		

2.2	126
2.6	233
3.0	375
4.0	920
5.0	1,570
6.0	2,400

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	165	168	4,960	224	305	367	488	359	396	242	193	149
2	165	168	*1.100	230	1,610	359	488	371	450	239	188	149
3	165	174	565	233	914	355	523	*347	418	236	182	145
4	165	174	392	233	598	355	529	347	418	242	182	145
5	171	171	335	233	479	351	*513	347	409	227	182	141
6	*182	174	309	*233	534	351	484	375	401	227	185	149
7	190	179	274	233	460	339	459	396	396	224	182	145
8	179	179	295	239	450	351	436	367	396	218	182	145
9	171	179	271	248	2,060	418	423	359	379	213	182	145
10	179	184	264	248	1,080	363	418	379	375	210	182	149
11	179	196	258	242	2,080	355	418	396	379	207	182	153
12	179	241	245	236	1,100	351	427	384	371	207	182	153
13	176	545	258	230	788	343	436	375	367	207	188	149
14	179	321	245	227	710	398	405	351	371	210	160	149
15	174	*222	252	227	*1,020	826	392	359	384	207	177	153
16	165	204	335	227	974	549	396	367	384	204	177	161
17	165	204	418	227	710	918	409	375	375	204	174	181
18	165	277	392	224	609	513	423	384	355	199	*161	173
19	165	273	328	224	555	485	405	418	328	196	157	173
20	168	225	288	221	508	*791	392	441	313	201	153	169
21	165	213	271	221	479	534	384	427	305	196	145	169
22	163	207	264	221	464	493	418	423	305	193	153	169
23	165	199	258	227	436	560	405	414	*208	193	140	169
24	157	207	252	230	427	708	384	405	271	190	145	165
25	168	1,440	245	227	414	724	371	401	274	193	153	145
26	179	1,270	245	236	396	598	371	401	267	190	153	169
27	176	372	245	264	388	722	367	392	281	190	153	173
28	171	267	239	245	375	587	367	375	274	190	153	169
29	168	232	239	375	-	534	351	375	264	190	153	169
30	165	287	242	464	-	503	367	409	248	188	157	165
31	168	-	233	1,770	-	493	-	414	-	188	145	-
Total	5,292	9,152	14,517	9,119	20,941	15,594	12,649	11,933	10,452	6,421	5,219	4,738
Mean	171	305	468	294	748	503	422	385	348	207	168	158
Max.	190	1,440	4,960	1,770	2,080	918	529	441	450	242	193	181
Min.	157	168	233	221	305	339	351	347	248	188	145	141
Ac-ft	10,500	18,150	28,790	18,090	41,540	30,930	25,090	23,670	20,730	12,740	10,350	9,400

Calendar year 1960 :
Water year 1960-61 :

Max 4,960
Min 141

Mean 314
Mean 345

Acre-feet 221,600
Acre-feet 250,000

Peak discharge (base, 2,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	7p.m.	7.25	3,630	1-31	12m.	6.35	2,740
12-1	1p.m.	11.88	11,700	2-11	7a.m.	7.52	4,060

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 18 to Sept. 30.

11-3775. Paynes Creek near Red Bluff, Calif.

Location.--Lat 40°15'50", long 122°11'10", in SE $\frac{1}{4}$ sec.22, T.28 N., R.3 W., on right bank 0.4 mile upstream from mouth and 6.5 miles northeast of Red Bluff.

Drainage area.--92.5 sq mi.

Records available.--October 1949 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 360 ft (from topographic map).

Average discharge.--12 years, 74.4 cfs (53,860 acre-ft per year); median of yearly mean discharges, 66 cfs (47,800 acre-ft per year).

Extremes.--Maximum discharge during year, 8,780 cfs Dec. 1 (gage height, 10.56 ft); no flow many days July to September. 1949-61: Maximum discharge, that of Dec. 1, 1960; no flow at times in most years.

Remarks.--Records good. Diversions up to 10 cfs at times above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 30 to Nov. 13,
Feb. 9-11, Mar. 22-24, Aug. 6 to Sept. 30)

1.9	0	3.0	80
2.0	.1	3.5	193
2.1	.3	4.0	345
2.2	1.1	4.5	560
2.3	2.8	5.0	850
2.4	6.0	6.0	1,610
2.5	11	7.0	2,630
2.6	20	8.5	4,710
2.8	46		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.3	*4.100	20	442	40	102	22	14	2.0	0	0.1
2	.2	.3	713	19	1030	39	86	22	15	2.5	0	.1
3	.2	.3	370	19	483	38	75	20	14	2.5	0	0
4	.2	.3	193	18	269	36	66	20	14	3.0	0	0
5	*.3	.3	121	18	186	36	*59	*19	11	3.2	0	.1
6	.4	.4	82	*18	173	39	56	21	10	*3.5	0	.1
7	.4	*.5	62	16	156	35	52	25	9.4	4.1	0	.1
8	.3	.5	50	15	135	52	49	20	8.9	3.8	0	.1
9	.2	.5	43	15	784	173	48	19	8.4	3.8	0	0
10	.2	.5	39	14	*338	100	45	18	7.9	3.2	0	0
11	.2	.8	36	14	1180	76	40	17	7.4	2.8	0	.1
12	.2	1.8	33	14	496	67	40	17	6.0	2.5	0	0
13	.2	225	31	14	310	60	40	17	4.8	.3	.1	0
14	.2	115	30	14	245	120	39	16	4.4	.2	.1	0
15	.2	20	37	14	326	497	33	16	4.1	.1	.1	0
16	.2	13	123	14	291	240	27	15	4.4	0	.1	.1
17	.2	11	100	14	212	650	26	13	3.2	0	.1	.1
18	.3	15	64	14	163	278	26	10	1.6	0	.1	.1
19	.3	14	49	14	132	206	26	10	1.4	0	.1	.1
20	.3	11	42	13	108	380	26	10	1.5	0	.1	.1
21	.3	9.4	38	13	92	158	27	11	1.1	0	.1	.1
22	.3	8.4	33	13	75	*117	32	11	1.4	0	*.1	.1
23	.3	8.4	31	14	66	123	33	11	1.5	0	0	.1
24	.3	7.9	28	14	59	180	28	12	1.6	0	0	.1
25	.3	549	26	14	56	290	27	12	2.0	0	0	.1
26	.3	991	25	22	49	217	25	11	2.0	0	0	.1
27	.3	179	24	38	45	331	24	12	1.8	0	.1	.1
28	.3	75	22	26	42	242	21	11	2.0	0	.1	.1
29	.3	49	21	123	-	180	21	11	1.8	0	.1	.1
30	.2	88	21	185	-	146	21	13	2.1	0	.1	.1
31	.2	-	20	1360	-	121	-	14	-	0	.1	.1
Total	8.0	2395.6	6607	2133	7943	5267	1220	476	168.7	37.5	1.5	2.2
Mean	0.26	79.9	213	68.8	284	170	40.7	15.4	5.62	1.21	0.05	0.07
Max.	0.4	991	4,100	1,360	1,180	650	102	25	15	4.1	0.1	0.1
Min.	0.2	0.3	20	13	42	35	21	10	1.1	0	0	0
Ac-ft	16	4,750	13,100	4,230	15,750	10,450	2,420	944	335	74	3.0	4.4

Calendar year 1960

Max 4,100

Min 0

Mean 62.9

Acre-feet 45,650

Water year 1960-61

Max 4,100

Min 0

Mean 71.9

Acre-feet 52,080

Peak discharge (base, 1,200 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	10p.m.	6.41	1,990	1-31	1p.m.	6.52	2,100
12-1	1p.m.	10.56	8,780	2-11	9a.m.	7.06	2,700

SACRAMENTO RIVER BASIN

735

11-3780. Sacramento River near Red Bluff, Calif.

Location.--Lat 40°13'55", long 122°10'50", in SE $\frac{1}{4}$ sec. 34, T.28 N., R.3 W., on left bank at lower end of Iron Canyon, 0.5 mile downstream from Sevenmile Creek and 4.6 miles northeast of Red Bluff.

Drainage area.--9,300 sq mi, approximately, excluding Goose Lake basin.

Records available.--January 1892 to September 1961. Monthly discharges only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A. Published as "at Red Bluff" 1894-96, and as "at Jellys Ferry" 1895-1902.

Gage.--Water-stage recorder. Datum of gage is 253.18 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to January 1902, staff gage at site 16.2 miles upstream at different datum. January 1902 to December 1919, staff gage at several sites within 1 mile of present site at same datum.

Average discharge.--70 years, 11,430 cfs (8,275,000 acre-ft per year).

Extremes.--Maximum discharge during year, 86,200 cfs Dec. 1 (gage height, 18.53 ft); minimum, 4,700 cfs Dec. 15 (gage height, 1.22 ft). 1892-1961: Maximum discharge, 291,000 cfs Feb. 28, 1940 (gage height, 38.9 ft), from rating curve extended above 170,000 cfs on basis of velocity-area studies; minimum, 2,000 cfs Mar. 29, 1944 (gage height, -0.45 ft).

Remarks.--Records excellent. Flow regulated by Shasta Lake since Dec. 30, 1943 (see p. 720). Diversions, in addition to those on tributaries, for irrigation of about 22,000 acres between stations at Keswick and Red Bluff.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	4,270	6.0	18,700
2.0	6,470	8.0	26,500
3.0	9,150	11.0	40,800
4.0	12,100	16.0	69,000

Discharge, in cubic feet per second, water year October 1960 to September 1961													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	6,220	5,980	*50,500	4,980	22,700	15,200	10,100	*9,370	9,070	10,900	11,700	9,150	
2	*6,220	6,030	23,400	5,190	25,000	14,600	10,000	9,370	9,600	10,900	11,600	8,650	
3	6,240	6,000	14,100	5,150	18,900	14,500	9,920	9,150	9,580	*10,800	11,600	8,240	
4	6,240	6,000	7,590	5,150	12,500	14,500	9,720	9,010	9,550	10,800	11,600	8,210	
5	6,240	6,000	6,400	5,120	10,200	14,500	9,430	8,980	9,520	10,900	11,600	8,240	
6	6,470	6,050	*5,770	5,100	9,150	14,800	9,210	9,150	9,460	10,800	11,600	*8,270	
7	6,540	6,150	5,410	5,100	8,700	14,500	9,010	9,490	9,320	10,800	11,600	8,290	
8	6,540	6,170	5,230	5,100	8,180	14,500	8,590	9,210	9,230	11,200	11,600	7,780	
9	6,520	6,170	5,080	5,150	25,000	16,500	8,400	9,120	9,180	11,300	11,600	7,780	
10	6,470	6,170	4,980	5,190	23,600	*15,400	8,320	9,230	9,090	11,300	11,600	7,810	
11	6,440	6,270	4,910	5,150	30,200	15,200	8,270	9,430	9,070	11,200	11,600	7,780	
12	6,270	6,370	4,810	5,100	25,200	15,000	8,160	9,460	9,040	11,200	11,600	7,620	
13	6,120	8,540	4,760	5,060	20,900	14,900	8,270	8,870	8,930	11,200	11,600	7,240	
14	6,100	7,970	4,720	5,080	21,900	15,200	8,050	8,590	9,150	11,200	11,600	7,270	
15	6,030	5,750	4,850	5,040	23,700	21,500	7,970	8,480	9,320	11,200	11,600	7,270	
16	5,980	5,300	7,030	5,040	23,100	19,600	7,920	8,370	9,780	11,200	11,300	7,320	
17	5,930	5,320	16,400	5,000	20,400	23,400	7,860	8,350	9,750	11,200	10,700	7,060	
18	5,890	5,700	15,400	4,980	19,300	19,500	8,100	8,320	9,690	11,200	10,600	7,080	
19	5,860	5,700	10,500	4,950	18,400	17,800	8,670	8,350	9,720	11,500	10,600	7,060	
20	5,820	5,320	8,130	4,950	17,900	19,800	8,620	8,370	10,200	11,600	10,700	7,030	
21	5,820	5,190	7,010	4,950	17,500	17,800	8,730	8,430	10,500	11,600	10,700	6,900	
22	5,840	5,020	6,370	4,930	17,300	17,100	9,150	8,370	10,600	11,700	10,700	6,880	
23	5,860	4,870	5,980	5,020	16,900	17,100	10,100	8,350	11,000	11,700	10,700	6,820	
24	5,910	4,930	5,730	5,040	16,700	18,200	10,100	8,290	11,000	11,700	10,600	6,850	
25	5,930	9,020	5,520	5,000	16,600	18,900	9,150	8,180	11,000	11,700	10,400	6,820	
26	5,930	16,400	5,340	5,170	16,300	15,800	9,070	8,210	11,000	11,700	10,200	6,820	
27	5,960	7,730	5,190	5,910	16,200	16,200	8,400	8,320	10,900	11,600	10,000	6,800	
28	5,930	5,890	5,060	5,820	16,200	12,500	8,670	8,210	10,900	11,700	9,690	6,820	
29	5,930	5,510	4,980	7,660	-	11,400	8,870	8,670	11,000	11,700	9,690	6,800	
30	5,930	5,730	4,930	19,200	-----	11,000	9,370	8,290	10,900	11,700	9,210	6,800	
31	5,930	-----	4,850	32,600	-----	10,400	-----	8,590	-----	11,700	9,180	-----	
Total	189,110	93,250	270,930	202,880	518,630	497,300	265,200	270,580	297,050	509,000	550,700	221,460	
Mean	6,100	6,435	8,740	6,540	18,520	16,040	8,873	8,728	9,902	11,320	10,940	7,449	
Max.	6,540	16,400	50,500	32,600	30,200	23,400	10,100	9,490	11,000	11,700	11,700	9,150	
Min.	5,820	4,870	4,720	4,930	8,180	10,400	7,860	8,180	8,930	10,800	9,180	6,800	
Ac-ft	375,100	383,300	537,400	402,400	1,029,000	986,400	528,000	536,700	589,200	696,000	678,500	443,200	
Calendar year 1960 :				Max	63,700	Min	4,290	Mean	8,548	Acre-feet			6,205,000
Water year 1960-61 :				Max	50,500	Min	4,720	Mean	9,916	Acre-feet			7,179,000

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3760. Sacramento River near Red Bluff, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1			-	-	47	47	45	45	50	50	49	49	55	54	54	54	56	56	54	54	56	55	58	58
2			-	-	47	47	45	45	50	50	49	49	56	55	54	54	56	55	54	53	56	56	58	58
3			-	-	47	47	45	45	50	50	49	49	57	56	55	54	56	55	55	54	57	56	58	58
4			-	-	47	47	45	45	50	50	49	49	57	57	54	54	58	56	55	55	57	56	58	58
5			-	-	47	47	45	45	50	50	49	49	57	56	54	54	58	58	55	55	56	55	58	58
6			-	-	47	47	45	45	50	50	49	49	56	56	54	54	58	57	55	55	56	55	58	58
7			-	-	47	47	45	45	50	50	49	49	56	55	54	53	57	56	55	55	56	56	58	58
8			-	-	47	47	45	45	50	50	50	49	55	55	54	54	56	56	55	55	57	56	58	58
9			53	52	47	47	46	45	50	50	50	50	55	55	55	54	57	56	55	55	57	56	58	58
10			52	52	47	47	46	46	50	50	50	50	55	55	54	53	57	57	56	55	57	56	58	58
11			52	52	47	47	47	46	50	50	51	50	55	55	53	53	57	57	56	55	57	56	58	58
12			52	52	47	47	47	47	50	49	51	51	55	55	54	53	57	57	56	55	56	56	58	58
13			52	48	48	47	47	47	49	49	51	51	55	55	54	54	57	57	57	55	57	56	58	58
14			48	48	48	48	48	47	49	49	51	51	55	55	56	54	57	57	57	56	57	56	58	58
15			49	48	48	48	48	48	49	49	51	51	55	55	57	56	57	57	56	55	57	56	58	57
16			50	49	48	48	48	48	49	49	51	51	56	55	57	56	57	57	56	55	57	56	58	57
17			50	50	48	48	48	48	49	48	51	50	56	56	57	57	57	57	56	55	57	56	57	57
18			51	50	48	48	48	47	48	48	51	50	56	55	57	57	57	57	56	55	57	56	57	57
19			51	50	48	48	47	47	48	48	51	51	55	54	57	57	57	56	55	55	57	56	57	57
20			50	50	48	48	47	47	48	48	51	50	54	53	57	56	56	55	56	55	56	56	57	57
21			50	50	48	48	47	47	48	48	51	50	53	53	56	55	55	55	56	55	58	56	57	57
22			50	50	48	48	47	47	48	48	51	51	53	52	56	56	55	55	56	55	58	57	57	56
23			50	50	48	48	47	47	48	48	51	51	52	51	56	56	55	54	56	55	57	57	56	56
24			50	50	48	48	47	47	48	48	51	51	52	51	56	56	55	54	56	55	57	57	56	56
25			50	48	48	47	47	47	48	48	51	51	53	52	56	56	55	54	56	55	57	57	57	56
26			48	46	47	47	48	47	48	48	51	51	53	53	56	56	55	55	55	55	57	57	57	57
27			46	46	47	46	49	48	48	48	51	51	54	53	56	56	55	54	55	55	57	57	57	57
28			46	46	46	46	49	49	48	48	51	51	54	54	56	56	55	55	56	55	58	57	57	57
29			47	46	46	46	49	49	-----	-----	52	51	54	54	56	56	55	54	56	55	58	57	57	57
30			47	47	46	46	49	49	-----	-----	53	52	54	54	56	55	54	53	56	55	58	57	58	57
31			-----	-----	45	45	50	49	-----	-----	54	53	-----	-----	56	55	-----	-----	56	55	58	58	-----	-----
Avg	-	-	-	-	47	47	47	47	49	49	51	50	55	54	55	55	56	56	56	55	57	56	58	57

SACRAMENTO RIVER BASIN

737

11-3788. Red Bank Creek near Red Bluff, Calif.

Location--Lat 40°05'25", long 122°24'45", in SE $\frac{1}{4}$ sec.22, T.26 N., R.5 W., on road bridge near left bank, 0.1 mile downstream from unnamed tributary, 1.8 miles southeast of town of Red Bank, and about 13 miles west of Red Bluff.

Drainage area--93.5 sq mi.

Records available--October 1959 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 470 ft (from topographic map).

Extremes--Maximum discharge during year, 1,520 cfs Dec. 1 (gage height, 6.96 ft); no flow for several months.
1959-61: Maximum discharge, 2,270 cfs Feb. 7, 1960 (gage height, 7.80 ft); no flow for several months in each year.

Remarks--Some small storage ponds and possibly some diversions for irrigation upstream.

Cooperation--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			520	30	241	*12	9.9	2.9				
2			*55	33	951	12	9.9	2.4				
3			19	45	318	11	9.9	2.3				
4			14	35	156	11	9.2	*2.3				
5			11	34	91	11	8.1	1.8				
6			9.9	30	64	11	7.8	3.3				
7			8.2	27	47	9.9	7.3	4.3				
8			6.2	25	39	9.7	7.3	3.9				
9			6.5	29	412	11	7.3	3.5				
10			6.5	25	170	9.5	7.3	3.8				
11			5.3	23	265	9.1	7.0	4.1				
12			4.5	20	111	9.6	6.9	3.7				
13			4.2	*1.7	69	9.1	6.9	3.6				
14			3.7	1.5	57	17	6.7	3.6				
15			5.4	1.3	47	155	7.3	2.5				
16			13	14	41	41	6.3	2.0				
17			150	1.3	33	251	7.0	.9				
18			41	1.9	28	55	5.9	.1				
19			18	1.8	22	36	5.4	*0				
20			11	1.8	21	29	6.0	0				
21			9.5	1.7	21	24	6.5	0				
22			7.6	1.7	18	19	7.2	0				
23			6.2	2.5	15	18	7.2	0				
24			5.3	3.1	15	17	*6.0	0				
25			4.5	2.7	15	16	6.1	0				
26			4.5	299	14	22	4.5	0				
27			3.7	66	13	15	4.0	0				
28			3.9	15	13	13	3.5	0				
29			4.0	486	-	11	3.7	0				
30			3.5	*310	-	12	3.4	0				
31			2.9	*690	-	11	-	0				
Total	0	0	9680	19260	1307	8979	2013	510	0	0	0	0
Mean	0	0	31.2	62.1	118	29.0	6.72	1.65	0	0	0	0
Max.	0	0	520	690	951	251	9.9	4.3	0	0	0	0
Min.	0	0	2.9	1.3	13	9.1	3.4	0	0	0	0	0
Ac-ft	0	0	1,920	3,820	6,560	1,780	400	101	0	0	0	0
Calendar year 1960:			Max	1,010	Min	0	Mean	22.3	Acre-feet	16,160		
Water year 1960-61:			Max	951	Min	0	Mean	20.1	Acre-feet	14,580		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3790. Antelope Creek near Red Bluff, Calif.

Location.--Lat 40°12'10", long 122°07'05", in Rio De Los Berrendos Grant, on right bank 1.8 miles upstream from diversion dam of Los Molinos Mutual Water Co., 6.5 miles east of Red Bluff, Tehama County, and 9.1 miles upstream from mouth.

Drainage area.--124 sq mi.

Records available.--October 1940 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 360 ft (from topographic map). Prior to Sept. 18, 1954, at site 0.6 mile downstream at different datum.

Average discharge.--21 years, 143 cfs (103,500 acre-ft per year); median of yearly mean discharges, 126 cfs (91,200 acre-ft per year).

Extremes.--Maximum discharge during year, 9,830 cfs Dec. 1 (gage height, 12.06 ft), from rating curve extended above 2,800 cfs on basis of previous high-water rating; minimum daily, 27 cfs many days in August and September.

1940-61: Maximum discharge, 11,500 cfs Feb. 22, 1956 (gage height, 12.43 ft), from rating curve extended above 2,800 cfs on basis of slope-area measurement at gage height 11.78 ft; minimum, 14 cfs Oct. 1, 1940, Oct. 21, 1955, Nov. 23, 1956.

Flood in December 1937 reached a stage of about 22 ft from floodmarks, at former site and datum.

Remarks.--Records good. Small diversion above station for Red Bluff water supply during October to June of each year.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 1		Dec. 2 to Jan. 31		Feb. 1 to Sept. 30	
2.9	27	3.0	40	2.8	26
3.2	48	3.5	85	3.0	40
3.5	77	4.0	155	3.5	85
4.0	148	4.5	260	4.0	162
4.5	257	5.0	396	5.0	411
5.0	400	6.0	795	6.0	820
6.0	795	7.0	1,340	7.0	1,345
7.0	1,340	8.0	1,960		
8.0	1,960				
9.5	3,360				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	34	3,290	46	527	70	141	90	76	34	29	28
2	31	34	660	46	1,020	67	127	91	77	33	29	28
3	31	35	298	45	530	66	124	89	72	32	28	27
4	*31	35	164	*45	284	65	130	87	69	32	28	27
5	32	34	113	45	197	67	*132	*86	64	32	28	27
6	40	35	87	45	162	76	125	91	62	*33	28	27
7	37	37	75	45	142	67	117	90	61	33	28	28
8	34	36	68	49	130	80	108	85	60	32	29	28
9	33	*36	61	49	706	276	105	85	58	32	29	28
10	33	36	59	48	*550	*164	103	92	56	31	28	28
11	34	39	59	46	1,140	136	98	104	55	30	28	28
12	34	52	55	46	510	117	108	93	53	30	29	28
13	34	249	*53	45	313	104	108	90	50	30	28	28
14	33	150	51	44	243	138	97	87	46	30	27	29
15	32	61	53	44	333	473	92	87	45	30	27	30
16	32	57	89	44	292	270	93	87	44	30	27	32
17	32	46	120	44	223	605	97	89	42	30	27	35
18	32	62	104	43	184	277	101	91	41	29	*27	34
19	33	57	84	43	155	214	100	96	40	29	28	33
20	33	46	74	42	130	227	93	97	39	29	30	32
21	33	44	67	42	114	182	93	92	39	29	29	32
22	33	42	62	42	104	160	114	91	38	29	27	32
23	33	42	59	45	93	178	101	87	37	29	27	32
24	33	41	56	45	87	205	95	83	36	29	27	31
25	33	870	54	44	83	274	92	81	36	29	27	31
26	34	845	53	49	78	292	89	82	36	29	27	31
27	34	187	52	57	75	369	85	76	35	29	28	31
28	34	98	50	53	72	274	83	73	35	28	29	31
29	34	74	49	81	—	218	85	71	34	28	30	31
30	34	86	48	174	—	184	90	80	34	28	29	31
31	34	—	47	1,680	—	158	75	75	28	28	28	—
Total	1,031	3,500	6,214	3,216	8,477	6,053	3,126	2,698	1,470	936	870	898
Mean	33.3	117	200	104	303	195	104	87.0	49.0	30.2	28.1	29.9
Max.	40	870	3,290	1,680	1,140	605	141	104	77	34	30	35
Min.	31	34	47	42	72	65	83	71	34	28	27	27
Ac-ft	2,040	6,940	12,330	6,380	16,810	12,010	6,200	5,350	2,920	1,860	1,730	1,780

Calendar year 1960: Max 3,290 Min 31 Mean 98.9 Acre-feet 71,790
 Water year 1960-61: Max 3,290 Min 27 Mean 105 Acre-feet 76,350

Peak discharge (base, 2,200 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	7p.m.	8.87	2,670	1-31	1p.m.	9.34	3,170
12-1	1p.m.	12.06	9,830	2-11	9a.m.	8.61	2,430

SACRAMENTO RIVER BASIN

739

11-3795. Elder Creek near Paskenta, Calif.

Location--Lat 40°01'30", long 122°30'30", in NW¼ sec.14, T.25 N., R.6 W., on right bank 2.5 miles downstream from South Fork, 8 miles northeast of Flournoy, and 11 miles north of Paskenta.

Drainage area--95.8 sq mi.

Records available--October 1948 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage--Water-stage recorder. Altitude of gage is 720 ft (from topographic map).

Average discharge--13 years, 95.9 cfs (69,430 acre-ft per year); median of yearly mean discharge 73 cfs (52,800 acre-ft per year).

Extremes--Maximum discharge during year, 2,760 cfs Dec. 1 (gage height, 8.58 ft); minimum, 0.7 cfs Aug. 4, Sept. 8, 9.

1948-61: Maximum discharge, 11,700 cfs Feb. 24, 1958 (gage height, 13.90 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurements at gage heights 10.97 and 13.90 ft; no flow Aug. 6, Aug. 14 to Sept. 16, 1950, Aug. 16, 1959.

Remarks--Records good. No regulation or large diversion above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	2.2	*1,020	19	390	53	90	44	20	4.8	1.1	1.1
2	1.0	2.2	* 150	18	1,200	* 51	113	41	22	4.6	1.0	1.0
3	1.2	2.1	65	17	460	49	126	38	21	4.4	.9	.9
4	1.2	2.0	44	16	270	48	118	*36	22	4.6	.8	.9
5	* 1.4	2.4	31	*16	195	50	102	36	24	* 5.0	.8	.9
6	2.1	2.7	25	16	166	48	*91	36	20	5.3	1.0	.9
7	2.4	*2.9	21	15	130	43	84	34	20	5.0	1.0	.9
8	2.4	3.3	19	15	* 115	47	75	33	18	4.6	5.9	.8
9	2.1	3.5	17	15	550	47	70	33	17	3.9	3.2	.8
10	2.0	3.9	17	15	330	43	66	34	16	3.0	1.7	.8
11	2.1	4.5	16	14	449	47	61	34	16	2.7	1.4	.9
12	2.4	5.1	15	13	275	43	60	32	16	2.3	1.7	.9
13	2.4	19	14	13	226	42	57	29	14	2.5	1.7	.8
14	2.2	10	14	12	195	*64	54	28	13	2.3	2.0	1.0
15	2.0	6.8	* 21	12	186	176	51	27	11	2.0	1.5	1.2
16	1.6	6.0	134	12	162	174	50	26	10	1.7	1.3	1.7
17	1.6	6.3	444	11	*140	352	49	25	9.7	1.7	1.2	5.0
18	1.8	10	202	11	122	162	48	24	9.0	1.6	1.1	2.9
19	2.0	9.2	108	11	110	144	47	24	8.6	1.4	1.0	2.2
20	2.0	6.8	75	10	96	152	46	24	8.3	1.3	1.3	1.7
21	2.1	6.3	60	10	89	126	48	25	7.7	1.2	* 1.1	1.6
22	2.1	6.0	50	10	82	126	52	24	7.5	1.2	1.1	1.5
23	2.1	6.3	44	14	* 76	142	48	23	7.2	1.2	1.0	1.5
24	2.2	20	38	12	72	134	45	22	6.9	1.2	1.0	1.4
25	2.4	41	35	13	69	120	42	20	6.1	1.2	.9	1.3
26	2.6	46	31	392	63	115	43	22	5.8	1.2	1.0	1.2
27	2.2	23	28	164	60	104	43	21	5.5	1.1	1.2	1.2
28	2.2	16	26	83	57	93	42	20	5.5	1.0	1.2	1.2
29	2.1	13	24	653	-	85	43	20	6.1	.9	1.2	1.1
30	2.1	38	22	422	-----	84	43	30	5.3	.9	1.3	1.1
31	2.2	-----	21	1,070	-----	85	-----	23	-----	1.0	1.2	-----
Total	61.2	326.5	2,831	3,124	6,335	3,049	1,907	888	379.2	76.8	43.8	40.4
Mean	1.97	10.9	91.3	101	226	98.4	63.6	28.6	12.6	248	1.41	1.35
Max.	2.6	46	1,020	1,070	1,200	352	126	44	24	5.3	5.9	5.0
Min.	1.0	2.0	14	10	57	42	42	20	5.3	0.9	0.8	0.8
Ac-ft	121	648	5,620	6,200	12,570	6,050	3,780	1,760	752	152	87	80

Calendar year 1960:

Max 3,080

Min 0.6

Mean 66.3

Acre-feet 48,120

Water year 1960-61:

Max 1,200

Min 0.8

Mean 52.2

Acre-feet 37,820

Peak discharge (base, 1,200 cfs)

* Discharge measurement made on this day.

Date	Time	Gage Height	Discharge	Date	Time	Gage Height	Discharge
12-1	6a.m.	8.58	2,760	2-2	9a.m.	8.50	2,670

SACRAMENTO RIVER BASIN

11-3805. Elder Creek at Gerber, Calif.

Location.--Lat 40°03'05", long 122°09'55", in Saucos Grant, on right bank 1.0 mile west of Gerber, Tehama County, and 3.5 miles upstream from mouth.

Drainage area.--142 sq mi.

Records available.--October 1949 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 236.46 ft above mean sea level (from Bureau of Reclamation bench mark).

Average discharge.--12 years, 102 cfs (73,840 acre-ft per year); median of yearly mean discharges, 77 cfs (55,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,960 cfs Feb. 2 (gage height, 7.01 ft); no flow for several months.
1949-61: Maximum discharge, 11,000 cfs Feb. 19, 1958 (gage height, 14.40 ft); no flow for several months each year.

Remarks.--Records good except those for periods of no gage-height record or staff-gage readings, which are fair. Many diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			1,020	13	500	55	83	37	18	.5		
2			* 267	11	1,370	* 51	98	38	21	.5		
3			104	9.2	609	49	127	32	18	.4		
4			65	11	332	48	125	* 30	16	.4		
5	(*)		41	* 10	242	44	107	26	16	* .3		
6			27	10	196	51	* 89	26	16	.3		
7		(*)	18	10	167	44	81	30	12	.2		
8			11	9.8	* 132	41	70	26	12	.2		
9			9.8	9.8	615	49	62	24	9.0	.1		
10			7.1	9.2	418	42	55	24	8.4	.1		
11			7.7	9.2	524	39	50	24	6.6	0		
12			5.0	8.6	331	44	48	24	6.6	0		
13			* 5.0	7.4	255	41	61	21	5.5	0		
14			6.5	8.0	221	* 41	81	25	4.2	0		
15			3.6	8.0	201	211	76	* 19	** 3.0	0		
16			10	8.0	183	115	67	19	2.6	0		
17			360	7.4	* 152	* 444	62	18	2.6	0		
18			231	7.4	134	239	57	18	2.6	0		
19			115	6.8	117	173	60	17	2.6	0		
20			71	6.8	105	179	35	16	2.6	0		
21			53	5.6	95	153	38	19	2.6	0		
22			43	5.6	85	135	57	19	2.6	0		
23			36	8.6	* 77	153	44	19	2.6	0		
24			33	9.2	74	151	40	18	2.5	0		
25			28	8.0	70	141	* 37	16	2	0		
26			23	311	65	122	35	13	1.5	0		
27			19	174	63	115	* 35	14	1	0		
28			19	78	55	98	35	15	** .8	0		
29			16	666	—	88	35	12	.7	0		
30			16	628	—	82	38	15	.6	0		
31			15	1,090	—	82	—	32	—	0		
Total	0	0	2,685.7	3,164.6	7,388	3,320	1,888	686	202.2	3.0	0	0
Mean	0	0	86.6	102	264	107	62.9	22.1	6.74	0.10	0	0
Max.	0	0	1,020	1,090	1,370	444	127	38	21	.5	0	0
Min.	0	0	3.6	5.6	55	39	35	12	0.6	0	0	0
Ac-ft	0	0	5,330	6,280	14,650	6,590	3,740	1,360	401	6.0	0	0
Calendar year 1960:			Max 3,120		Min 0	Mean 63.1	Acres-feet 45,680					
Water year 1960-61:			Max 1,370		Min 0	Mean 53.0	Acres-feet 38,360					

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	11a.m.	6.43	2,610	2-2	unknown	7.01	2,960
1-31	unknown	—	2,320				

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this date.

Note.--No gage-height record June 23 to July 10. Discharge computed from once-daily staff-gage reading Dec. 7-16, Dec. 25 to Jan. 25, Feb. 28 to Mar. 14, Apr. 8-13, Apr. 16 to June 23.

SACRAMENTO RIVER BASIN

741

11-3815. Mill Creek near Los Molinos, Calif.

Location.--Lat 40°03'17", long 122°01'23", in NE 1/4 sec. 6, T.25 N., R.1 W., on right bank 1/2 miles northeast of Los Molinos and 5.5 miles upstream from mouth.

Drainage area.--134 sq mi.

Records available.--September 1909 to August 1913 (fragmentary), October 1928 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 380 ft (from topographic map). September 1909 to September 1913 staff gage at site 0.3 mile downstream at different datum.

Average discharge.--33 years (1928-61), 288 cfs (208,500 acre-ft per year).

Extremes.--Maximum discharge during year, 4,450 cfs Jan. 31 (gage height, 8.55 ft); minimum, 87 cfs Sept. 30.

1928-61: Maximum discharge, about 23,000 cfs Dec. 11, 1937 (gage height, 23.4 ft, from floodmarks), from rating curve extended above 3,900 cfs on basis of slope-area studies; minimum, 49 cfs Dec. 13, 1932.

Remarks.--Records good. No storage or large diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30	
1.2	72	1.2	82
2.0	246	2.0	272
3.0	530	3.0	530
4.0	925	4.0	925
5.0	1,430	5.0	1,430
6.5	2,560		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	92	2120	134	938	193	342	301	344	207	114	98
2	90	92	890	132	1320	195	379	294	407	205	112	96
3	88	94	411	130	783	193	464	286	376	*198	110	96
4	*90	94	268	*128	492	188	*494	291	397	193	110	94
5	96	94	209	128	384	195	451	282	369	186	110	94
6	138	96	176	128	334	198	399	291	382	178	110	94
7	134	104	160	128	*306	186	374	289	384	171	130	94
8	107	100	156	136	291	214	339	274	394	169	123	94
9	100	*98	154	145	1150	483	334	286	366	162	130	91
10	98	98	145	154	1040	282	325	320	369	159	116	91
11	98	111	141	145	1320	258	315	330	384	154	110	91
12	98	156	*134	141	767	241	362	306	346	150	110	91
13	96	293	136	138	527	*226	330	301	374	150	116	91
14	94	234	134	136	451	258	301	301	384	147	107	91
15	92	147	136	134	546	624	291	*325	397	145	105	91
16	92	130	185	132	469	420	310	337	397	142	103	96
17	92	130	298	130	397	714	356	352	386	138	103	100
18	92	212	337	130	349	399	376	384	369	133	*100	100
19	92	167	263	128	313	344	325	441	337	133	103	98
20	92	136	216	126	289	354	291	451	327	130	107	96
21	92	132	193	126	270	318	291	402	320	128	103	94
22	90	126	180	126	262	320	306	417	318	126	100	94
23	90	121	176	130	243	420	279	394	306	126	98	94
24	92	132	167	132	229	428	263	382	291	126	98	91
25	92	1220	160	130	219	415	263	384	284	123	96	89
26	94	1030	156	143	210	399	265	402	277	121	98	89
27	94	283	152	152	202	415	267	337	267	119	98	89
28	94	185	145	147	198	366	270	330	250	119	100	89
29	94	158	141	191	—	334	284	332	226	116	110	89
30	92	159	138	324	—	322	291	337	214	116	103	89
31	92	—	136	2220	—	325	—	320	—	114	100	—
Total	2987	6224	8413	6504	14299	10227	9937	10479	10242	4584	3333	2794
Mean	96.4	207	271	210	511	330	331	338	341	148	108	93.1
Max.	138	1,220	2,120	2,220	1,320	714	494	451	407	207	130	100
Min.	88	92	134	126	198	186	263	274	214	114	96	89
Ac-ft	5,920	12,350	16,690	12,900	28,360	20,280	19,710	20,780	20,310	9,090	6,610	5,540

Calendar year 1960: Max 3,070 Min 88 Mean 244 Acra-feet 176,900
 Water year 1960-61: Max 2,220 Min 88 Mean 247 Acra-feet 178,500

Peak discharge (base, 1,500 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-25	6p.m.	6.88	2,870	1-31	12m.	8.55	4,450
12-1	11a.m.	8.26	4,160	2-11	8a.m.	6.26	2,370

SACRAMENTO RIVER BASIN

11-3820. Thomas Creek at Paskenta, Calif.

Location.--Lat 39°52'55", long 122°33'05", in NW¼ sec.4, T.23 N., R.6 W., on left bank 0.25 mile upstream from Digger Creek and 0.3 mile upstream from highway bridge at Paskenta.

Drainage area.--188 sq mi.

Records available.--October 1920 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Published as Thomas Creek at Paskenta prior to 1943.

Gage.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map). Prior to Oct. 1, 1930, staff gage at site 0.3 mile downstream at different datum. Oct. 1, 1930, to Dec. 28, 1938, water-stage recorder at site 1,300 ft upstream and Dec. 29, 1938, to June 20, 1942, at site 1,000 ft upstream at different datums. June 21, 1942, to Sept. 30, 1959, at datum 1.75 ft higher.

Average discharge.--41 years, 267 cfs (193,300 acre-ft per year).

Extremes.--Maximum discharge during year, 4,990 cfs Jan. 31 (gage height, 8.39 ft); minimum, 1.5 cfs Sept. 13.

1921-61: Maximum discharge, 23,500 cfs Dec. 21, 1955 (gage height, 13.89 ft, present datum), from rating curve extended above 11,000 cfs; no flow at times in many year.

Remarks.--Records good. No storage or large diversions above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	4.1	*1.300	80	1.140	200	609	368	154	25	4.4	2.2
2	2.2	4.1	* 4.58	72	1.980	*196	826	340	175	22	4.0	2.1
3	2.2	4.1	1.96	69	1.190	189	918	300	175	20	4.0	2.0
4	2.2	4.1	1.35	67	7.40	179	840	*272	212	20	3.7	2.0
5	*2.2	4.4	1.05	*65	565	183	699	249	200	*20	3.7	2.0
6	2.8	4.7	89	64	477	189	*567	240	171	20	3.7	1.9
7	3.6	*5.0	80	62	403	167	489	228	158	19	8.2	1.9
8	4.1	5.0	76	64	*354	173	402	216	145	18	1.1	1.9
9	4.1	5.0	72	62	1.600	186	379	220	135	15	8.7	1.9
10	4.1	5.3	71	78	1.130	186	340	262	124	14	7.4	1.7
11	4.4	5.9	67	67	1.210	214	310	267	121	13	6.0	1.7
12	4.7	7.1	64	64	833	218	330	258	118	12	5.2	1.6
13	4.7	22	71	61	698	218	285	249	110	13	7.4	1.6
14	4.4	21	78	57	716	*299	267	240	104	11	5.2	1.8
15	4.1	14	*80	54	779	565	249	240	104	10	4.4	2.1
16	4.1	12	190	53	692	450	262	240	99	9.1	4.0	2.8
17	4.1	12	1.860	51	*587	510	285	244	94	8.7	3.1	5.6
18	4.1	85	1.100	50	494	403	267	262	86	8.2	3.1	5.6
19	4.1	44	592	48	429	472	236	262	77	7.4	3.1	5.6
20	4.1	23	369	47	388	626	216	276	72	6.9	3.1	5.2
21	4.1	17	278	47	364	538	212	258	66	6.5	*2.8	5.6
22	3.8	22	229	47	345	638	216	236	61	6.5	2.8	5.6
23	3.8	16	196	51	*308	805	208	212	55	6.0	2.5	5.6
24	3.8	277	173	67	282	710	196	196	50	5.6	2.2	5.6
25	3.8	421	149	59	261	604	186	189	44	5.6	2.2	5.6
26	4.1	204	132	392	241	565	212	189	39	5.2	2.2	5.6
27	4.1	91	117	253	225	532	262	175	35	4.8	2.1	5.2
28	4.1	65	105	151	211	477	295	164	32	4.4	2.2	5.2
29	3.8	52	97	509	-	450	374	164	31	4.4	3.7	4.8
30	3.8	56	89	609	-	482	396	164	26	4.0	2.5	4.0
31	4.1	-	83	2,900	-	548	-	158	-	4.0	2.2	-
Total	115.6	1512.8	8.701	6.320	18.642	12.172	11.333	7.338	3.073	349.3	130.8	106.0
Mean	3.73	50.4	281	204	666	393	378	237	102	11.3	4.22	3.53
Max.	4.7	421	1,860	2,900	1,980	805	918	368	212	25	11	5.6
Min.	2.0	4.1	64	47	211	167	186	158	26	4.0	2.1	1.6
Ac-ft	229	3,000	17,260	12,540	36,980	24,140	22,480	14,560	6,100	693	259	210

Calendar year 1960:

Max 11,300

Min 1.8

Mean 243

Acre-feet 176,500

Water year 1960-61:

Max 2,900

Min 1.6

Mean 191

Acre-feet 138,500

Peak discharge (base, 1,600 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	8a.m.	7.02	2,810	2-2	1p.m.	7.37	3,000
12-17	10a.m.	6.88	2,130	2-9	3p.m.	7.06	2,520
1-31	12m	8.39	4,990				

11-3835. Deer Creek near Vina, Calif.

Location.--Lat 40°00'50", long 121°56'50", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.23, T.25 N., R.1 W., on left bank 0.5 mile upstream from concrete diversion dam and 7.9 miles northeast of Vina.

Drainage area.--200 sq mi.

Records available.--October 1911 to December 1915, March 1920 to December 1937, January 1939 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 479.5 ft above mean sea level (river-profile survey). Prior to Oct. 9, 1928, staff gage at site 0.8 mile downstream at different datum. Oct. 9, 1928, to Jan. 19, 1939, water-stage recorder at present site at datum 2.64 ft higher.

Average discharge.--43 years, 301 cfs (217,900 acre-ft per year).

Extremes.--Maximum discharge during year, 4,690 cfs Dec. 1 (gage height, 8.35 ft); minimum daily, 76 cfs several days in September. 1911-15, 1920-37, 1939-61: Maximum discharge, 23,800 cfs Dec. 10, 1937 (gage height, 19.2 ft, present datum, from floodmarks), from rating curve extended above 7,000 cfs on basis of velocity-area studies; minimum, 43 cfs Dec. 13, 1932.

Remarks.--Records excellent. No storage or large diversions above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30	
2.4	78	2.3	62
2.6	114	2.6	114
3.0	210	3.0	209
3.5	375	3.5	365
4.0	590	4.0	565
5.0	1,180	5.0	1,160
6.0	1,970	6.0	1,970
7.0	2,970		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	85	2550	122	1060	204	416	292	212	103	83	81
2	78	85	1150	120	1280	204	436	298	212	101	83	80
3	78	86	543	116	926	204	492	276	199	*101	83	78
4	*78	88	345	*116	592	196	*516	267	191	99	83	76
5	81	85	261	112	456	199	488	258	180	99	81	76
6	114	88	207	114	382	201	*436	270	176	99	85	78
7	122	95	180	116	*354	188	404	279	168	97	86	78
8	95	95	168	120	320	209	368	252	166	97	85	78
9	90	*88	156	131	1200	529	358	249	158	95	97	76
10	88	88	144	151	1250	340	337	286	156	95	92	78
11	88	95	144	137	1490	298	324	308	151	93	85	78
12	90	166	*133	131	978	276	348	308	151	93	85	78
13	88	341	129	127	685	*258	362	289	144	93	83	78
14	86	207	127	124	560	292	317	270	140	93	81	78
15	86	135	129	122	650	794	295	*264	135	92	80	80
16	86	120	180	120	570	570	295	258	131	92	*81	81
17	86	122	314	118	484	936	304	252	128	90	80	90
18	86	233	371	116	424	552	320	249	124	90	80	88
19	86	196	300	114	372	472	311	255	122	90	80	81
20	86	142	248	112	340	492	286	252	122	88	85	80
21	86	127	216	112	314	440	289	249	117	88	83	80
22	86	122	194	112	301	428	348	240	115	88	81	80
23	86	114	180	116	279	574	308	231	113	88	80	80
24	85	137	170	118	258	592	295	223	109	88	78	78
25	85	960	160	118	249	583	301	215	109	86	78	76
26	86	1060	153	127	231	547	301	209	109	85	78	76
27	86	338	146	140	220	542	282	206	107	85	80	78
28	85	222	140	135	212	484	276	196	105	83	81	78
29	85	183	133	168	—	448	282	191	105	83	86	76
30	85	189	131	296	—	420	298	201	103	83	85	76
31	85	—	127	2350	—	416	—	229	—	83	83	—
Total	2710	6092	9529	6231	16437	12888	10393	7822	4258	2840	2571	2369
Mean	87.4	203	307	201	587	416	346	252	142	91.6	82.9	79.0
Max.	122	1,060	2,550	2,350	1,490	936	516	308	212	103	97	90
Min.	78	85	127	112	212	188	276	191	103	83	78	76
Ac-ft	5,380	12,080	18,900	12,360	32,600	25,560	20,610	15,510	8,460	5,630	5,100	4,700

Calendar year 1960:

Max 4,390

Min 76

Mean 232

Acre-feet 158,500

Water year 1960-61:

Max 2,550

Min 76

Mean 231

Acre-feet 166,900

Peak discharge (base, 2,500 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	1p.m.	8.35	4,690	1-31	12m.	7.98	4,170

SACRAMENTO RIVER BASIN

11-3840. Big Chico Creek near Chico, Calif.

Location.--Lat 39°46'35", long 121°45'10", in Arroyo Chico Grant, on right bank 1.8 miles upstream from golf clubhouse in Bidwell Park, 2.6 miles upstream from Lindo Channel, and 7 miles northeast of Chico, Butte County.

Drainage area.--67.9 sq mi.

Records available.--May 1930 to September 1961. Prior to October 1952, published as Chico Creek near Chico.

Gage.--Water-stage recorder. Altitude of gage is 300 ft (from topographic map). Prior to Oct. 1, 1955, at site 0.6 mile downstream at different datums.

Average discharge.--31 years, 139 cfs (100,600 acre-ft per year); median of yearly mean discharges, 110 cfs (79,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,920 cfs Jan. 31 (gage height, 7.22 ft); minimum, 14 cfs July 20.

1930-61: Maximum discharge, 8,260 cfs Dec. 10, 1937 (gage height, 16.6 ft, site and datum then in use), from rating curve extended above 5,000 cfs on basis of rating at cable gage and velocity-area studies; minimum, 10 cfs Dec. 11, 1932, Aug. 15, 1939, Sept. 18, 1947.

Remarks.--Records good. No storage or large diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.1	18	4.0	420
2.3	38	5.0	800
2.5	62	6.0	1,270
3.0	143	7.0	1,800
3.5	265		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	23	708	40	560	68	173	73	53	27	22	21
2	20	23	539	39	448	65	151	72	48	26	22	20
3	20	23	307	39	361	63	137	66	46	26	21	20
4	20	24	176	38	262	62	126	62	43	26	21	20
5	21	24	121	36	192	62	117	59	41	26	21	20
6	*30	24	93	35	160	70	110	62	41	27	22	20
7	36	29	76	36	141	61	101	65	40	26	22	21
8	24	28	66	41	128	66	93	59	39	26	22	22
9	23	25	59	42	599	122	86	57	38	25	22	21
10	23	25	54	42	600	112	82	*62	38	24	21	21
11	23	33	52	40	580	107	78	66	38	24	21	20
12	23	52	47	39	518	101	*80	72	36	24	21	25
13	22	125	46	38	370	94	79	66	35	24	21	20
14	22	80	*43	36	*280	*93	72	62	34	24	21	21
15	22	54	44	35	292	335	66	59	32	23	21	21
16	22	*42	82	35	277	319	63	56	32	23	21	22
17	22	40	160	*34	232	427	61	54	31	22	21	26
18	22	77	149	33	197	328	59	52	31	*22	21	24
19	22	61	121	34	166	274	59	49	30	22	21	22
20	22	48	101	33	143	295	58	49	*30	22	22	22
21	22	42	86	32	126	248	62	49	29	22	22	22
22	22	39	76	31	114	224	94	48	28	22	22	22
23	22	36	68	34	104	271	88	47	29	22	21	22
24	22	36	61	34	96	286	82	46	28	22	*21	22
25	23	233	58	32	88	337	84	44	28	22	21	22
26	23	412	56	40	84	337	84	43	28	22	21	22
27	24	180	53	43	76	355	80	43	28	22	22	22
28	23	104	49	39	72	322	76	43	28	21	22	22
29	23	78	46	64	-	277	73	40	28	21	22	22
30	23	73	*43	196	-	234	73	43	28	21	22	22
31	23	-	41	1,290	-	201	-	47	-	22	22	-
Total	709	2093	3,681	2,580	7,266	6,216	2,647	1,715	1,038	728	665	649
Mean	22.9	69.8	119	83.2	260	201	88.2	55.3	34.6	23.5	21.5	21.6
Max.	36	412	708	1,290	600	427	173	73	53	27	22	26
Min.	20	23	41	31	72	61	58	40	28	21	21	20
Ac-ft	1,410	4,150	7,300	5,120	14,410	12,330	5,250	3,400	2,060	1,440	1,320	1,290
Calendar year 1960:				Max 2,300	Min 18		Mean 94.0			Acra-feet 68,260		
Water year 1960-61:				Max 1,290	Min 20		Mean 82.2			Acra-feet 59,480		

Peak discharge (base, 1,600 cfs).--Jan. 31 (2 p.m.) 1,920 cfs (7.22 ft).

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

745

11-3870. Stony Creek near Fruto, Calif.

Location.--Lat 39°40'15", long 122°31'05", in SW 1/4 sec. 15, T. 21 N., R. 6 W., on right bank 0.3 mile downstream from Grindstone Creek and 6.5 miles northwest of Fruto.

Drainage area.--598 sq mi.

Records available.--January 1901 to October 1912, October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from topographic map). Prior to Oct. 6, 1912, staff gage at site 1.0 mile downstream at different datum.

Average discharge.--12 years, 723 cfs (523,400 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 4,740 cfs Dec. 1 (gage height, 8.00 ft); minimum, 2.5 cfs Nov. 12.

1901-12, 1960-61: Maximum discharge observed, 36,000 cfs Feb. 2, 1909 (gage height, 16.3 ft, site and datum then in use); no flow July 5-13, Oct. 25, 26, 1901.

Remarks.--Records good except those for period of no gage-height record, which are fair. Many diversions above station for irrigation. Flow regulated by East Park Reservoir beginning in 1910 (usable capacity, 50,620 acre-ft) and by Stony Gorge Reservoir beginning in 1928 (usable capacity, 50,100 acre-ft).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 2

Feb. 2 to Sept. 30

2.1	2.0	3.5	295	2.6	25	4.0	440
2.2	7.0	4.0	510	2.8	50	5.0	1,060
2.3	15	5.0	1,090	3.0	89	6.0	1,940
2.4	25	6.0	1,940	3.5	235	7.0	3,140
2.6	53	7.0	3,140				
3.0	135						

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	278	86	1840	47	872	146	588	364	364	346	390	298
2	253	74	423	41	1970	140	648	377	298	359	372	302
3	225	98	171	38	921	121	690	359	263	368	377	290
4	250	*40	104	35	535	116	690	359	173	386	386	278
5	270	42	72	35	413	129	648	386	132	408	359	270
6	220	41	56	34	338	143	588	372	143	436	326	298
7	130	34	47	32	286	124	530	350	218	475	310	306
8	100	38	41	32	242	132	485	235	298	436	314	314
9	85	50	37	30	1120	176	455	204	404	390	310	306
10	110	49	34	34	721	164	445	224	404	377	338	318
11	160	26	34	33	806	188	422	252	377	342	318	338
12	230	40	29	32	730	191	400	263	390	368	298	290
13	260	26	*28	29	440	179	*346	278	418	395	306	278
14	320	*19	29	29	*654	207	330	294	436	408	326	294
15	380	13	37	28	762	436	314	342	426	413	330	263
16	320	10	160	*28	774	*359	314	436	408	377	346	222
17	250	86	1150	26	696	636	314	450	395	395	390	83
18	330	42	689	25	582	535	314	436	359	418	334	42
19	330	29	359	24	495	540	359	422	342	390	278	32
20	260	17	225	23	408	666	386	368	*359	*418	274	44
21	210	13	168	23	278	582	359	294	377	377	*330	135
22	150	18	130	23	256	570	302	210	400	359	354	155
23	110	13	108	29	228	624	266	218	418	382	368	103
24	95	74	88	33	210	588	221	210	431	359	338	101
25	80	88	78	33	194	530	246	238	426	342	310	167
26	65	98	70	*818	182	505	330	314	426	359	334	346
27	*53	50	63	*313	170	552	322	346	422	386	359	377
28	82	30	56	144	155	600	290	350	382	354	359	400
29	65	24	56	915	-	600	326	346	346	354	334	395
30	41	35	53	772	-	594	359	294	342	368	270	395
31	65	-	48	*2120	-	600	-	306	-	368	263	-
Total	5,777	1,189.6	8,483	5,858	15,438	11,673	12,287	9,897	10,577	11,913	10,301	7,440
Mean	186	39.7	209	189	551	377	410	319	353	384	332	248
Max.	380	98	1,840	2,120	1,970	666	690	450	436	475	390	400
Min.	41	4.0	28	23	155	116	221	204	132	342	263	32
Ac-ft	11,460	2,360	12,860	11,620	30,620	23,150	24,370	19,630	20,980	23,630	20,430	14,760

Calendar year 1960 :

Max

Min

Mean

Acres-feet

Water year 1960-61

Max 2,120

Min 4.0

Mean 298

Acres-feet 215,900

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 3-27.

SACRAMENTO RIVER BASIN

11-3880. Stony Creek at Black Butte damsite near Orland, Calif.

Location.--Lat 39°49'00", long 122°19'25" in SW $\frac{1}{4}$ sec.28, T.23 N., R.4 W., on downstream side of road bridge, 0.6 mile downstream from diversion dam, and 8.1 miles northwest of Orland.

Drainage area.--741 sq mi.

Records available.--July 1955 to September 1961.

Gage.--Wire-weight gage read once daily. Altitude of gage is 360 ft (from topographic map). Prior to Dec. 12, 1960, water-stage recorder at site 0.6 mile upstream at different datum.

Average discharge.--6 years, 620 cfs (448,900 acre-ft per year), adjusted for diversion to South Diversion Canal.

Extremes.--Maximum discharge during year, 3,880 cfs Feb. 2 (gage height, 9.27 ft); minimum daily, 2 cfs Nov. 11.

1955-61: Maximum discharge, 36,300 cfs Feb. 24, 1958 (gage height, 11.82 ft, site and datum then in use), from rating curve extended above 7,500 cfs on basis of slope-area measurement of peak flow; no flow Dec. 8-10, 31, 1956, Jan. 1-10, 1957.

Remarks.--Records fair, except those for periods of no gage-height record, which are poor. Many diversions above station for irrigation. Flow regulated by East Park Reservoir (usable capacity, 50,600 acre-ft) and Stony Gorge Reservoir (usable capacity, 50,100 acre-ft). Prior to October 1956, figures of daily discharge included water diverted to South Diversion canal, which diverts 0.6 mile above station. Records of combined monthly discharge do not include a small diversion that bypasses the station at times for irrigation.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a 44	a 28	*2100	46	1200	194	608	*155	122	a 146	143	105
2	a 42	a 26	*625	44	2400	188	634	164	98	a 146	132	109
3	a 40	a 27	295	41	1190	164	614	158	89	143	130	105
4	a 70	a 7	207	41	724	155	588	140	78	a 152	130	112
5	*98	a 13	164	39	569	149	510	135	78	161	112	109
6	57	a 13	140	39	450	170	425	140	62	152	105	114
7	16	a 10	100	37	378	152	356	143	72	177	117	107
8	7.8	a 15	82	37	316	161	292	100	85	a 161	107	107
9	7.5	a 28	68	36	1110	216	248	80	102	a 146	102	117
10	19	a 13	52	34	*970	194	233	66	109	132	132	117
11	44	a 2	46	34	986	198	219	74	98	107	146	127
12	92	a 5	*39	32	930	230	*194	83	132	107	124	105
13	119	a 10	37	26	675	205	167	85	130	170	112	98
14	161	a 22	36	24	703	219	155	96	132	164	109	102
15	168	*28	37	30	808	*471	140	107	135	a 164	107	87
16	111	20	60	*31	836	406	135	158	122	a 161	109	78
17	68	17	968	28	773	713	130	146	114	158	107	32
18	149	16	790	26	696	401	109	135	105	155	98	11
19	161	54	382	25	608	370	122	130	100	*127	89	10
20	95	25	230	25	521	675	140	119	*116	137	91	14
21	a 70	18	164	24	388	652	122	112	122	124	100	49
22	a 45	16	130	22	342	601	109	100	130	122	*146	96
23	a 30	16	109	28	316	640	85	89	146	127	146	70
24	a 20	50	96	30	296	627	96	76	146	135	143	49
25	a 15	132	83	31	276	647	109	70	a 152	127	127	74
26	a 8	256	74	891	252	575	119	102	a 152	127	122	105
27	a 4	104	66	*557	233	575	117	119	155	152	124	132
28	a 15	54	60	338	219	608	78	119	137	143	124	117
29	a 10	36	57	1290	-	614	74	119	140	137	96	112
30	a 9	38	51	1240	-	608	112	127	152	143	78	107
31	a 20	-	48	2240	-	608	-	107	-	135	93	-
Total	1,815.3	1,099	7,396	7,366	19,165	12,386	7,040	3,554	3,511	4,438	3,601	2,677
Mean	58.6	36.6	239	238	604	400	235	115	117	143	116	89.2
Max.	168	256	2,100	2,240	2,400	713	634	164	155	177	146	132
Min.	4	2	36	22	219	149	74	66	62	107	78	10
Ac-ft	3,600	2,180	14,670	14,610	38,010	24,570	13,960	7,050	6,960	8,800	7,140	5,310
Mean†	142	49.4	240	238	685	414	415	316	337	369	306	223
Ac-ft†	8,760	2,940	14,740	14,630	38,040	25,460	24,720	19,410	20,030	22,660	18,840	13,260
Calendar year 1960 : Max	8,770	Min	2	Mean	268	Mean†	379	Ac-ft	194,400	Ac-ft†	275,300	
Water year 1960-61 : Max	2,400	Min	2	Mean	203	Mean†	309	Ac-ft	146,900	Ac-ft†	223,500	

* Discharge measurement made on this day.

† Adjusted for diversion to South Diversion Canal.

a No gage-height record.

11-3885. Stony Creek near Hamilton City, Calif.

Location.--Lat 39°43'25", long 122°02'47", in Capay Grant, on right bank 2.3 miles southwest of Hamilton City, 6 miles upstream from mouth, and 8 miles east of Orland, Glenn County.

Drainage area.--764 sq mi.

Records available.--October 1940 to September 1961. Records for water year 1941 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map). Prior to February 1946, at site 3 miles upstream at different datum.

Average discharge.--21 years, 432 cfs (312,800 acre-ft per year).

Extremes.--Maximum discharge during year, 5,890 cfs Feb. 2 (gage height, 10.56 ft); no flow for several months.
1941-61: Maximum discharge, 39,900 cfs Feb. 25, 1958 (gage height, 18.31 ft); no flow at times in each year.

Remarks.--Records good except those below 30 cfs, which are fair. Flow regulated by East Park Reservoir beginning in 1910 (usable capacity, 50,620 acre-ft) and Stony Gorge Reservoir beginning in 1928 (usable capacity, 50,100 acre-ft). Diversions for irrigation of about 17,200 acres above station in Orland Project, Bureau of Reclamation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 30

Jan. 30 to Sept. 30

3.7	0	4.8	84	3.7	0	5.0	91
3.8	1.0	5.2	165	3.8	1.0	5.5	190
3.9	3.0	5.6	285	3.9	3.0	6.0	335
4.0	7.0	6.0	455	4.0	7.0	6.5	560
4.2	18	6.5	730	4.1	11	7.0	890
4.5	46			4.4	30	8.0	1,850
				4.7	55	9.0	3,140

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			954	24	*1,970	190	545	54	0			
2			*870	18	3,060	178	540	*61	.4			
3			211	14	2,150	159	572	49	4.7			
4			100	12	1,070	149	545	33	30			
5	(*)		62	9.0	674	141	475	22	26			
6			40	7.0	520	139	375	23	19			
7			24	5.0	442	135	285	35	5.8			
8			14	3.0	371	129	218	46	.9			
9			7.0	1.8	980	153	180	34	.8			
10			2.4	.7	*1,300	161	141	29	0			
11			.6	0	978	153	109	34	0			
12			0	0	1,030	170	*88	34	0			
13			0	0	694	170	77	33	0			
14			*0	0	620	172	75	24	0			
15		(*)	0	0	708	*285	66	9.8	0			
16			0	0	827	351	59	.2	0			
17			250	*0	750	567	62	0	0			
18			842	0	662	550	*49	0	0			
19			435	0	560	505	27	0	0	(*)		
20			271	0	495	560	18	0	*0			
21			196	0	395	584	18	17	0			
22			150	0	324	525	19	22	0		(*)	
23			120	0	294	550	26	6.6	0			
24			97	0	270	550	23	4.6	0			
25			81	0	252	530	21	16	0			
26			69	370	232	475	10	22	0			
27			59	675	218	490	18	6.4	0			
28			50	250	205	520	*38	0	0			
29			40	700	—	530	46	.2	0			
30			36	1,830	—	535	50	6.6	0			
31			30	2,250	—	535	—	.4	—			
Total	0	0	5,011.0	6,169.5	22,051	10,841	4,775	6,228	87.6	0	0	0
Mean	0	0	162	199	788	350	159	20.1	2.92	0	0	0
Max.	0	0	954	2,250	3,060	584	572	61	30	0	0	0
Min.	0	0	0	0	205	129	10	0	0	0	0	0
Ac-ft	0	0	9,940	12,240	43,740	21,500	9,470	1,240	174	0	0	0

Calendar year 1960:

Max

7,560

Min

0

Mean

195

Acra-foot

141,700

Water year 1960-61:

Max

3,060

Min

0

Mean

136

Acra-foot

98,300

Peak discharge (base, 2,000 cfs)

Date	Time	Gage Height	Discharge	Date	Time	Gage Height	Discharge
12-1	8p.m.	9.27	3,520	2-2	5p.m.	10.56	5,890

* Discharge measurement or observation of no flow made on this day.

11-3890. Sacramento River at Butte City, Calif.

Location.--Lat 39°27'35", long 121°59'35", in NE¼ sec.32, T.19 N., R.1 W., on left bank 0.5 mile south of Butte City.

Records available.--April 1921 to September 1938 (low-water periods only), October 1938 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is set to datum of Corps of Engineers. Prior to December 1930, at site 0.5 mile upstream at same datum.

Average discharge.--23 years (1938-61), 12,360 cfs (8,948,000 acre-ft per year).

Extremes.--Maximum discharge during year, 65,300 cfs Dec. 2 (gage height, 88.34 ft); minimum, 5,090 cfs Oct. 29, 30.

1940-61: Maximum discharge, 170,000 cfs Feb. 7, 1942 (gage height, 96.87 ft), from rating curve extended above 100,000 cfs.

1921-61: Minimum discharge recorded, 1,050 cfs July 15, 25, 26, 1931 (gage height, 67.49 ft).

Remarks.--Records good except those for the period of no gage-height record, which are fair. Natural flow of stream affected by storage reservoirs, power developments, unmeasured over-bank flow during extreme floods, diversions for irrigation, and return flow from irrigated areas.

Discharge, in cubic feet per second, water year October 1960 to September 1961											
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	5.470	5.150	11.700	5.860	*5.4900	18.500	13.400	7.350	6.800	8.020	8.720
2	5.470	5.230	57.500	5.900	38.100	17.500	13.000	7.400	7.260	7.980	8.500
3	5.530	5.210	36.200	6.070	50.900	16.700	12.900	7.330	7.930	8.050	8.430
4	5.470	5.270	16.400	6.120	29.400	16.600	12.600	7.060	8.020	7.860	8.460
5	5.550	5.350	11.500	6.090	19.700	16.400	12.300	6.950	8.000	7.880	8.550
6	5.700	5.310	9.330	6.050	16.100	16.600	11.900	6.880	7.930	7.900	8.650
7	5.950	5.390	8.090	6.030	14.200	*16.600	11.200	7.190	7.860	7.930	8.700
8	6.090	5.430	7.380	6.010	13.000	16.400	10.700	7.400	7.690	8.000	8.650
9	6.090	5.430	6.910	*5.990	14.800	17.700	9.970	*7.150	7.500	8.220	8.650
10	6.010	5.430	6.580	6.010	40.400	19.000	*9.400	7.100	7.400	8.380	8.720
11	5.880	5.510	6.320	6.090	32.900	17.800	8.900	7.330	7.420	*8.380	8.800
12	5.800	5.780	*6.120	6.010	42.900	17.400	8.530	7.540	7.380	8.310	8.770
13	5.470	6.320	5.900	5.970	32.900	17.200	8.120	7.590	7.260	8.260	8.820
14	5.390	9.500	5.780	5.950	27.200	17.000	7.740	7.130	7.100	8.220	*8.930
15	5.290	*8.510	5.690	5.880	27.100	19.600	7.380	6.910	7.170	8.240	a8.800
16	5.270	6.470	6.260	5.820	30.600	25.400	7.060	6.750	7.350	8.340	a8.650
17	5.210	5.800	10.400	5.780	28.200	25.800	6.840	6.550	7.620	8.310	a8.550
18	5.150	5.700	19.500	5.760	24.900	29.500	6.620	6.690	7.620	8.290	a8.400
19	*5.110	6.070	16.000	5.720	23.300	23.800	6.660	6.690	*7.590	8.310	a8.300
20	5.110	6.030	12.600	5.700	22.000	22.400	6.970	6.750	7.500	8.430	a8.200
21	5.190	5.650	10.400	5.630	21.300	23.300	6.860	6.880	7.690	8.580	8.050
22	5.190	5.490	8.970	5.610	20.600	21.500	7.170	6.840	8.050	8.600	7.950
23	5.210	5.350	8.160	5.740	20.200	20.900	7.570	6.750	8.120	8.670	7.930
24	5.270	5.150	7.560	5.780	19.800	21.400	8.310	6.710	8.360	8.770	7.980
25	5.290	5.290	7.090	5.760	19.500	23.100	8.140	6.550	8.410	8.750	8.020
26	5.150	15.800	7.160	5.800	19.200	22.200	7.300	6.530	8.430	8.670	7.930
27	5.130	17.100	6.670	8.120	18.900	20.600	6.750	6.550	8.260	8.750	7.740
28	5.130	9.590	6.370	8.050	18.600	19.600	6.550	6.600	8.240	8.650	7.660
29	5.090	7.330	6.160	7.590	—	16.300	6.710	6.510	8.240	8.620	7.420
30	5.090	6.610	6.050	20.000	—	14.900	6.880	6.470	8.100	8.580	7.380
31	5.130	—	5.950	28.100	—	14.000	—	6.530	—	8.720	7.150
Total	167,880	202,250	46,700	224,190	741,600	605,700	264,430	214,660	32,300	258,670	257,460
Mean	5,415	6,742	11,180	7,232	26,500	19,540	8,810	6,920	7,740	8,344	8,305
Max.	6,090	17,100	57,500	28,100	54,900	29,500	13,400	7,590	8,430	8,770	8,930
Min.	5,090	5,150	5,690	5,610	13,000	14,000	6,550	6,470	6,800	7,860	7,150
Ac-ft	333,000	401,200	687,700	444,700	1,471,000	1,201,000	524,500	425,800	460,800	513,100	510,700
Calendar year 1960:			Max 82,700	Min 3,670	Mean 8,616			Acres-feet 6,254,000			
Water year 1960-61:			Max 57,500	Min 5,090	Mean 10,150			Acres-feet 7,351,000			

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

749

11-3895. Sacramento River at Colusa, Calif.

Location.--Lat 39°12'50", long 121°59'55", at north end of Jimeno Grant, on right bank just downstream from highway bridge at Colusa, Colusa County, at mile 89.4 upstream from Sacramento.

Records available.--April 1921 to October 1939 (low-water periods only), June 1940 to September 1961.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers. Prior to December 1930, water-stage recorder in center fender pier 50 ft upstream from bridge at same datum.

Average discharge.--21 years (1940-61), 10,600 cfs (7,674,000 acre-ft per year).

Extremes.--Maximum discharge during year, 35,200 cfs Dec. 3 (gage height, 63.25 ft); minimum, 4,920 cfs Oct. 19, 20.

1940-61: Maximum discharge, 49,000 cfs Feb. 8, 1942 (gage height, 69.20 ft).

1921-61: Minimum discharge recorded, 820 cfs July 25, 26, 1931 (gage height, 34.79 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.160	4.990	6.920	5.920	*3.200	17.800	13.200	6.680	6.250	7.670	7.900	6.820
2	5.170	5.060	26.900	5.890	32.200	17.500	12.900	6.900	6.510	7.610	8.000	6.820
3	5.220	5.110	32.900	6.020	32.600	16.700	12.400	6.960	6.980	7.540	8.000	6.530
4	5.190	5.100	23.500	6.000	31.200	16.400	12.300	6.880	7.380	7.410	8.000	6.240
5	5.210	5.150	15.000	6.050	23.700	16.200	12.000	6.710	7.470	7.290	8.100	6.180
6	5.300	5.210	10.800	5.900	18.100	16.200	11.700	6.550	7.440	7.230	8.100	6.190
7	5.440	5.330	8.920	5.860	15.200	*16.500	11.100	6.570	7.460	7.100	8.100	6.170
8	5.660	5.380	7.910	5.850	13.600	16.300	10.600	6.840	7.310	7.050	8.200	6.170
9	5.670	5.380	7.260	*5.850	13.800	16.400	9.990	*6.840	7.130	7.180	8.200	6.020
10	5.640	5.390	6.820	5.910	22.600	18.300	*9.530	6.680	6.970	7.320	8.200	6.030
11	5.560	5.410	6.530	5.970	31.300	17.900	9.040	6.610	6.860	*7.250	8.300	6.070
12	5.550	5.590	*6.300	5.980	31.600	17.400	8.700	5.830	6.790	7.300	8.400	*6.110
13	5.310	5.910	6.110	5.910	31.400	17.200	8.240	7.010	6.690	7.400	8.400	6.070
14	5.180	7.530	5.910	5.870	28.700	17.000	7.910	6.990	6.570	7.400	*8.510	5.960
15	5.090	*9.210	5.800	5.820	26.900	17.200	7.580	6.680	6.420	7.400	8.510	5.940
16	5.090	6.940	5.840	5.780	27.700	23.100	7.250	6.500	6.550	7.400	8.200	6.010
17	5.040	6.020	7.340	5.720	29.100	24.400	7.010	6.400	6.670	7.500	8.000	6.310
18	4.990	5.710	13.400	5.670	26.400	28.100	6.810	6.300	6.820	7.500	7.700	6.310
19	*4.930	5.850	17.900	5.620	24.000	26.000	*6.660	6.300	*6.850	7.500	7.600	6.160
20	4.940	6.150	14.300	5.580	22.500	22.700	6.780	6.260	6.800	7.600	7.500	6.120
21	4.940	5.780	11.300	5.540	21.400	22.800	6.700	6.350	6.920	7.600	7.500	6.080
22	4.990	5.560	9.550	5.520	20.300	21.700	6.760	6.440	7.240	7.600	7.500	6.060
23	5.010	5.420	8.540	5.570	19.700	20.300	7.060	6.400	*7.470	7.600	7.640	6.050
24	5.030	5.210	8.980	5.600	19.100	20.100	7.450	6.360	7.650	7.700	7.620	6.010
25	5.080	5.220	7.360	5.630	18.700	20.700	7.960	6.370	7.890	7.700	7.650	5.960
26	5.050	9.460	7.010	5.710	18.400	21.100	7.240	6.240	7.990	7.800	7.520	5.980
27	5.050	18.700	6.840	5.570	18.200	20.000	6.680	6.160	7.920	7.800	7.340	5.900
28	5.030	12.400	6.410	7.800	19.000	19.800	6.460	6.160	7.890	7.800	7.310	5.810
29	5.040	8.260	6.310	7.210	19.800	19.800	6.420	6.130	7.840	7.800	7.110	5.820
30	5.040	6.950	6.130	11.300	14.700	6.470	6.050	*7.730	7.900	7.020	5.770	
31	5.040	6.010	21.600	13.700	13.700	6.040	6.040	7.900	6.930			
Total	160,640	199,380	320,800	205,220	667,600	84,000	260,900	202,190	214,460	232,850	243,060	183,670
Mean	5,182	6,646	10,350	6,620	23,820	19,160	8,697	6,522	7,149	7,511	7,841	6,122
Max.	5,670	18,700	32,900	21,600	32,600	28,100	13,200	7,010	7,990	7,900	8,510	6,820
Min.	4,930	4,990	5,800	5,520	13,600	13,700	6,420	6,040	6,250	7,050	6,930	5,770
Ac-ft	318,600	395,500	636,300	407,000	1,324,000	1,178,000	517,500	401,000	425,400	461,900	482,100	364,300
Calendar year 1960:				Max 37,300	Min 3,700	Mean 8,095				Acra-feet 5,876,000		
Water year 1960-61:				Max 32,900	Min 4,930	Mean 9,547				Acra-feet 6,912,000		

* Discharge measurement made on this day.

Note.--No gage-height record Mar. 30 to Apr. 2, July 12 to Aug. 13, Aug. 16-22.

SACRAMENTO RIVER BASIN

11-3897. Butte Creek at Butte Meadows, Calif.

Location.--Lat 40°04'05", long 121°34'25", on right bank in NW¹/₄ sec.31, T.26 N., R.4 E., 1.0 mile downstream from small tributary, 1.5 miles southwest of Butte Meadows, and 15 miles northeast of Forest Ranch.

Drainage area.--44.4 sq mi.

Records available.--August 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,260 ft (from topographic map).

Extremes.--1960: Maximum discharge during period August to September, 78 cfs Sept. 3 (gage height, 2.20 ft); minimum, 49 cfs Sept. 2.
1960-61: Maximum discharge during water year, 356 cfs Jan. 31 (gage height, 3.52 ft); minimum, 46 cfs Sept. 4.

Remarks.--Records good. No storage or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.9	44	3.0	222
2.2	78	3.5	350
2.5	124		

Discharge, in cubic feet per second, 1960

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	54	51	7	54	52	13	53	51	19	51	52	25	52	51
2	54	51	8	54	51	14	52	51	20	51	52	26	52	51
3	54	62	9	54	52	15	52	51	21	51	51	27	52	51
4	54	53	10	53	52	16	52	51	22	52	51	28	51	51
5	*54	53	11	53	52	17	52	51	23	52	51	29	51	*51
6	54	53	12	53	51	18	51	51	24	52	51	30	51	51
												31	51	-
Total.....													1,626	1,553
Mean.....													52.5	51.8
Maximum.....													54	62
Minimum.....													51	51
Runoff in acre-feet.....													3,230	3,080

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	56	231	64	168	95	144	176	180	64	52	49
2	51	56	147	62	186	97	156	168	155	64	52	48
3	51	*59	103	62	164	95	176	172	146	64	52	48
4	52	58	86	61	138	94	190	168	140	62	52	48
5	54	56	78	61	126	95	190	164	133	61	52	48
6	94	59	73	60	129	94	186	176	124	61	53	48
7	64	64	71	61	119	91	180	164	119	60	53	48
8	60	59	71	67	118	92	174	162	114	59	54	48
9	58	58	68	73	198	97	176	172	110	59	54	48
10	58	58	68	68	186	95	172	*209	105	58	52	48
11	58	77	67	65	209	97	*174	192	102	59	52	48
12	56	81	66	64	169	92	190	178	98	59	52	48
13	56	76	65	62	*153	94	170	174	95	59	52	48
14	56	70	*65	62	147	*103	166	174	88	58	51	48
15	55	65	67	62	158	131	164	*178	85	58	51	48
16	55	65	88	61	144	111	174	178	84	58	51	53
17	55	67	106	*60	135	110	186	180	81	58	51	52
18	55	98	95	60	128	105	186	184	76	56	50	50
19	55	72	86	60	122	111	170	192	*74	*55	51	49
20	55	67	78	60	119	121	160	190	74	55	52	49
21	55	67	77	60	118	116	164	186	72	55	51	49
22	55	64	76	59	114	126	158	182	70	54	51	48
23	55	65	74	61	110	155	151	174	70	54	*50	48
24	55	85	72	61	108	153	146	166	68	54	50	48
25	55	132	71	60	105	142	147	160	67	54	49	47
26	58	105	70	65	103	140	149	158	67	53	49	47
27	56	81	68	67	102	137	*151	146	67	53	50	47
28	56	73	67	65	97	131	155	138	66	53	53	47
29	55	71	*66	72	-	131	170	*138	66	52	52	47
30	55	79	66	85	-	133	170	162	65	52	50	47
31	55	-	65	252	-	137	149	-	-	52	49	-
Total	1,759	2,143	2,551	2,162	3,872	3,521	5,045	5,310	2,861	1,773	1,593	1,449
Mean	56.7	71.4	82.3	69.7	138	114	168	171	95.4	57.2	51.4	48.3
Max.	94	132	231	252	209	155	190	209	180	64	54	53
Min.	51	56	65	59	97	91	144	138	65	52	49	47
Ac-ft	3,490	4,250	5,060	4,290	7,680	6,980	10,010	10,530	5,670	3,520	3,160	2,870

Calendar year 1960:

Max -

Min -

Mean -

Acra-feet -

Water year 1960-61:

Max 252

Min 47

Mean 93.3

Acra-feet 67,510

Peak discharge (base, 350 cfs).--Dec. 1 (2 p.m.) 353 cfs (3.51 ft); Jan. 31 (12 m) 356 cfs (3.52 ft).

* Discharge measurement made on this day.

11-3900. Butte Creek near Chico, Calif.

Location.--Lat 39°43'34", long 121°42'28", in NW¹/₄ sec. 36, T.22 N., R.2 E., on right bank 0.7 mile downstream from Little Butte Creek and 7.5 miles east of Chico.

Drainage area.--148 sq mi.

Records available.--October 1930 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 320 ft (from topographic map). Prior to Aug. 13, 1944, at site 0.4 mile upstream at different datum.

Average discharge.--31 years, 388 cfs (280,900 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 3,110 cfs Jan. 31 (gage height, 5.12 ft); minimum, 27 cfs Sept. 5.

1930-1961: Maximum discharge, 18,700 cfs Dec. 22, 1955 (gage height, 13.35 ft), from rating curve extended above 6,900 cfs on basis of slope-area measurement of peak flow; minimum, 10 cfs Nov. 29, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow slightly regulated by storage in Magalia Reservoir (capacity, 3,540 acre-feet). Diversions above station for irrigation and domestic use of about 4,200 acre-ft annually. Butte Creek receives considerable water above station from West Branch Feather River by way of De Sabla and Center-ville powerplants. Pacific Gas & Electric Co. has furnished the following record of this flow for water year 1961.

Month	Mean discharge	Runoff in Acre-feet	Month	Mean discharge	Runoff in Acre-feet
October.....	43.6	2,681	May.....	98.3	6,047
November.....	54.6	3,250	June.....	92.9	5,528
December.....	77.3	4,756	July.....	83.9	5,160
January.....	69.1	4,247	August.....	48.8	3,003
February.....	91.9	5,106	September.....	39.9	2,375
March.....	96.5	5,931	Water year.....	74.2	53,750
April.....	95.2	5,665			

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.4	79	3.0	920
1.6	132	4.0	1,900
2.0	285	5.0	2,980
2.5	545		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	126	1,050	190	885	300	570	441	360	179	132	110
2	115	132	852	186	900	300	590	420	340	176	129	102
3	104	132	509	182	700	308	620	405	321	176	126	104
4	115	132	370	176	600	290	660	395	308	176	124	107
5	118	139	308	176	560	280	600	380	303	176	118	92
6	190	129	258	176	520	310	530	395	294	176	118	110
7	158	139	232	179	480	290	520	395	276	179	121	118
8	112	121	216	193	450	330	480	375	276	179	118	121
9	86	107	204	208	1,300	470	460	375	262	179	118	115
10	102	104	193	232	1,200	440	441	430	258	176	112	118
11	102	129	193	212	1,000	400	*420	*436	254	172	110	115
12	102	224	176	200	800	370	450	420	249	172	121	115
13	99	350	172	200	720	360	400	405	240	172	112	115
14	96	254	172	196	640	*350	360	390	236	168	112	118
15	94	186	*172	190	*695	720	370	385	224	168	110	118
16	94	*124	262	186	624	620	380	375	220	168	110	118
17	96	139	452	190	539	840	390	370	220	168	110	148
18	99	254	425	*179	470	680	400	370	216	*165	112	99
19	96	249	360	168	430	620	385	375	*208	162	115	92
20	96	179	316	172	400	640	370	375	204	158	118	89
21	115	162	285	172	380	580	395	365	193	158	115	89
22	124	148	272	168	360	550	468	360	193	158	*112	89
23	126	129	262	172	350	690	436	350	182	158	107	89
24	135	162	249	176	330	720	405	345	179	155	107	89
25	132	494	236	176	320	700	400	335	179	142	107	86
26	129	774	224	190	310	660	405	330	179	132	107	86
27	107	365	220	224	310	630	405	326	179	129	110	84
28	132	258	208	200	300	600	405	312	179	145	112	84
29	132	212	204	228	-	570	415	308	179	132	112	84
30	126	208	*196	468	-----	560	436	321	179	132	110	86
31	118	-----	193	2,020	-----	560	-----	330	-----	129	115	-----
Total	3,565	6,261	9,441	7,985	15,573	15,738	13,566	11,594	7,090	5,015	3,560	3,090
Mean	115	209	305	258	595	508	452	374	236	162	115	103
Max.	190	774	1,050	2,020	1,300	840	660	441	360	179	132	148
Min.	86	104	172	168	300	280	360	308	179	129	107	84
Ac-ft	7,070	12,420	18,730	15,840	33,070	31,220	26,910	23,000	14,060	9,950	7,060	6,130

Calendar year 1960 : Max 4,520 Min 86 Mean 304 Acre-feet 220,800
 Water year 1960-61 : Max 2,020 Min 84 Mean 284 Acre-feet 205,500

Peak discharge (base, 2,700 cfs).--Jan. 31 (11 a.m.) 3,110 cfs (5.12 ft).

*Discharge measurement made on this day.

Note.--No gage-height record Dec. 23-28, Feb. 2-14, Feb. 18 to Mar. 13, Mar. 15 to Apr. 9, Apr. 12-17.

SACRAMENTO RIVER BASIN

11-3902. Gold Run tributary near Nelson, Calif.

Location.--Lat 39°35'21", long 121°41'15", on west line of sec.18, T.20 N., R.3 E., on left bank on U. S. Highway 99E, 4.8 miles northeast of Nelson.

Drainage area.--1.31 sq mi.

Records available.--October 1959 to March 1960, October 1960 to March 1961, discontinued as a continuous-record station; converted to a crest-stage partial-record station.

Gage.--Water-stage recorder and tipping-bucket rain gage. Altitude of gage is 160 ft (from topographic map).

Extremes.--Maximum discharge during period, 118 cfs Jan. 31 (gage height, 4.05 ft), from rating curve extended above 42 cfs on basis of indirect measurement of peak flow through culvert at gage height 3.88 ft; no flow for many days.

Remarks.--Records poor. Flow regulated by irrigation operations above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	*0	1.3	0.2	1.4	0.1						
2	0	0	2.1	0	1.9	0						
3	5.9	.1	.2	0	1.3	0						
4	.1	.1	.1	0	a.4	0						
5	.1	.1	.1	0	a.1	.1						
6	.2	.8	.1	0	a.1	0						
7	0	.3	.1	0	a.1							
8	0	1.6	.1	0	**a.1							
9	0	.3	.1	0	3.9	a1.3						
10	0	3.8	.2	.1	*3.2							
11	0	1.0	0	.1	4.6							
12	0	.2	0	.1	.5							
13	0	1.1	0	0	.2	*0						
14	0	.2	.1	0	.1	.9						
15	0	.1	*0	0	.7	1.1						
16	0	.1	4.5	0	.7							
17	0	**1	2.1	0	.2							
18	.3	.1	.2	*0	.1							
19	1.9	.1	.1	0	.1							
20	4.8	0	.2	0	.1							
21	1.0	0	.1	0	.1							
22	.5	.1	.1	0	.1	a.7						
23	0	.1	.1	0	.1							
24	0	0	.1	0	.1							
25	3.1	5.8	0	.1	.1							
26	4.1	2.7	0	.5	0							
27	0	.4	.1	.2	.1							
28	0	.1	.1	.3	.1							
29	0	.1	.1	2.0	-							
30	0	.2	.1	5.0	-							
31	0	-	.3	4.1	-							
Total	31.1	43.9	24.4	67.6	72.7	31.1						
Mean	1.00	1.46	0.79	2.18	2.60	1.00						
Max.	10	27	13	41	39	-						
Min.	0	0	0	0	0	0						
Ac-ft	62	87	48	134	144	62						
(†)	0	4.6	2.0	3.7	3.5	4.3						
Calendar year 1960	Max			Min		Mean	Acres-feet					
Water year 1960-61	Max			Min		Mean	Acres-feet					

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

† Precipitation in inches.

a No gage-height record.

SACRAMENTO RIVER BASIN

753

11-3905. Sacramento River below Wilkins Slough, Calif.

Location.--Lat 39°00'35", long 121°49'25", in Jimeno Grant, on right bank 1,500 ft downstream from Wilkins Slough, Colusa County, 6 miles southeast of Grimes, and at mile 62.9 upstream from Sacramento.

Records available.--August 1931 to September 1938 (low-water periods only), October 1938 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers.

Average discharge.--23 years (1938-61), 9,176 cfs (6,643,000 acre-ft per year).

Extremes.--Maximum discharge during year, 26,200 cfs Feb. 4 (gage height, 47.43 ft); minimum, 5,020 cfs Apr. 29.

1938-61: Maximum discharge, 28,900 cfs Feb. 27, 1958 (gage height, 51.41 ft); maximum gage height (revised), 52.75 ft Mar. 1, 1940.

1931-61: Minimum discharge recorded, 100 cfs Aug. 1, 1931 (gage height, 14.20 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. Natural flow of stream affected by storage reservoirs, power developments, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas.

Discharge, in cubic feet per second, water year October 1960 to September 1961											
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	5,200	5,140	7,600	6,450	24,600	18,200	14,600	5,350	6,070	6,420	6,780
2	5,250	5,180	16,500	6,390	*25,800	18,000	14,000	5,690	6,490	6,380	6,850
3	5,350	5,180	23,900	6,480	25,800	17,100	13,800	5,820	7,010	6,380	6,860
4	5,300	5,150	23,500	6,520	26,000	16,500	13,500	5,760	7,530	6,370	6,860
5	5,350	5,170	18,100	6,510	24,500	16,300	13,300	5,670	7,570	6,310	6,940
6	5,400	5,280	13,500	6,530	21,500	*16,100	13,000	5,510	7,440	6,240	7,100
7	5,600	5,350	11,200	6,480	18,000	16,200	12,500	5,530	7,360	6,200	7,130
8	5,750	5,440	9,830	6,490	16,000	16,200	11,800	5,870	7,050	6,200	7,090
9	5,800	5,470	8,880	6,510	14,500	16,100	11,000	5,930	6,760	6,250	7,050
10	5,750	5,480	8,230	6,650	18,700	17,400	10,200	5,810	6,530	6,410	7,060
11	5,700	5,520	7,730	6,760	25,500	18,000	9,360	*5,840	6,430	6,460	7,160
12	5,650	5,620	7,340	*6,820	25,700	17,400	*8,730	6,260	6,140	6,410	7,200
13	5,500	5,920	7,090	6,720	25,800	17,000	8,390	6,600	5,830	*6,290	7,240
14	5,250	6,700	*6,800	6,660	25,400	16,800	7,990	6,690	5,620	6,250	7,290
15	5,200	9,180	6,560	6,570	25,000	16,800	7,510	6,420	*5,410	6,270	7,310
16	5,200	8,450	6,400	6,500	25,000	20,100	7,180	6,180	5,430	6,410	*7,260
17	5,150	*7,010	6,990	6,430	25,400	23,700	6,730	6,070	5,530	6,420	7,210
18	5,050	6,350	10,700	6,350	24,900	24,700	6,440	5,980	5,590	6,370	6,820
19	5,050	6,160	16,500	6,300	24,300	24,700	*6,100	6,010	5,530	6,370	6,480
20	5,050	6,500	15,500	6,260	23,600	23,700	5,980	6,030	5,430	6,320	6,480
21	*5,040	6,410	12,900	6,210	22,500	23,300	5,970	6,240	5,330	6,440	6,530
22	5,080	6,140	11,000	6,160	21,600	22,800	5,820	6,360	5,540	6,570	6,580
23	5,110	5,970	9,670	6,140	20,800	21,900	5,980	6,310	*5,740	6,660	6,540
24	5,140	5,780	8,810	6,170	20,100	21,300	6,290	6,280	5,980	6,670	6,530
25	5,180	5,660	8,200	6,180	19,500	21,400	6,890	6,270	6,300	6,660	6,590
26	5,190	6,790	7,780	6,300	19,200	22,900	6,390	6,130	6,510	6,700	6,540
27	5,160	15,400	7,440	6,580	18,800	21,900	5,590	6,060	6,470	6,720	6,480
28	5,150	14,800	7,120	8,160	18,400	21,300	5,130	5,990	6,490	6,730	6,400
29	5,150	10,700	6,890	8,090	-	19,400	5,050	5,850	6,480	6,750	6,340
30	5,160	8,380	6,660	9,140	-	16,900	5,180	5,730	*6,490	6,790	6,190
31	5,170	-	6,550	18,200	-	15,400	-	5,770	-	6,770	6,150
Total	164,080	206,280	325,870	217,710	626,900	599,500	260,400	186,010	188,080	200,190	211,040
Mean	5,293	6,876	10,510	7,023	22,390	19,340	8,680	6,000	6,270	6,458	6,808
Max.	5,800	15,400	23,900	18,200	25,800	24,700	14,600	6,690	7,570	6,790	7,310
Min.	5,040	5,140	6,550	6,140	14,500	15,400	5,050	5,350	5,330	6,200	6,150
Ac-ft	325,400	409,200	646,400	431,800	1,243,000	1,189,000	516,500	368,900	373,100	397,100	418,600
Calendar year 1960 :				Max 26,500	Min 3,160	Mean 7,824	Acres-feet 5,680,000				
Water year 1960-61 :				Max 25,800	Min 5,040	Mean 9,227	Acres-feet 6,680,000				

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-20.

SACRAMENTO RIVER BASIN

11-3910. Sacramento River at Knights Landing, Calif.

Location.--Lat 38°48'10", long 121°42'55", in NE 1/4 sec. 14, T. 11 N., R. 2 E., on left bank just upstream from Southern Pacific Railroad bridge at Knights Landing, 13.1 miles upstream from Feather River and at mile 34.0 upstream from Sacramento.

Records available.--April 1921 to October 1939 (low-water periods only), June 1940 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers. Prior to Dec. 9, 1930, in fender pier of railroad bridge at same datum. Water-stage recorder for station at Verona was used as auxiliary gage for this station January 1941 to June 1945. Since Aug. 16, 1945, auxiliary water-stage recorder 6.0 miles downstream from base gage.

Average discharge.--21 years (1940-61), 9,902 cfs (7,169,000 acre-ft per year).

Extremes.--Maximum discharge during year, 30,000 cfs Dec. 3 (gage height, 30.31 ft); maximum gage height, 35.15 ft Feb. 13; minimum

daily discharge, 4,600 cfs Apr. 30; minimum gage height, 15.71 ft Oct. 19.

1940-61: Maximum discharge, that of Dec. 3, 1960; maximum gage height, 41.83 ft Feb. 8, 1942.

1921-61: Minimum discharge recorded, 250 cfs July 23, 1931 (gage height, 7.80 ft).

Remarks.--Records good. Natural flow of stream affected by storage reservoirs, power developments, bypassing for flood control, diversions for irrigation, and considerable return flow from irrigated areas.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,750	5,800	8,890	7,110	26,100	21,200	15,000	5,140	7,290	6,650	7,840	7,350
2	5,740	5,690	16,200	6,930	*28,900	20,600	14,700	5,520	7,910	6,640	7,840	7,170
3	5,860	5,790	28,800	6,870	28,300	19,800	14,400	5,970	8,550	6,580	7,850	7,300
4	5,840	5,850	27,500	6,880	27,200	19,100	14,100	6,140	9,480	6,510	7,890	7,020
5	5,840	5,880	21,800	6,960	25,600	18,600	13,400	6,190	9,440	6,640	7,830	6,750
6	5,960	6,040	15,800	6,950	21,200	18,600	13,400	6,030	8,790	6,430	8,160	6,920
7	6,110	6,080	13,000	6,890	17,800	18,300	13,300	6,030	8,640	6,440	8,140	7,220
8	6,340	6,220	11,700	6,800	15,600	*18,300	12,800	6,550	8,120	6,430	8,170	7,500
9	6,440	6,260	10,400	6,880	14,900	18,500	12,400	6,790	7,770	6,620	8,180	7,840
10	6,550	6,310	9,380	6,960	17,400	19,400	11,700	6,690	7,470	6,830	8,130	7,990
11	6,420	6,320	8,600	7,120	26,500	20,500	10,600	*6,490	7,470	6,930	8,240	8,130
12	6,120	6,390	8,100	*7,360	26,200	20,400	*9,790	6,930	6,940	6,980	8,110	8,310
13	5,950	6,640	7,780	7,420	26,400	19,800	9,580	7,550	6,430	*6,810	8,450	8,410
14	5,970	7,150	*7,380	7,340	25,800	19,400	9,220	7,900	6,270	6,670	8,440	*8,160
15	5,760	9,730	7,030	7,250	25,100	18,800	8,740	7,720	*5,860	6,680	8,450	8,070
16	5,740	10,300	6,870	7,050	24,400	20,700	8,350	7,370	5,630	6,710	*8,430	8,040
17	5,760	*8,640	6,960	6,880	25,800	27,000	7,490	7,340	5,640	6,940	8,290	8,220
18	5,550	7,440	9,690	6,930	26,200	28,700	6,600	7,160	5,720	6,820	8,010	8,200
19	5,360	6,790	17,400	6,700	25,700	28,300	5,880	7,210	5,810	6,840	7,490	8,070
20	5,450	6,790	18,900	6,680	25,200	26,100	5,960	7,260	5,910	6,880	7,560	7,970
21	*5,550	7,000	16,400	6,610	25,000	26,200	6,000	7,580	5,760	6,810	7,480	7,780
22	5,600	6,700	13,900	6,540	23,900	25,000	5,890	7,340	5,690	7,000	7,710	7,520
23	5,600	6,510	11,900	6,450	23,100	23,700	5,940	7,670	5,930	7,230	7,720	7,320
24	5,690	6,280	10,400	6,450	22,500	22,300	6,420	7,550	6,210	7,410	7,650	7,220
25	5,740	6,060	9,480	6,560	22,200	22,100	7,220	7,760	6,600	7,250	7,610	7,130
26	5,810	6,420	8,830	6,550	22,100	24,400	7,010	7,840	7,010	7,520	7,630	7,110
27	5,790	12,200	8,320	6,820	21,600	23,400	5,810	7,490	6,890	7,600	8,050	7,240
28	5,750	17,800	8,100	8,460	21,300	21,900	5,050	7,470	6,810	7,590	7,540	7,120
29	5,720	12,700	7,730	9,610	—	20,500	4,680	7,390	6,890	7,670	7,460	7,150
30	5,710	10,300	7,440	9,570	—	17,600	4,600	7,020	6,820	7,840	7,430	7,090
31	5,820	—	7,190	20,200	—	15,700	—	6,940	—	7,740	7,530	—
Total	181,290	228,080	371,870	233,780	662,000	664,900	276,030	216,030	209,750	215,690	245,310	227,320
Mean	5,848	7,603	12,000	7,541	23,640	21,450	9,200	6,969	6,992	6,958	7,913	7,577
Max.	6,550	17,800	28,800	20,200	28,900	28,700	15,000	7,900	9,480	7,840	8,450	8,410
Min.	5,360	5,690	6,870	6,450	14,900	15,700	4,600	5,140	5,630	6,430	7,430	6,750
Ac-ft	359,600	452,400	737,600	463,700	1,313,000	1,319,000	547,500	428,500	416,000	427,800	486,600	450,900
Calendar year 1960:				Max	28,800	Min	2,890	Mean	8,597	Acre-feet	6,241,000	
Water year 1960-61:				Max	28,900	Min	4,600	Mean	10,220	Acre-feet	7,403,000	

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

755

11-3914. Little Last Chance Creek near Chilcott, Calif.

Location.--Lat 39°52'00", long 120°10'05", in ~~N.W.~~ sec.10, T.23 N., R.16 E., on left bank 500 ft downstream from highway bridge, 0.9 mile downstream from unnamed tributary, 4.5 miles north of Vinton, and 5.0 miles north of Chilcott.

Drainage area.--84.2 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,140 ft (from topographic map).

Extremes.--Maximum discharge during year, 18 cfs Apr. 1 (gage height, 3.66 ft); no flow July 24-27, 29, Aug. 4.

1958-61: Maximum discharge, 784 cfs Feb. 8, 1960 (gage height, 5.56 ft); no flow Oct. 23, 1959, July 24-27, 29, Aug. 4, 1961

Remarks.--No regulation or known diversion above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	1.1	6.5		*9.0	6.2	11	6.9	7.9	0.5	0.1	0.4
2	.7	*1.2	*8.0		8.0	6.8	14	* 6.8	11	.6	.1	.4
3	.7	1.9	5.7	1.5	12	6.5	15	* 7.5	7.7	1.0	.1	.3
4	.7	1.8	4.4	(*)	8.0	6.6	*17	7.7	5.3	1.3	0	.3
5	.7	1.8	3.0		6.0	7.5	15	6.9	3.9	1.0	.1	.4
6	.9	2.1	2.5		*5.2	6.7	13	7.0	3.8	.7	.1	*.4
7	.7	2.5	2.2		5.6	*6.2	13	6.7	*3.3	.7	*.2	.4
8	.6	2.1	2.0		5.9	6.9	11	6.1	3.2	.5	.2	.4
9	.6	1.7			6.8	9.1	12	5.6	2.9	.5	.3	.4
10	.8	1.7			*9.8	8.6	11	6.0	2.6	*.4	.2	.4
11	*.9	2.2	1.8		9.7	9.0	10	6.3	2.6	.4	.2	.5
12	.9	3.6		2.1	10	9.3	10	6.8	2.3	.4	.3	.4
13	1.0	4.0			7.5	9.6	12	6.9	2.1	.5	.4	.5
14	.8	3.5			8.7	8.8	8.4	5.6	1.4	.4	.4	.6
15	.8	2.8	2.0		10	9.1	7.7	5.1	.7	.5	.2	.9
16	.8	2.6	3.5	(*)	8.4	7.7	7.9	4.9	1.2	.4	.2	.5
17	.9	2.6	4.5		7.4	8.7	8.1	4.7	1.4	.4	.2	1.1
18	1.0	4.2	4.5		7.4	9.0	8.3	4.5	1.1	.4	.2	1.1
19	1.0	4.0	3.7		7.5	11	5.8	4.8	.8	.3	.2	.9
20	.9	2.8	*		7.5	9.7	5.6	6.0	.8	.2	.3	.8
21	.9	3.2	2.5		7.8	9.4	6.1	5.0	.8	.2	.3	1.1
22	1.0	2.7			7.6	9.3	7.5	4.4	.6	.2	.3	1.2
23	1.0	2.5		2.7	5.3	11	9.3	4.1	.6	.2	.2	.9
24	1.0	3.7			6.0	11	9.7	4.2	.4	.1	.3	1.1
25	1.0	3.9			6.9	13	12	3.6	.7	*0	.3	1.0
26	1.0	3.9			6.7	13	12	3.5	.6	0	.3	.6
27	1.1	3.8	2.0		6.5	12	9.2	3.5	.4	0	.4	*.6
28	1.1	3.0			6.4	11	8.8	3.1	.4	.1	.5	1.1
29	1.1	3.3		4.0	-	11	7.3	3.1	.4	.1	.5	1.0
30	1.1	3.1		5.0		10	7.0	3.1	.4	.1	.5	.9
31	1.1		15			11		4.1		.1	.4	
Total	27.4	83.3	88.8	85.2	213.6	284.7	304.7	164.5	71.3	12.2	8.0	20.6
Mean	0.88	2.78	2.86	2.75	7.63	9.18	10.2	5.31	2.38	0.39	0.26	0.69
Max.	1.1	4.2	8.0	15	12	13	17	7.7	11	1.3	0.5	1.2
Min.	0.6	1.1	-	-	5.2	6.2	5.6	3.1	0.4	0	0	0.3
Ac-ft	54	165	176	169	424	565	604	326	141	24	16	41
Calendar year 1960: Max 428 Min 0.1 Mean 14.6 Acre-feet 10,600												
Water year 1960-61: Max 17 Min 0 Mean 3.74 Acre-feet 2,700												

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 4-15, Dec. 20 to Feb. 5, Feb. 18, 19.

SACRAMENTO RIVER BASIN

11-3915. Big Grizzly Creek near Portola, Calif.

Location.--Lat 39°52'42", long 120°27'55", in NW¼NE¼ sec.12, T.23 N., R.13 E., on left bank 4.8 miles north of Portola and 5.4 miles upstream from mouth.

Drainage area.--44.6 sq mi.

Records available.--October 1925 to September 1932, October 1950 to September 1953, June 1954 to September 1961. Prior to October 1952, published as Grizzly Creek near Portola.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,580 ft (from topographic map). Oct. 26, 1925, to Sept. 30, 1932, at datum 2.04 ft higher.

Average discharge.--17 years, 37.4 cfs (27,080 acre-ft per year).

Extremes.--Maximum discharge during year, 185 cfs Jan. 31 (gage height, 3.46 ft); maximum gage height, 3.66 ft Jan. 31 (ice jam); minimum daily discharge, 0.1 cfs for many day.

1925-32, 1950-53, 1954-61: Maximum discharge, 2,680 cfs Mar. 26, 1928 (gage height, 9.54 ft, present datum), from rating curve extended above 330 cfs; minimum, 0.1 cfs many days in 1931, 1955, 1960-61.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions for irrigation of about 400 acres above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 24 to Nov. 2, July 3-13, July 20 to Sept. 7)

1.16	0.1	1.8	10
1.2	.2	2.0	18
1.3	.5	2.2	27
1.4	1.1	2.5	46
1.5	2.4	2.9	96
1.6	4.5		

Discharge in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.6	4.2	0.9	*2.4	17	43	24	22	0.2	*0.1	0.1
2	.4	*.5	7.8	.9	2.4	*2.8	47	26	*26	.2	.2	.1
3	.4	.9	6.9	.8	17	21	50	*20	13	.1	.1	.1
4	.4	1.0	6.3	.8	10	15	5.8	24	8.7	.1	.1	.1
5	.5	.7	3.8	.7	9.0	12	4.0	17	6.3	.1	.1	.1
6	.5	.9	2.0	.7	8.0	6.3	*33	1.8	5.0	.1	.1	.1
7	.6	1.1	*1.5	.9	8.0	.9	30	20	3.8	.1	.1	*.1
8	.6	1.3	1.2	1.0	8.7	12	2.4	14	3.1	.1	.1	.1
9	.6	1.1	1.1	1.3	4.0	15	2.4	12	2.4	.1	.1	.1
10	.6	1.0	1.1	1.9	4.5	1.6	2.1	1.9	2.0	.1	.1	.1
11	.6	1.3	1.1	*2.4	2.6	2.2	1.8	2.4	1.9	.1	.1	.2
12	.5	2.0	1.2	2.7	1.4	2.6	2.4	3.0	1.9	.1	.1	.1
13	.6	2.3	1.2	2.4	1.2	3.1	2.6	2.4	1.5	*.2	.1	.1
14	.6	1.6	1.3	2.2	1.0	3.5	2.1	1.6	1.2	.1	.1	.1
15	.6	1.1	1.4	2.5	9.0	4.7	1.6	1.4	1.0	.1	.1	.1
16	.5	1.0	1.8	2.2	8.0	2.4	1.6	1.2	.8	.1	.1	.1
17	.5	1.0	3.5	1.8	8.0	1.8	1.6	1.1	.7	.1	.1	.2
18	.6	2.0	4.5	1.6	7.0	2.3	1.6	9.9	.6	.1	.1	.2
19	.6	3.0	5.2	1.6	7.0	3.8	1.3	10	.5	.1	.1	.2
20	.6	3.3	4.2	1.6	8.0	4.9	1.1	1.1	.4	.1	.1	.2
21	.6	2.4	3.5	1.8	9.0	3.1	*1.2	10	.3	.1	.1	.1
22	.6	2.2	3.1	1.9	10	3.3	1.3	8.1	.2	.2	.1	.1
23	.6	1.8	2.9	2.4	1.2	6.2	1.6	7.2	.2	.2	.1	.2
24	.6	2.2	2.2	2.5	1.2	4.2	2.1	6.3	.2	.2	.1	.2
25	.6	2.5	1.8	3.5	1.2	3.8	2.9	5.5	.2	.2	.1	.2
26	.6	2.7	1.5	4.0	1.2	4.9	5.8	5.0	.2	.2	.1	.2
27	.6	1.6	1.3	4.2	1.0	4.3	5.7	4.8	.2	.2	.1	.2
28	.6	1.9	1.2	3.8	1.0	2.6	5.4	4.5	.2	.2	.1	.2
29	.6	1.8	1.1	3.8	-	2.8	3.7	4.0	.1	.2	.1	.2
30	.6	1.8	1.1	6.3	-	3.2	2.8	3.8	.1	.2	.2	.2
31	.5	-	1.0	7.9	-	3.6	-	7.2	-	.1	.1	-
Total	17.3	48.7	82.0	144.1	380.7	885.3	881	422.3	104.7	4.3	3.3	4.3
Mean	0.56	1.62	2.65	4.65	13.9	28.6	29.4	13.6	3.49	0.14	0.11	0.14
Max.	0.6	3.3	7.8	7.9	4.5	62	59	30	26	0.2	0.2	0.2
Min.	0.4	0.6	1.0	0.7	7.0	6.3	11	3.8	0.1	0.1	0.1	0.1
Ac-ft	34	97	163	286	713	1,760	1,150	838	208	8.5	6.5	8.5

Calendar year 1960:

Max 342

Min 0.1

Mean 22.0

Acre-feet 15,960

Water year 1960-61:

Max 79

Min 0.1

Mean 8.18

Acre-feet 5,930

Peak discharge (base, 410 cfs)--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 6-15, Dec. 24 to Jan. 5, Feb. 3-7, 12-26.

SACRAMENTO RIVER BASIN

757

11-3925. Middle Fork Feather River near Clio, Calif.

Location--Lat 39°45'10", long 120°35'40", in SE $\frac{1}{4}$ sec.23, T.22 N., R.12 E., on left bank 0.6 mile upstream from Frazier Creek, 1.0 mile northwest of Clio, and 22 miles southeast of Bairsden.

Drainage area--686 sq mi (revised).

Records available--October 1925 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 4,380 ft (from topographic map). Prior to July 29, 1953, at site 0.5 mile downstream at different datum.

Average discharge--36 years, 268 cfs (194,000 acre-ft per year).

Extremes--Maximum discharge during year, 552 cfs Jan. 31 (gage height, 5.93 ft); minimum, 4.4 cfs Aug. 3.
1925-61: Maximum discharge, 14,400 cfs Dec. 23, 1955 (gage height, 15.77 ft), from rating curve extended above 6,300 cfs; minimum, 4.3 cfs Sept. 5, 1934.

Remarks--Records good except those for periods of indefinite stage-discharge relation, which are fair. Diversions for irrigation of about 40,000 acres above station, of which 14,500 acres receive supplemental water of about 7,000 acre-ft annually from Little Truckee River.

Rating table, except periods of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

1.9	5.0	2.6	31
2.0	7.0	3.0	62
2.1	9.5	3.5	114
2.2	12.5	4.0	175
2.4	20	5.0	324

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	17	174	44	*178	84	90	104	106	14	6.0	8.5
2	12	*19	143	43	149	*95	96	98	*115	14	*5.4	8.2
3	12	21	115	43	171	98	108	89	90	12	5.4	7.5
4	12	19	115	42	150	83	118	81	74	14	5.4	7.7
5	13	19	110	43	145	80	103	*80	69	15	5.4	7.7
6	13	20	80	42	133	87	*85	76	74	14	6.4	7.7
7	14	21	*62	44	108	82	77	72	84	13	6.4	*7.0
8	15	20	52	46	96	87	69	69	84	12	6.8	7.7
9	15	21	46	51	138	116	60	61	77	12	7.0	8.0
10	15	25	46	56	165	106	59	92	67	11	6.4	8.0
11	15	32	50	*57	223	112	55	85	60	10	6.6	8.8
12	16	45	52	61	206	114	58	88	51	10	7.2	8.8
13	16	48	53	61	212	112	59	85	45	*10	8.2	9.0
14	15	40	55	62	233	114	57	77	40	10	7.7	9
15	15	37	57	64	232	141	50	70	34	10	8.0	
16	15	40	58	64	203	116	46	70	30	11	7.2	
17	15	80	99	59	167	116	49	76	28	11	7.5	
18	15	130	90	54	143	101	58	80	25	9.8	7.0	
19	15	82	86	52	135	112	55	80	24	9.5	7.5	9
20	15	76	88	48	124	149	48	82	21	9.0	9.0	
21	15	66	80	47	115	131	48	74	19	9.0	8.8	
22	15	79	72	45	113	108	71	67	18	9.0	8.0	
23	15	76	66	52	104	120	80	60	17	9.0	8.0	
24	15	72	61	58	93	123	99	55	16	9.2	7.7	9
25	15	66	60	60	104	117	115	51	15	7.8	8.0	
26	16	100	58	75	93	112	124	49	15	7.2	8.0	
27	16	72	56	79	85	117	153	47	15	7.2	8.2	
28	16	66	54	77	84	100	148	44	14	6.8	8.8	
29	16	64	47	85	-	85	129	44	13	6.4	9.5	9
30	16	69	48	89	-	82	114	45	14	6.8	12	
31	16	-	47	212	-	87	-	55	-	6.6	9.2	
Total	456	1542	2280	1915	4102	3287	2481	2206	1354	3163	2327	2576
Mean	14.7	51.4	73.5	61.8	146	106	82.7	71.2	45.1	10.2	7.51	8.59
Max.	16	130	174	212	233	149	158	104	115	14	12	-
Min.	12	17	47	42	84	80	46	44	13	6.4	5.4	-
Ac-ft	904	3,060	4,520	3,800	8,140	6,520	4,920	4,380	2,690	627	462	511

Calendar year 1960 : Max 3,250 Min 8.7 Mean 160
Water year 1960-61 : Max 233 Min 5.4 Mean 56.0 Acres-feet 116,500
Acres-feet 40,530

Peak discharge (base, 850 cfs)--No peak above base.

* Discharge measurement made on this day.

Note.--Stage-discharge relation indefinite Oct. 1 to Nov. 18, Sept. 14-30.

SACRAMENTO RIVER BASIN

11-3935. Middle Fork Feather River below Sloat, Calif.

Location--Lat 39°52'00", long 120°46'15", in SW $\frac{1}{4}$ sec. 8, T.23 N., R.11 E., on right bank 0.6 mile downstream from Bell Bar Creek, 1.1 miles west of Bell Bar, and 2.2 miles west of Sloat.

Drainage area--819 sq mi (revised).

Records available--October 1940 to September 1961. Records for water year 1941 incomplete, yearly estimate published in WSP 1315-A.

Gage--Water-stage recorder. Altitude of gage is 4,010 ft (from topographic map). Prior to Sept. 9, 1953, at site 0.6 mile upstream at different datum.

Average discharge--21 years, 552 cfs (399,600 acre-ft per year).

Extremes--Maximum discharge during year, 834 cfs Jan. 31 (gage height, 4.36 ft); minimum, 30 cfs Sept. 3, 4.

1940-61: Maximum discharge, 31,200 cfs Dec. 23, 1955 (gage height, 19.25 ft), from rating curve extended above 8,200 cfs on basis of slope-area measurement of peak flow; minimum, 28 cfs Sept. 8, 14, 1955.

Remarks--Records good except those for periods of doubtful or no gage-height record, which are fair. Flow slightly regulated by millpond at Sloat. Diversions for irrigation of about 1,000 acres between stations near Clito and below Sloat. See Remarks for station near Clito.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 1

Dec. 1 to Sept. 30

2.5	41	2.4	28
2.7	72	2.6	56
3.0	144	2.8	100
3.5	325	3.0	160
		3.5	350
		4.0	610

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	54	288	90	*390	195	285	400	420	68	40	39
2	42	*52	314	86	328	*198	318	368	*435	64	*38	34
3	42	60	188	85	350	216	395	*364	386	62	38	34
4	44	62	d175	84	283	198	460	359	364	62	36	32
5	44	58	d170	86	265	195	420	336	346	62	36	33
6	49	65	d155	85	248	202	*368	332	332	60	38	33
7	54	67	*138	85	213	198	346	305	332	58	39	32
8	52	62	110	90	202	198	305	305	323	54	39	33
9	51	64	98	95	269	240	301	328	301	51	39	35
10	54	64	100	100	485	240	293	475	276	48	38	34
11	57	70	110	*105	517	240	285	435	365	48	36	35
12	57	120	115	103	455	237	332	395	248	*48	38	36
13	55	122	120	108	395	237	297	372	240	48	40	36
14	55	103	125	111	395	248	277	372	220	48	38	36
15	54	100	130	111	405	330	258	*72	209	48	36	36
16	52	98	140	111	386	289	277	72	195	48	36	38
17	52	100	190	111	332	285	323	40	168	46	35	40
18	52	254	180	105	293	273	359	435	160	45	35	42
19	52	166	170	100	273	262	301	395	147	43	36	40
20	52	133	180	95	258	336	269	495	134	42	39	39
21	52	122	170	95	248	314	262	445	128	40	39	38
22	52	120	160	93	240	297	301	435	108	39	38	38
23	54	117	140	95	226	336	305	430	100	40	35	36
24	52	122	130	103	216	346	301	395	95	39	35	36
25	52	117	120	108	230	341	332	382	90	39	34	38
26	54	163	120	120	220	323	341	372	83	38	35	38
27	54	139	115	138	202	330	364	318	78	36	33	38
28	54	122	110	131	195	297	377	301	76	38	35	38
29	54	110	100	138	-	265	395	289	72	38	40	38
30	54	110	95	160	-	265	395	289	70	39	*45	38
31	54	-	92	414	-	273	-	293	-	40	43	-
Total	1,500	3,116	4,548	3,541	8,519	8,204	9,842	11,566	6,401	1,479	1,162	1,093
Mean	51.6	104	147	114	304	265	328	373	213	47.7	37.5	36.4
Max.	57	254	314	414	517	346	460	495	435	68	45	42
Min.	42	52	92	84	195	195	258	289	70	36	33	32
Ac-ft	3,170	6,180	9,020	7,020	16,900	16,270	19,520	22,940	12,700	2,930	2,300	2,170

Calendar year 1960: Max 8,070 Min 40 Mean 382 Acre-feet 248,500

Water year 1960-61: Max 517 Min 32 Mean 167 Acre-feet 121,100

Peak discharge (base, 2,200 cfs)--No peak above base.

* Discharge measurement made on this day.

Note--Doubtful gage-height record Dec. 4-6. No gage-height record Dec. 8 to Jan. 10.

SACRAMENTO RIVER BASIN

759

11-3945. Middle Fork Feather River near Merrimac, Calif.

Location.--Lat 39°42'30", long 121°16'15", in NE $\frac{1}{4}$ sec. 2, T.21 N., R.6 E., on right bank 400 ft downstream from bridge on Milsap Bar Road, 500 ft downstream from Little North Fork, 4.5 miles southeast of Merrimac, and 20 miles northeast of Oroville.

Drainage area.--1,068 sq mi (revised).

Records available.--October 1951 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,560 ft (from topographic map).

Average discharge.--10 years, 1,397 cfs (1,011,000 acre-ft per year); median of yearly mean discharges, 1,190 cfs (862,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,620 cfs Jan. 31 (gage height, 7.88 ft); minimum, 108 cfs Oct. 4.

1951-61: Maximum discharge, 62,000 cfs Dec. 23, 1955 (gage height, 21.2 ft); from rating curve extended above 13,000 cfs on basis of comparison of upstream and downstream peak discharges and study of runoff per square mile for intervening areas; minimum, 92 cfs Jan. 2, 1960.

Remarks.--Records good. No diversions between stations below Sloat and near Merrimac.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 1

Dec. 2 to Sept. 30

2.3	88
2.5	133
3.0	263
3.5	420
4.0	625
5.0	1,210

2.3	110
2.5	145
3.0	280
4.0	670
5.0	1,230
6.0	2,110
7.0	3,310

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	135	933	310	2,060	630	1,270	1,510	1,250	286	159	136
2	110	133	1,360	301	1,580	634	1,500	1,440	1,230	274	159	128
3	110	143	795	292	1,520	656	1,920	1,400	1,140	268	155	123
4	108	152	553	286	1,190	634	2,180	1,360	1,090	262	152	119
5	112	152	515	280	1,010	666	2,020	1,280	1,030	259	148	119
6	145	152	447	289	920	666	1,750	1,400	974	259	148	119
7	*158	198	390	292	860	630	1,600	1,290	932	259	157	119
8	140	180	362	301	790	634	1,450	1,240	905	250	152	119
9	131	160	338	380	1,920	715	1,400	1,290	860	241	150	117
10	128	160	324	387	2,200	730	1,360	1,880	810	232	146	121
11	128	203	328	348	2,290	765	1,300	1,760	775	229	144	119
12	145	359	310	334	1,870	755	1,430	1,580	740	223	142	119
13	140	452	304	331	1,480	735	1,320	1,520	690	218	142	119
14	138	379	301	328	1,320	790	1,240	1,480	652	215	146	119
15	133	280	304	324	1,370	1,290	1,170	1,500	620	208	138	119
16	128	250	469	324	1,280	1,140	1,240	1,510	*594	202	136	119
17	128	249	1,140	317	1,150	1,110	1,400	1,520	558	200	134	128
18	128	642	956	310	1,040	1,030	1,480	1,590	523	192	132	136
19	131	527	755	296	950	1,010	*1,290	1,710	491	190	132	132
20	128	338	584	292	900	1,240	1,150	1,650	463	182	136	128
21	131	307	566	286	865	1,210	1,120	1,510	435	180	138	124
22	131	283	519	283	840	1,220	1,160	1,470	408	178	134	123
23	131	278	483	283	795	1,760	1,110	1,430	387	175	130	123
24	131	399	455	295	755	1,690	1,040	1,320	370	175	126	119
25	133	516	427	301	735	1,560	1,060	1,270	348	172	124	119
26	140	630	412	362	720	1,480	1,100	1,260	334	170	124	119
27	143	479	394	427	675	1,450	1,120	1,130	317	166	124	119
28	138	369	373	401	648	1,350	1,200	1,070	304	161	126	119
29	135	*319	356	435	-	1,240	1,330	1,020	296	161	*130	117
30	135	319	342	*661	-	1,200	1,410	1,060	289	159	134	117
31	135	-	328	3,090	-	1,220	-	1,040	-	157	138	-
Total	4,064	9,143	16,123	13,146	33,733	31,840	41,120	43,490	19,815	6,503	4,336	3,657
Mean	131	305	520	424	1,205	1,027	1,371	1,403	660	210	140	122
Max.	158	642	1,360	3,090	2,290	1,760	2,180	1,880	1,250	286	159	136
Min.	108	133	301	280	648	630	1,040	1,020	289	157	124	117
Ac-ft	8,060	18,130	31,980	26,070	66,910	63,150	81,560	86,260	39,300	12,900	8,600	7,250

Calendar year 1960: Max 23,800 Min 108 Mean 958 Acra-feet 695,600
 Water year 1960-61: Max 3,090 Min 108 Mean 622 Acra-feet 450,200

Peak discharge (base, 7,000 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-3948. South Fork Feather River above Little Grass Valley Reservoir, Calif.

Location.--Lat 39°45'07", long 120°57'26", in NW 1/4 sec. 22, T. 22 N., R. 9 E., on right bank about 0.6 mile upstream from maximum pool elevation of Little Grass Valley Reservoir, 0.5 mile downstream from unnamed tributary and 5 miles north of LaPorte.

Drainage area.--8.09 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,080 ft (from topographic map).

Extremes.--Maximum discharge during year, 129 cfs May 18 (gage height, 2.83 ft); minimum daily, 0.1 cfs Oct. 3, 4, Aug. 26.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No storage or diversion above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.22	0.1
1.3	.3
1.4	.9
1.5	2.1
1.6	4.2
1.7	7.0
1.8	11
2.0	22
2.2	37
2.4	58
2.7	103

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.3	1.6	3.8	3.8	17	34	57	70	3.1	0.3	0.2
2	.2	.3	9.0	3.8	4.4	17	48	56	62	3.2	.3	.2
3	.1	.4	5.0	3.6	4.1	17	72	59	59	2.7	.3	.2
4	.1	.4	4.0	3.4	3.2	16	89	58	58	2.7	.3	.2
5	.2	.4	3.6	3.4	2.8	16	84	55	52	2.5	.3	.2
6	.4	.5	4.0	3.2	2.6	15	77	56	48	2.3	.3	.2
7	.3	.8	2.9	2.9	2.4	14	71	52	46	2.3	.3	.2
8	.2	*.8	2.5	2.9	2.2	14	64	*56	41	2.1	.3	.2
9	.2	.7	2.5	4.0	6.5	14	64	63	35	1.8	.3	.2
10	.2	.6	2.3	4.0	7.4	13	61	88	33	1.6	.3	.2
11	.2	1.2	2.3	3.8	7.7	13	62	68	31	1.4	.3	.2
12	.2	2.3	2.1	3.8	5.0	12	63	62	28	1.3	.3	.2
13	.2	2.7	2.1	3.6	4.3	13	57	64	26	1.2	.2	*.2
14	.2	2.3	2.1	3.4	3.9	16	55	66	23	1.2	.2	.2
15	.2	1.3	2.3	3.6	3.8	20	56	71	*20	1.1	.2	.2
16	.2	1.0	3.6	3.6	3.3	16	66	*76	18	.9	.2	.2
17	.2	1.1	14	3.6	3.0	17	77	82	16	.8	.2	.2
18	.2	7.9	9.8	3.8	2.7	16	*71	93	14	.7	.2	.2
19	*.2	3.2	7.8	3.8	2.5	18	58	98	12	.7	.2	.2
20	.2	1.8	6.4	3.8	2.5	23	50	83	10	.6	.2	.2
21	.2	1.6	5.9	3.8	2.4	*24	46	78	9.0	.6	.2	.2
22	.2	1.4	5.6	3.8	2.4	26	42	82	7.8	.6	.2	.2
23	.2	1.5	5.3	3.8	2.1	39	36	77	6.7	a .6	.2	.2
24	.2	2.7	5.3	3.8	2.1	35	33	71	6.2	a .6	*.2	.2
25	.2	3.4	5.0	4.0	2.0	31	33	72	5.6	a .6	.2	.2
26	.2	7.0	4.8	5.3	1.8	30	32	64	5.0	a .5	.1	.2
27	.2	2.9	4.5	6.2	1.7	28	33	70	4.5	*a .5	.2	.2
28	.2	2.0	4.2	5.9	1.7	26	*37	55	4.0	.4	.2	.2
29	.2	2.0	4.0	6.2	—	26	45	51	3.8	.4	.2	.2
30	.3	2.0	3.8	1.2	—	28	54	50	3.6	.4	.2	.2
31	.2	—	3.8	6.9	—	30	—	*49	—	.4	.2	.2
Total	6.4	56.5	156.5	195.6	94.3	64.0	1,670	2,082	758.2	39.8	7.3	6.0
Mean	0.21	1.88	5.05	6.31	33.7	20.6	55.7	67.2	25.3	1.28	0.24	0.20
Max.	0.4	7.9	16	69	77	39	89	98	70	3.2	0.3	0.2
Min.	0.1	0.3	2.1	2.9	17	12	32	49	3.6	0.4	0.1	0.2
Ac-ft	13	112	310	468	1,870	1,270	3,310	4,130	1,500	79	14	12

Calendar year 1960:

Max —

Min —

Mean —

Acre-feet —

Water year 1960-61:

Max 98

Min 0.1

Mean 18.0

Acre-feet 13,010

Peak discharge (base, 120 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-9	4p.m.	2.81	124	5-18	7p.m.	2.83	129

* Discharge measurement made on this day.

a No gage-height record.

Note.--Stage-discharge relation affected by ice Nov. 13, 14, 25-27, Dec. 28 to Jan. 5, Jan. 12, 13, 15-22.

11-3950.3 South Fork Feather River below Little Grass Valley Dam, Calif.

Location.--Lat 39°43'26", long 121°01'17" in SW 1/4 sec. 31, T.22 N., R.9 E., on left bank 0.1 mile downstream from Little Grass Valley Dam, 0.7 mile downstream from Ice Creek and 3.5 miles northwest of LaPorte.

Drainage area.--25.9 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,830 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,280 cfs Feb. 9 (gage height, 8.09 ft); maximum gage height, 8.49 ft Jan. 31 (backwater from debris); minimum discharge recorded, 0.3 cfs Oct. 20.

Remarks.--Records fair, except those for periods of indefinite stage-discharge relation and those for periods of no gage-height record, which are poor. No storage or diversion above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	1.6	4.0	5	176	49	125	224	142	15	4	1.6
2	1.4	1.7	22		220	50	206	204	126	13	4	1.6
3	1.1	2.1	18		188	49	371	208	115	12	4	1.6
4	1.3	2.3	16		130	47	500	192	109	11	4	1.6
5	1.3	2.1	15		103	45	492	176	*101	10	4	1.6
6	4.3	2.7	14	*5.3	87	47	436	240	90	9	3.5	1.6
7	3.0	5.9	14	5	74	45	364	180	85	8.5	3.5	1.6
8	2.0	*3.8	14	5	66	44	308	*168	77	8	3.5	1.6
9	1.8	4.2	14	5	513	44	290	180	68	7.5	3.5	1.6
10	1.9	3.4	12		581	44	260	360	60	7	3.5	1.6
11	2.9	8.9	12		581	45	250	315	62	6.5	3	1.6
12	1.7	17	10		350	44	280	292	58	6	3	1.6
13	1.5	12	10		250	46	236	289	50	5.5	3	*1.6
14	1.5	9.7	10	5	200	57	208	280	46	5	3	1.6
15	1.5	8.2	10		200	80	196	267	*39	5	3	1.7
16	1.5	9.5	15		151	61	228	*262	37	4.5	2.5	1.7
17	1.4	9.5	32		120	57	275	241	33	4	2.5	1.8
18	1.7	4.2	23		97	54	*265	239	31	3.5	2.5	1.8
19	*1.5	32	18	6	85	62	212	239	28	4	2.5	1.9
20	1.5	19	12		79	108	168	211	25	4.5	2.5	1.9
21	1.6	19	10		75	*93	148	190	22	5	2	2.0
22	1.5	15			71	103	136	182	21	5.5	2	*2.0
23	1.6	13			65	240	122	169	18	5	2	1.9
24	1.6	18			61	172	112	155	19	5	*1.7	1.8
25	1.6	27			60	133	110	148	19	5	1.7	1.8
26	1.8	35	8	8	54	112	110	142	18	4.5	1.7	1.7
27	1.8	25			52	101	112	131	18	*4.6	1.7	1.6
28	1.7	18			50	87	*125	125	17	4.5	1.7	1.6
29	1.6	16			—	91	168	115	16	4.5	1.7	1.5
30	1.7	16			25	95	196	120	16	4.5	1.7	1.5
31	1.6	—	—	300	—	105	—	*118	—	4.5	1.7	—
Total	54.2	399.5	429	499.3	4,739	2,410	7,009	6,362	1,566	202.1	84.6	50.6
Mean	1.75	13.3	13.8	16.1	169	77.7	234	205	52.2	6.52	2.73	1.69
Max.	4.3	42	40	300	581	240	500	360	142	15	—	—
Min.	1.1	1.6	—	—	50	44	110	118	16	—	—	—
Ac-ft	108	793	851	990	9,400	4,780	13,900	12,620	3,110	401	168	100
Calendar year 1960 :				Max	—	Min	—	Mean	—	Acre-feet	—	
Water year 1960-61 :				Max	581	Min	—	Mean	65.2	Acre-feet	47,220	

* Discharge measurement made on this day.

Note.--Stage-discharge relation indefinite Dec. 1 to Jan. 31, July 1 to Sept. 30 (no gage-height record Aug. 1-23).

SACRAMENTO RIVER BASIN

11-3952. South Fork Feather River below diversion dam, near Strawberry Valley, Calif.

Location.--Lat 39°38'51", long 121°07'04", in NE¼SE¼ sec.30, T.21 N., R.8 E., on right bank 0.1 mile downstream from diversion dam, 3.1 miles upstream from Rock Creek and 5.8 miles north of Strawberry Valley.

Drainage area.--37.7 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 3,535.02 ft above mean sea level (levels by Oroville-Wyandotte Irrigation District).

Extremes.--Maximum discharge observed during year, 1,380 cfs Feb. 9 (gage height, 4.10 ft), from rating curve extended above 400 cfs; minimum, 3.0 cfs Oct. 24.

Remarks.--Records good except those computed from once or twice-daily staff-gage readings, which are fair, and those for periods of no gage-height record, which are poor. No diversion. Minor regulation from construction work upstream.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		5.5	75	31	*g354	g74	a220	g262	a170	a25	8.2	5.5
2		5.5	91	30	a370	g51	a300	g236	a190	a23	8.5	5.2
3		5.8	61	*27	a430	g87	a416	g243	a210	a21	7.8	4.9
4		6.1	48	a22	a350	a84	a590	g234	a190	a20	7.8	5.2
5		6.1	40	a21	a300	a82	a555	g249	a160	a18	8.2	5.8
6	a5	6.7	35	a20	a260	g80	g460	a260	a140	a17	8.2	4.9
7		12	*34	a19	g255	g74	*g400	a240	a130	a16	8.5	4.9
8		11	31	a20	g290	g79	a360	g237	a120	a15	8.2	4.9
9		8.2	29	a22	g960	g92	a300	g237	a110	a14	8.5	4.6
10		8.2	28	a23	g777	g78	g286	g432	a100	a13	6.8	4.2
11		12	28	a21	a640	a74	g258	g392	a90	a12	7.4	4.6
12	6.4	31	26	a19	a540	a76	g297	g339	a80	9.9	8.5	*5.7
13	5.5	29	26	a20	g445	g80	g255	a330	a70	8.8	8.5	4.6
14	4.9	21	25	a20	g336	g102	g237	a330	*g62	8.2	7.8	4.6
15	4.6	16	25	a20	g384	g166	a230	*g332	a60	8.2	6.8	4.4
16	4.3	16	38	a20	g300	g134	a240	g311	a55	7.1	6.4	4.6
17	4.3	18	100	a20	g246	g126	*g249	g272	a50	5.2	6.1	5.2
18	4.6	60	83	a20	g213	a130	g243	g276	a45	6.8	7.1	6.1
19	4.6	47	70	a20	a180	a150	g243	a260	a40	9.9	5.8	5.5
20	4.6	32	61	a20	g158	g201	g204	a240	a35	10	7.8	5.2
21	4.6	30	56	a20	g148	g180	g201	a230	a33	10	7.8	4.9
22	4.9	*27	53	a20	a130	*g185	a170	a220	a30	11	5.5	4.9
23	4.9	21	51	a20	*g126	g424	a160	a210	a28	11	*6.8	4.9
24	*4.9	29	48	a20	g119	g368	g143	a200	a28	10	6.4	4.6
25	4.9	41	45	a22	a110	a300	g156	a190	a29	10	6.1	4.6
26	5.5	53	43	a25	a108	a250	*g158	a180	a30	*9.2	5.8	4.6
27	5.8	37	40	a32	g106	g228	g162	a170	a30	9.2	6.8	4.6
28	5.8	29	37	a30	g97	g190	a180	a170	a30	8.2	6.8	4.6
29	*5.5	26	37	a27	—	g180	a200	a170	a28	8.5	6.1	4.6
30	5.2	25	35	a50	—	g182	a230	a160	a27	9.6	5.8	4.6
31	5.2	—	33	a600	—	g182	—	a160	—	7.8	5.8	—
Total	156.0	675.1	1432	1301	8732	4689	8103	7772	2400	3726	2226	1475
Mean	5.03	22.5	46.2	42.0	312	151	270	251	80.0	12.0	7.18	4.92
Max.	6.4	60	100	600	960	424	590	432	210	25	8.5	6.1
Min.	4.3	5.5	25	19	97	51	143	160	27	5.2	5.5	4.2
Ac-ft	309	1,340	2,840	2,580	17,320	9,300	16,070	15,420	4,760	739	443	293

Calendar year 1960 :

Max -

Min -

Mean -

Acra-feet -

Water year 1960-61 :

Max 960

Min 4.2

Mean 98.6

Acra-feet 71,410

* Discharge measurement made on this day.

a No gage-height record.

g Computed from once or twice-daily staff-gage readings.

SACRAMENTO RIVER BASIN

763

11-3953. Lost Creek above Sly Creek Reservoir, Calif.

Location.--Lat 39°37'05", long 121°05'19", in NE 1/4 sec. 4, T.20 N., R.8 E., on left bank 0.4 mile upstream from French Creek, and 3.8 miles north of Strawberry Valley.

Drainage area.--14.1 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,570 ft (from topographic map).

Extremes.--Maximum discharge during year, 295 cfs Jan. 31 (gage height, 3.80 ft); minimum, 3.5 cfs Sept. 29, 30.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	3.5	2.2	38
1.6	6.0	2.5	68
1.7	9.0	3.0	135
1.8	13	3.5	230
2.0	24		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	6.0	61	13	102	30	76	74	49	14	7.8	5.2
2	5.5	6.3	38	12	96	30	98	70	41	14	7.8	4.8
3	* 5.2	6.3	23	*12	88	30	129	66	37	13	7.5	4.8
4	5.2	6.9	18	12	65	29	136	60	34	13	7.2	4.5
5	5.2	7.2	15	11	52	31	123	55	32	13	7.2	4.5
6	* 8.7	7.5	13	11	46	29	106	69	31	13	7.2	4.5
7	8.1	12	*13	11	*42	28	*94	64	30	13	7.2	4.5
8	6.9	11	11	11	39	29	82	58	28	12	7.2	4.5
9	5.8	* 9.8	10	13	142	32	76	55	27	12	6.6	4.0
10	5.8	9.0	9.8	14	120	30	70	75	26	11	6.3	4.0
11	6.0	16	9.8	13	120	36	66	79	25	12	6.3	4.0
12	6.3	27	9.0	13	90	34	69	78	24	11	6.3	*3.8
13	6.3	20	9.0	12	73	34	64	78	23	11	6.3	3.8
14	5.8	16	9.0	12	64	41	58	76	* 22	11	6.0	3.8
15	5.5	12	9.0	12	69	69	54	*72	22	11	6.0	3.8
16	5.5	11	18	12	60	53	53	65	20	10	6.0	3.8
17	5.2	12	88	11	55	52	53	59	20	10	5.8	4.5
18	5.0	46	53	11	49	48	51	57	19	9.8	5.8	5.5
19	5.0	18	38	11	45	52	47	55	19	9.4	5.8	5.5
20	5.0	13	31	11	42	80	43	50	18	9.4	6.0	5.0
21	5.0	14	28	11	41	72	45	46	18	9.4	6.0	4.5
22	5.0	14	25	10	40	* 78	45	43	16	9.0	5.8	4.2
23	4.5	*14	23	11	*37	123	43	42	16	9.0	*5.5	4.2
24	4.5	16	22	11	36	106	40	39	16	8.7	5.5	4.2
25	* 4.8	31	21	11	34	86	42	37	16	8.7	5.5	4.0
26	5.2	32	19	18	34	78	* 44	37	16	* 8.7	5.5	4.0
27	5.5	16	18	21	32	75	48	34	15	8.4	5.2	3.8
28	5.8	18	17	19	31	68	54	33	14	8.1	5.2	3.8
29	5.5	11	16	20	-	64	62	32	14	7.8	5.5	3.5
30	5.8	12	15	47	-	64	68	39	14	7.8	5.5	3.5
31	6.0	-	14	*203	-	68	-	41	-	7.8	5.2	-
Total	174.8	451.0	703.6	620	1744	1679	2039	1738	702	326.0	192.7	128.5
Mean	5.64	15.0	22.7	20.0	62.3	54.2	68.0	56.1	23.4	10.5	6.22	4.28
Max.	8.7	46	88	203	142	123	136	79	49	14	7.8	5.5
Min.	4.5	6.0	9.0	10	31	28	40	32	14	7.8	5.2	3.5
Ac-ft	347	895	1,400	1,230	3,460	3,330	4,040	3,450	1,390	647	382	255

Calendar year 1960 :

Max 7

Min -

Mean -

Acre-feet -

Water year 1960-61 :

Max 203

Min 3.5

Mean 28.8

Acre-feet 20,830

Peak discharge (base, 250 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
1-31	10a.m.	3.80	295	2-9	4p.m.	3.73	278

SACRAMENTO RIVER BASIN

11-3960. Lost Creek near Clipper Mills, Calif.

Location.--Lat 39°34'25", long 121°08'25", in SW¼ sec.24, T.20 N., R.7 E., on left bank 0.3 mile downstream from Lost Creek Reservoir, 0.3 mile downstream from Pinkard Creek, and 2.8 miles north of Clipper Mills.

Drainage area.--30.0 sq mi (revised).

Records available.--October 1927 to September 1941, October 1948 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,170 ft (from topographic map).

Average discharge.--27 years, 73.0 cfs (52,850 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 560 cfs probably Jan. 31 (gage height, 3.05 ft); no flow for many days.

1927-41, 1948-61: Maximum discharge, 5,000 cfs Dec. 22, 1955 (gage height, 6.90 ft), from rating curve extended above 150 cfs on basis of studies of downstream peak discharges and runoff per square mile for intervening areas; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are poor. Storage in Lost Creek Reservoir (capacity, 5,780 acre-ft with 5 ft of flashboards) above station was 1,178 acre-ft on Sept. 30, 1960, and 1,394 acre-ft on Sept. 30, 1961. Oroville-Wyandotte Canal diverts water at Lost Creek dam.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.1	0	1.0	22
.2	.4	1.3	44
.3	1.1	1.6	76
.4	2.4	2.0	148
.5	4.1	2.5	295
.7	9.3		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	0	0.8	0	190	37	130	97	53	1.5	8.7	11
2	18	0	1.1	0	170	23	146	97	43	1.4	9.0	11
3	18	0	.4	*0	140	22	180	92	38	1.3	9.3	11
4	18	0	.1	0	110	20	191	87	34	1.3	9.3	12
5	*7.4	0	.1	0	90	26	191	77	30	1.2	9.7	12
6	.5	0	.1	0	70	29	150	93	27	1.1	10	12
7	.4	0	0	0	*60	22	*144	95	26	1.1	10	12
8	.2	0	0	0	59	23	67	80	24	1.1	10	12
9	.2	*0	0	0	221	41	26	75	23	1.1	10	12
10	.3	0	0	0	222	27	29	107	22	1.0	10	12
11	.3	.1	0	0	170	34	34	122	21	.9	10	12
12	.3	.1	0	0	150	36	47	118	20	.9	10	13
13	.3	.6	0	0	140	32	79	113	18	.9	10	*13
14	.3	.4	0	0	130	33	74	105	17	5.2	10	13
15	.4	.1	0	0	120	135	68	*98	16	7.8	10	13
16	.3	.1	.1	0	110	80	64	87	*15	8.1	10	14
17	.3	0	.5	0	100	89	*62	82	14	8.1	10	14
18	.3	.4	.5	0	90	64	61	70	14	8.1	10	14
19	.3	.1	.4	0	80	65	59	68	13	8.1	10	14
20	*.2	0	.3	0	75	124	55	60	12	8.1	10	15
21	.2	.1	.2	0	70	116	58	57	11	7.3	10	15
22	.1	0	.1	0	65	118	80	52	9.7	7.3	10	15
23	.1	0	0	0	58	214	65	49	8.4	7.3	11	15
24	.1	.1	0	0	*54	219	57	45	7.8	7.3	*11	15
25	0	.4	0	0	53	186	58	40	7.6	7.3	11	15
26	0	.6	0	0	50	172	61	36	7.3	8.7	11	16
27	0	.3	0	0	48	191	61	34	7.0	9.7	11	16
28	0	.1	0	0	47	153	64	32	6.2	*9.3	11	17
29	.1	.1	0	0	-	139	82	30	5.9	9.3	11	17
30	0	.1	0	0	-	130	90	31	3.7	9.0	11	17
31	0	-	0	290	-	130	-	44	-	8.7	11	-
Total	84.6	3.7	4.7	290	294.2	2,730	2,533	2,273	554.6	159.5	315.0	410
Mean	2.73	0.12	0.15	9.35	105	88.1	84.4	73.3	18.5	5.15	10.2	13.7
Max.	18	0.6	1.1	290	222	219	191	122	53	9.7	11	17
Min.	0	0	0	0	47	20	26	30	3.7	0.9	8.7	11
Ac-ft	168	7.3	9.3	575	5,840	5,410	5,020	4,510	1,100	316	625	813
(+)	-1,095	+811	+2,434	+1,543	+292	-40	+686	0	-229	-774	-1,670	-1,742
(*)	1,670	1,230	615	575	292	1,240	1,160	1,320	1,890	2,060	2,060	1,930
Mean††	12.1	34.5	49.8	43.7	116	107	115	94.8	46.4	26.0	16.6	16.8
Ac-Ft††	743	2,050	3,060	2,690	6,420	6,610	6,870	5,830	2,760	1,600	1,020	1,902
Calendar year 1960: Max	2,790	Min	0	Mean	55.5	Ac-ft	40,280	Mean††	80.2	Ac-ft††	58,240	
Water year 1960-61: Max	290	Min	0	Mean	33.7	Ac-ft	24,390	Mean††	56.2	Ac-ft††	40,650	

* Discharge measurement or observation of no flow made on this day.

† Change in contents in acre-feet, in Lost Creek Reservoir, furnished by Oroville-Wyandotte Irrigation District.

* Diversion, in acre-feet, to Oroville-Wyandotte Canal.

†† Adjusted for change in contents and diversion.

Note.--No gage-height record Dec. 16 to Jan. 3, Jan. 6 to Feb. 7, Feb. 10-24.

765

Location--Lat 39°33'08", long 121°16'49", in NE¼ sec.34, T.20 N., R.6 E., on right bank 1.2 mile downstream from Forbestown Ravine and 2.4 miles north of Forbestown.

Records available.--October 1957 to September 1961 (discontinued).

Extremes.--Maximum discharge during year, 1,780 cfs Jan. 31 (gage height, 5.49 ft); minimum, 14 cfs Nov. 2.

1957-61: Maximum discharge, 14,500 cfs Feb. 8, 1960 (gage height, 11.40 ft); minimum, that of Nov. 2, 1960.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Lost Creek Reservoir and diversions to Oroville-Wyandotte Canal.

Peak discharge (base, 2,000 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 20 to Jan. 4.

SACRAMENTO RIVER BASIN

11-3965. Palermo Canal at Enterprise, Calif.

Location.--Lat 39°32'05", long 121°20'40", in NW¼ sec.6, T.19 N., R.6 E., on left bank 400 ft downstream from intake at diversion dam on South Fork Feather River, 1 mile east of highway bridge at Enterprise, and 11 miles east of Oroville.

Records available.--October 1911 to September 1961. Prior to October 1926, published as Palermo Land and Water Co. canal at Enterprise.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 650 ft (from topographic map). Prior to Nov. 17, 1932, staff gages at several sites about 1 mile downstream at various datums. Nov. 17, 1932, to Oct. 21, 1934, staff gage at present site and datum.

Average discharge.--50 years, 18.6 cfs (13,470 acre-ft per year).

Extremes.--1911-1961: Maximum daily discharge, 41 cfs June 14, 17, 1918, July 10-30, 1922; no flow at times in most years.

Remarks.--Records good above 1 cfs and poor below. Canal diverts from left bank of South Fork Feather River 1 mile above Enterprise. Water is used for irrigation near Oroville.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	16	0.6	3.2	4.3	7.7	7.5	15	24	30	30	26
2	29	16	.6	3.1	4.3	7.7	7.5	14	23	30	31	26
3	29	16	.6	3.1	4.0	7.5	7.5	14	23	30	30	26
4	29	18	.6	3.1	5.6	7.5	7.3	14	23	30	31	26
5	29	17	.6	3.1	5.6	7.7	7.1	14	22	30	31	26
6	*25	16	.6	3.1	5.6	7.7	11	13	23	31	32	26
7	23	16	.3	3.2	5.6	7.7	16	12	23	31	32	26
8	24	17	.6	3.2	5.4	7.7	15	8.9	23	31	32	26
9	22	16	1.4	3.2	3.2	7.7	16	11	23	31	32	26
10	20	15	1.4	3.2	1.7	7.7	16	12	23	32	32	26
11	20	9.7	1.4	3.2	1.7	7.7	16	20	23	31	30	26
12	20	5.6	1.4	3.2	1.6	7.7	17	20	23	31	29	26
13	20	5.2	1.4	3.2	1.5	7.7	17	20	23	31	30	26
14	19	4.9	1.4	3.2	1.5	7.7	17	20	27	30	29	26
15	19	7.2	1.4	3.2	1.5	7.9	17	20	29	32	30	*26
16	18	8.5	1.4	3.2	1.5	7.7	16	20	29	33	28	26
17	18	8.5	1.4	4.3	*1.5	7.9	16	21	30	32	30	26
18	18	8.7	1.4	4.7	1.5	7.7	16	23	30	33	30	26
19	18	8.9	1.4	5.6	3.3	7.7	16	23	30	33	29	26
20	17	8.7	1.4	5.6	7.7	7.7	16	23	30	33	28	26
21	18	8.7	1.4	5.6	7.7	7.7	16	23	30	32	28	26
22	17	4.3	1.4	5.6	7.7	7.7	16	23	31	32	26	26
23	17	.7	1.4	6.1	7.7	7.5	16	23	30	31	26	26
24	17	.6	1.4	7.2	7.7	7.5	16	23	30	32	27	26
25	17	.6	1.4	7.2	7.7	7.9	16	23	30	30	*27	26
26	18	.6	1.4	7.2	7.7	7.9	16	22	30	30	27	26
27	18	.6	1.4	7.2	7.7	7.9	*15	23	30	31	27	26
28	17	*6	1.4	7.2	7.7	7.9	15	23	30	*31	26	26
29	17	.6	1.4	7.2	-	7.9	15	23	*30	30	26	26
30	17	.6	2.6	7.4	7.7	7.7	15	23	30	29	26	26
31	17	-----	3.2	4.9	-----	7.7	-----	23	-----	32	26	-----
Total	636	256.7	39.7	143.7	130.2	239.3	430.9	589.9	805	965	898	780
Mean	20.5	8.56	1.28	4.64	4.65	7.72	14.4	19.0	26.8	31.1	29.0	26.0
Max.	29	18	3.2	7.4	7.7	7.9	17	23	31	33	32	26
Min.	17	0.6	0.3	3.1	1.5	7.5	7.1	8.9	22	29	26	26
Ac-ft	1,260	509	79	285	258	475	855	1,170	1,600	1,910	1,780	1,550
Calendar year 1960:			Max 31	Min 0	Mean 16.5					Acre-feet 12,020		
Water year 1960-61:			Max 33	Min 0.3	Mean 16.2					Acre-feet 11,730		

* Discharge measurement made on this day.

11-3970. South Fork Feather River at Enterprise, Calif.

Location.--Lat 39°32'15", long 121°20'45", in NW¼ sec.6, T.19 N., R.6 E., on left bank 0.5 mile upstream from McCabe Creek, 1 mile upstream from highway bridge at Enterprise, and 11 miles east of Oroville.

Drainage area.--132 sq mi (revised).

Records available.--October 1911 to September 1961. Monthly discharges for October 1911 published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 640 ft (from topographic map). Prior to Oct. 18, 1930, staff gage at site half a mile downstream at different datum.

Average discharge.--50 years, 311 cfs (225,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,050 cfs Jan. 31 (gage height, 8.65 ft); minimum, 0.8 cfs Aug. 5.

1911-61: Maximum discharge, 19,200 cfs Dec. 22, 1955 (gage height, 21.60 ft), from rating curve extended above 4,600 cfs on basis of computed flow over diversion dam a quarter of a mile upstream; no flow Aug. 9, 10, Sept. 24-30, 1950.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Storage and diversions above station for irrigation of about 4,500 acres in Oroville-Wyandotte Irrigation District. (See preceding page for records for Palermo Canal and Remarks for Lost Creek near Clipper Mills).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.7	0.8	3.0	54
1.8	1.7	3.5	114
1.9	2.7	4.0	198
2.0	4.1	5.0	416
2.2	8.5	6.0	730
2.4	15	7.0	1,130
2.7	30		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	1.5	173	60	793	200	470	447	272	13	2.8	4.5
2	5.8	1.5	395	56	653	180	521	442	248	10	3.0	4.0
3	6.0	1.6	194	55	646	190	650	432	216	8.5	2.8	18
4	6.0	1.7	128	53	467	180	754	411	198	8.0	1.9	6.8
5	6.2	1.7	100	50	385	200	754	378	180	7.2	.8	6.8
6	* 2.4	2.7	82	51	342	200	670	424	164	7.0	.9	6.8
7	1.5	4.3	73	51	316	180	614	434	152	5.6	2.4	8.6
8	1.5	7.5	68	50	283	180	506	383	137	4.9	3.1	13
9	1.5	8.0	60	52	911	230	406	376	126	4.1	1.8	7.0
10	1.5	6.0	57	61	984	190	390	506	114	3.8	1.5	5.4
11	1.6	15	59	59	1,020	203	368	512	104	3.5	1.0	5.6
12	1.6	6.6	55	55	920	202	403	479	100	2.6	1.1	5.2
13	1.6	152	58	50	740	185	421	479	92	2.4	1.3	5.4
14	1.6	110	55	48	560	207	395	448	80	2.3	1.4	5.2
15	1.5	6.2	55	47	590	587	361	437	71	4.1	4.5	* 5.2
16	1.5	39	68	46	480	*424	361	424	64	5.2	1.4	6.2
17	1.5	36	254	43	*400	503	385	406	57	4.1	1.2	8.0
18	1.5	122	283	*42	360	380	395	393	51	4.3	1.4	9.7
19	1.5	114	193	39	330	342	366	*408	46	3.7	3.0	20
20	1.5	67	155	39	310	479	324	373	42	3.3	4.7	9.1
21	1.5	58	129	39	300	434	327	335	38	3.0	4.7	8.5
22	1.4	57	117	39	290	437	403	322	33	2.8	4.9	8.8
23	1.5	52	110	38	270	734	380	302	29	2.7	4.0	8.8
24	1.4	62	100	39	250	734	350	285	26	2.8	3.8	8.8
25	1.4	136	92	39	240	684	320	258	24	2.7	*3.5	8.5
26	1.6	314	88	50	230	611	310	246	24	2.8	3.7	8.5
27	1.6	139	83	70	220	667	*307	222	22	3.0	4.3	8.2
28	1.5	* 97	79	64	210	566	324	202	18	*3.0	5.2	8.8
29	1.5	72	73	79	-	506	366	189	17	2.8	4.9	9.4
30	1.5	68	67	145	-	476	411	182	16	2.8	4.9	8.8
31	1.4	-	64	1,110	-	470	-	228	-	3.1	4.7	-
Total	69.3	1,874.5	3,567	2,719	13,500	11,761	13,012	11,363	2,761	1,391	90.6	247.6
Mean	2.24	62.5	115	87.7	482	379	434	367	92.0	4.49	2.92	8.25
Max.	6.2	314	395	1,110	1,020	734	754	512	272	13	5.2	20
Min.	1.4	1.5	55	38	210	180	307	182	16	2.3	0.8	4.0
Ac-ft	137	3,720	7,080	5,220	26,780	23,330	25,810	22,540	5,480	276	180	491

Calendar year 1960 : Max 9,750 Min 1.4 Mean 255 Acra-feet 184,900
 Water year 1960-61 : Max 1,110 Min 0.8 Mean 167 Acra-feet 121,200

Peak discharge (base, 2,400 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 12 to Mar. 10, Apr. 23-26.

SACRAMENTO RIVER BASIN

11-3975. Feather River at Bidwell Bar, Calif.

Location.--Lat 39°33'15", long 121°26'15", in NE 1/4 sec. 32, T.20 N., R.5 E., on left bank just upstream from suspension bridge at Bidwell Bar, 2 miles upstream from North Fork and 7 miles northeast of Oroville.

Drainage area.--1,347 sq mi (revised).

Records available.--October 1911 to September 1961. Published as Middle Fork Feather River near Oroville prior to September 1925 and as Middle Fork Feather River at Bidwell Bar October 1925 to September 1950. Monthly discharge only for October 1911 published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 290 ft (from topographic map). Prior to Sept. 17, 1930, staff gage at same site and datum.

Average discharge.--50 years, 1,848 cfs (1,338,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,890 cfs Jan. 31 (gage height, 9.86 ft); minimum, 151 cfs Sept. 13.

1911-61: Maximum discharge, 104,000 cfs Dec. 23, 1955 (gage height, 25.5 ft), from rating curve extended above 26,000 cfs on basis of studies of upstream and downstream peaks; minimum, 88 cfs Jan. 8, 1937.

Maximum stage known, 32.1 ft in January 1862.

Remarks.--Records good. Flow slightly regulated by small reservoirs above station. Several diversions above station for irrigation. See Remarks for stations upstream.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31

Feb. 1 to Sept. 30

2.2	170	2.1	146
2.5	232	2.5	220
3.0	360	3.0	350
4.0	740	4.0	710
5.0	1,320	5.0	1,300
6.0	2,140	6.0	2,140
7.0	3,230	8.0	4,640
9.0	6,240		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	174	190	1,060	486	3,830	952	2,120	2,270	1,730	392	198	173
2	176	190	2,430	466	2,890	940	2,350	2,240	1,730	371	200	166
3	176	192	1,310	452	2,840	958	2,930	2,140	1,590	359	196	171
4	174	208	940	444	2,140	934	3,460	2,100	1,490	350	192	160
5	174	212	785	434	1,760	988	3,330	1,960	1,400	344	188	156
6	200	208	686	438	1,560	1,030	2,910	2,100	1,310	341	184	154
7	*236	236	606	448	1,460	952	2,690	2,100	1,240	335	196	156
8	208	276	558	444	1,300	940	2,390	1,920	1,200	326	*200	159
9	194	243	*522	494	3,490	1,150	2,220	1,940	1,130	312	196	159
10	188	230	490	582	4,160	1,090	2,140	2,640	1,060	300	192	152
11	192	261	498	526	4,250	1,120	2,030	2,680	1,000	306	188	154
12	204	570	462	498	3,400	1,130	2,180	2,440	970	312	186	152
13	202	845	458	483	2,600	1,070	2,120	2,360	900	282	182	152
14	196	718	452	476	2,260	1,140	1,990	2,270	850	274	184	152
15	192	522	452	469	2,380	2,420	1,850	2,250	800	266	198	152
16	188	399	590	466	2,210	2,120	1,890	2,230	*755	264	194	154
17	184	381	1,590	458	1,940	2,170	2,060	2,220	710	256	186	169
18	184	970	1,670	452	1,730	1,780	2,180	2,250	670	256	171	182
19	186	928	1,220	438	1,560	1,680	*1,970	2,410	636	247	166	194
20	186	590	1,010	430	1,460	2,160	1,760	2,330	600	242	175	182
21	186	502	885	424	1,380	2,060	1,690	2,110	566	231	178	171
22	186	466	815	424	1,330	2,040	1,920	2,040	542	229	176	169
23	186	430	755	420	1,250	3,170	1,810	1,970	506	224	169	173
24	188	578	704	427	1,250	3,150	1,620	1,870	489	220	162	169
25	188	763	668	438	1,120	2,940	1,630	1,760	468	216	159	162
26	192	1,630	638	506	1,100	2,680	1,670	1,740	454	212	159	162
27	200	906	618	622	1,030	2,730	1,680	1,600	437	210	159	162
28	194	659	586	602	988	2,460	1,780	1,440	416	204	164	164
29	192	558	562	630	-	2,230	1,940	1,400	407	200	166	164
30	190	530	538	*985	-----	2,100	2,100	1,410	398	198	171	159
31	190	-----	514	4,670	-----	2,100	-----	1,510	-----	198	173	-----
Total	5,906	15,391	25,072	19,532	58,668	54,384	64,410	63,700	26,454	9,477	5,608	4,904
Mean	191	513	809	630	2,055	1,754	2,147	2,055	882	273	181	163
Max.	236	1,630	2,430	4,670	4,250	3,170	3,460	2,680	1,730	392	200	194
Min.	174	190	452	420	988	934	1,620	1,400	398	198	159	152
Ac-ft	11,710	30,530	49,730	38,740	116,400	107,900	127,800	126,300	52,470	16,810	11,120	9,730
Calendar year 1960 :				Max	40,600	Min	168	Mean	1,479	Acre-feet	1,074,000	
Water year 1960-61 :				Max	4,670	Min	152	Mean	966	Acre-feet	699,200	

Peak discharge (base, 9,000 cfs, revised).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

769

11-3990. Lake Almanor near Prattville, Calif.

Location.--Lat 40°10'30", long 121°05'25", in NW¹ sec.28, T.27 N., R.8 E., at outlet tower at dam on North Fork Feather River, 5 miles southeast of Prattville.

Drainage area.--491 sq mi (revised).

Records available.--July 1913 to September 1961. Monthly contents only for some periods, published in WSP 1315-A. Published as "at Prattville" prior to 1937.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level.

Extremes.--Maximum contents observed during year, 554,000 acre-ft June 20 (elevation, 4,469.47 ft); minimum observed, 272,300 acre-ft Dec. 28 (elevation, 4,453.60 ft).

1913-61: Maximum contents, 798,900 acre-ft June 9, 1928 (elevation, 4,480.5 ft); minimum, 5,230 acre-ft Feb. 5, 1918 (elevation, 4,416.1 ft).

Remarks.--Lake is formed by earth-fill dam; storage began in July 1913; dam raised to elevation 4,455 ft above mean sea level in 1917 and to 4,515 ft above mean sea level in 1927. Usable capacity, 649,800 acre-ft between elevations 4,400 (bottom of outlet to river) and 4,474 ft (present upper storage limit). Water is diverted by tunnel and penstock to Butt Valley Reservoir and powerhouse for use in Caribou powerplants; some water is also released down North Fork Feather River (see following page). Figures given herein represent total contents at 12 p.m. interpolated from readings made at 5 p.m. All contents are available for diversion to Butt Valley Reservoir except 15,700 acre-ft (below elevation 4,429 ft) which can only be released down river.

Cooperation.--Record of contents furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in thousands of acre-feet)

4,453	263.2	4,458	342.1	4,464	447.6
4,454	278.4	4,459	358.9	4,466	485.3
4,455	293.8	4,460	376.0	4,468	524.3
4,456	309.6	4,461	393.4	4,470	564.8
4,457	325.7	4,462	411.2		

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	322.5	297.6	288.8	274.9	298.7	340.3	388.0	447.0	519.8	524.9	441.7	359.0
2	321.3	296.6	290.7	275.8	301.1	341.1	391.8	449.8	522.6	522.8	438.6	356.0
3	320.0	295.5	291.2	275.9	302.5	341.4	390.8	451.7	524.7	519.8	436.0	353.3
4	318.3	295.2	291.0	275.6	304.2	342.2	392.4	453.2	527.3	516.2	433.1	351.0
5	317.3	294.6	289.3	276.1	305.3	344.1	394.3	455.2	529.7	513.5	430.0	348.8
6	317.6	294.4	288.2	276.1	306.4	346.4	396.2	456.9	531.9	510.7	427.1	346.9
7	318.3	294.7	287.1	276.7	307.8	347.9	397.7	455.2	534.4	508.3	424.9	344.8
8	318.3	294.6	285.1	277.7	309.4	349.0	399.4	460.8	536.6	505.6	422.6	343.4
9	318.8	294.3	283.3	278.8	311.8	350.0	401.2	462.5	538.8	502.7	420.2	342.9
10	319.1	293.3	283.1	279.9	314.6	351.1	403.5	465.9	540.6	499.8	417.3	342.8
11	319.4	294.4	282.4	280.2	317.1	352.3	405.7	468.7	542.2	497.8	414.8	341.8
12	315.9	296.9	279.4	280.5	318.8	353.6	408.1	470.6	544.0	495.5	412.4	340.8
13	313.9	299.6	276.8	280.6	320.4	354.6	409.7	472.7	546.0	492.8	409.9	340.1
14	311.5	298.5	274.9	281.6	322.1	356.3	411.7	475.0	547.6	490.1	407.1	339.8
15	311.7	295.7	274.2	282.4	324.2	359.4	413.7	476.5	549.1	487.6	404.2	339.0
16	312.8	293.2	274.4	282.8	325.5	360.4	416.0	479.0	550.3	485.1	401.2	339.5
17	312.8	291.0	276.1	283.6	326.5	362.3	418.0	481.4	550.9	482.8	398.6	340.3
18	311.8	290.9	277.3	284.0	327.5	362.9	420.4	484.1	551.7	480.3	395.7	339.6
19	310.7	289.2	278.6	283.9	328.6	364.3	422.9	486.6	553.6	478.0	392.9	338.6
20	309.7	287.0	279.1	284.2	330.1	366.5	424.7	488.9	554.0	475.6	389.9	339.5
21	308.5	285.1	278.3	284.8	331.7	367.9	426.9	491.6	551.9	472.9	387.5	339.9
22	307.8	285.3	276.7	284.8	332.6	369.6	429.8	494.3	549.5	469.9	385.0	339.5
23	307.4	284.8	275.5	285.6	333.2	371.7	432.2	497.2	547.0	467.4	382.6	339.8
24	306.7	286.2	274.6	285.8	334.0	373.4	434.4	499.6	545.0	464.8	379.6	339.9
25	305.9	289.8	273.8	286.7	335.4	375.3	436.6	501.9	542.6	462.3	376.8	339.5
26	305.5	292.2	273.2	287.5	336.5	376.6	438.4	504.2	540.0	459.5	372.2	338.3
27	304.4	291.8	272.4	288.4	338.1	378.7	440.2	509.1	536.6	456.5	371.0	337.8
28	303.4	290.4	272.3	289.3	339.0	380.7	441.7	508.7	533.4	453.7	369.4	337.6
29	300.9	288.8	272.4	290.2	---	382.4	443.4	510.7	530.5	450.9	366.9	337.5
30	299.6	287.3	273.0	292.6	-----	384.0	443.9	514.1	528.7	447.2	364.3	337.3
31	298.4	-----	273.8	295.2	-----	385.4	-----	516.8	-----	444.1	361.4	-----
(†)	4,455.20	4,454.54	4,453.70	4,455.09	4,457.81	4,460.54	4,463.80	4,467.62	4,468.22	4,463.83	4,459.16	4,457.71
(‡)	-25,300	-11,100	-13,500	+21,400	+43,800	+46,400	+58,500	+72,900	+11,900	-84,600	-82,700	-24,100

Calendar year 1960..... ‡ -34,700

Water year 1960-61..... ‡ +13,600

† Elevation, in feet, at end of month.

‡ Change in contents in acre-feet.

11-3995. North Fork Feather River near Prattville, Calif.

Location.--Lat 40°10'10", long 121°05'29", in SW¼ sec.28, T.27 N., R.8 E., on left bank 0.5 mile downstream from Almanor Dam, 4.5 miles southeast of Prattville, and 9 miles upstream from Butt Creek.

Drainage area.--493 sq mi (revised).

Records available.--June 1905 to September 1961 (daily discharges for July 1921 to September 1936 include water diverted through Almanor-Butt Creek tunnel). Records for water year 1911 incomplete, yearly estimate published in WSP 1315-A. Published as "below Prattville" prior to 1911. Supplemental records for Almanor-Butt Creek tunnel diversion computed November 1924 to Dec. 30, 1958, as difference of flow between Butt Creek above Almanor-Butt Creek tunnel, see following page (unpublished prior to 1936), and Butt Creek below Almanor-Butt Creek tunnel (unpublished prior to 1936 and since 1959).

Gage.--Water-stage recorder and broad-crested weir. Altitude of gage is 4,380 ft (from topographic map). Prior to Oct. 1, 1936, staff gages or water-stage recorders at several sites within half a mile of present site at various datums.

Average discharge.--56 years, 903 cfs (653,700 acre-ft per year), including diversion from Lake Almanor through Butt Creek tunnel.

Extremes.--Maximum daily discharge during year, 37 cfs June 7-18; minimum daily, 8.3 cfs Dec. 14. Extremes do not include diversions through Butt Valley powerhouse.

1905-61: Maximum discharge, 10,000 cfs Mar. 19, 1907, before construction of dam (gage height, 16.2 ft, at former site), from rating curve extended above 3,700 cfs; no flow Apr. 15, 16, 1914, at times January to April 1919, Apr. 21, 1923.

Remarks.--Records good. Flow regulated by Lake Almanor beginning in 1913 (see preceding page). Water diverted for power from Lake Almanor through old Almanor-Butt Creek tunnel to Butt Creek until Dec. 30, 1958. Diversion through new tunnel and Butt Valley powerhouse began Dec. 31, 1958.

Cooperation.--Water-stage-recorder graph, 18 discharge measurements, and diversion through Butt Valley powerhouse furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 13				Dec. 14 to Sept. 30			
1.5	8.5	1.7	20	1.6	5.5	2.3	30
1.6	14	1.9	38	1.7	8.0	2.5	38
				1.9	14		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	20	11	10	11	10	11	*32	36	35	33	35
2	34	11	10	9.8	11	10	11	*35	36	35	33	35
3	34	11	9.5	9.8	11	10	11	35	36	35	33	34
4	34	11	9.5	11	11	10	10	35	36	35	33	34
5	*35	11	9.5	11	10	11	9.8	35	36	35	33	34
6	35	11	9.5	10	10	11	9.5	35	36	35	33	34
7	35	11	9.5	10	10	11	9.5	35	37	35	33	34
8	35	9.5	9.5	9.8	10	11	9.2	35	37	35	34	35
9	34	*9.0	9.5	9.8	11	11	9.2	35	37	35	35	36
10	34	9.5	9.5	9.8	11	11	9.2	35	37	35	35	36
11	34	10	9.5	*9.8	11	11	9.2	35	37	35	34	35
12	34	11	9.5	9.8	11	11	11	35	37	*35	34	36
13	34	11	9.5	9.8	11	11	11	35	37	35	34	35
14	34	11	8.3	9.8	11	11	10	35	37	34	34	35
15	34	11	*8.9	9.5	11	11	9.2	35	37	34	34	36
16	33	9.5	*10	10	11	11	9.2	35	37	34	34	36
17	33	9.5	11	10	11	11	9.8	36	37	34	34	36
18	34	10	11	10	11	11	10	36	37	34	35	36
19	35	10	10	10	11	11	10	36	36	34	35	36
20	35	10	9.8	10	11	11	10	36	36	34	35	36
21	35	10	9.8	10	*11	11	10	36	36	34	35	36
22	35	10	11	10	11	11	11	36	35	34	34	36
23	35	10	10	10	11	11	11	36	35	34	34	36
24	35	10	10	10	11	11	10	36	35	34	34	36
25	35	10	10	10	11	11	10	36	35	34	34	36
26	35	10	10	10	10	11	10	36	35	34	34	36
27	35	10	10	10	10	11	10	36	35	*34	34	*36
28	35	10	9.8	10	10	*11	20	36	35	33	34	36
29	35	10	9.8	10	-----	11	33	36	35	33	34	35
30	35	10	9.8	10	-----	11	31	36	35	33	34	35
31	35	-----	9.8	11	-----	11	-----	36	-----	33	*34	-----
Total	1,069	3,170	3,045	3,107	3,011	3,377	3,548	1,097	1,083	1,063	1,053	1,062
Mean	34.5	10.6	9.82	10.0	10.8	10.9	11.8	35.4	36.1	34.3	34.0	35.4
Max	35	20	11	11	11	11	33	36	37	35	35	36
Min	33	9.0	8.3	9.5	10	10	9.2	32	35	33	33	34
Ac-ft	2,120	629	604	616	597	668	704	2,180	2,150	2,110	2,090	2,110
(†)	45,410	48,420	47,310	14,610	0	0	625	62	35,540	99,110	102,600	42,620
Mean*	773	825	779	248	10.8	10.9	22.4	36.4	634	1,646	1,702	752
Ac-ft*	47,530	49,050	47,920	15,230	597	668	1,330	2,240	37,690	101,200	104,700	44,730
Calendar year 1960:	Max	45	Min	2.9	Mean	22.7	Ac-ft	16,500	Mean*	694	Ac-ft*	504,000
Water year 1960-61:	Max	37	Min	8.3	Mean	22.9	Ac-ft	16,580	Mean*	625	Ac-ft*	452,900

* Discharge measurement made on this day.

† Diversion, in acre-feet, through Butt Valley powerhouse, furnished by Pacific Gas & Electric Co.

* Adjusted for diversion.

11-4000. Butt Creek above Almanor-Butt Creek tunnel, near Prattville, Calif.

Location.--Lat 40°11'23", long 121°11'23", in NW¼ sec.22, T.27 N., R.7 E., on left bank 0.2 mile upstream from outlet of old tunnel from Lake Almanor to Butt Creek and 2.2 miles southwest of Prattville.

Drainage area.--68.6 sq mi (revised).

Records available.--October 1936 to September 1961. Published as "above tunnel No. 1" 1936-40. Records for water year 1938 published in WSP 1515.

Gage.--Water-stage recorder. Altitude of gage is 4,400 ft (from topographic map). Prior to Nov. 12, 1948, at site 1.5 miles upstream at different datum.

Average discharge.--25 years, 77.0 cfs (55,750 acre-ft per year).

Extremes.--Maximum discharge during year, 311 cfs Feb. 9 (gage height, 1.97 ft); minimum, 22 cfs July 31.

1936-61: Maximum discharge, 2,320 cfs Dec. 11, 1937 (gage height, 6.48 ft, site and datum then in use), from rating curve extended above 170 cfs on basis of shape of later ratings; minimum, 3.2 cfs Dec. 11, 1936.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. No storage above station. Wallack ditch, above station, diverts several cubic feet per second during each irrigation season into Yellow Creek basin.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.3	23	1.1	110
.5	38	1.5	185
.7	57	2.0	320
.9	80		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		31	150	32	114	59	100	94	91	30	24	27
2	27	31	100	31	130	63	115	90	78	30	25	26
3	27	33	64	32	124	60	139	88	73	30	24	26
4	* 27	32	52	32	87	58	148	87	70	29	24	26
5	28	31	44	32	76	57	142	86	67	29	24	26
6		32	37	36	75	57	128	91	61	29	25	27
7	35	35	41	36	75	53	119	90	59	30	37	26
8	33	a 32	37	40	74	55	110	86	56	29	41	26
9	32	a 32	36	47	174	57	110	86	55	29	34	26
10	32	32	38	45	163	57	107	108	53	28	28	26
11	33	53	39	*40	169	58	104	104	52	28	27	26
12	32	56	36	*39	126	56	121	91	52	28	27	26
13	31	37	36	37	102	58	105	88	50	28	27	26
14	30	43	*36	37	96	66	96	87	48	28	26	25
15	30	41	37	37	102	91	93	88	46	27	25	24
16	29	39	43	36	96	72	97	* 87	44	27	25	24
17	29	40	75	37	80	67	107	88	43	27	25	27
18	30	80	74	36	72	65	117	90	42	27	24	25
19	29	52	58	35	69	67	104	100	41	27	25	24
20	a 29	43	50	35	68	76	94	100	38	25	27	23
21	a 29	44	47	36	*68	76	97	97	38	25	27	25
22	a 29	40	44	36	68	83	102	91	36	25	a 25	25
23	a 29	41	43	37	64	126	96	86	35	24	a 24	25
24	29	81	42	39	65	108	93	81	35	24	a 24	25
25	30	78	39	38	65	99	96	78	35	24	25	25
26	30	65	40	47	60	96	93	76	34	* 24	a 25	25
27	31	55	36	48	60	93	88	74	32	24	a 27	* 25
28	31	48	35	43	59	* 84	87	70	31	24	28	25
29	31	48	35	44	—	84	87	68	32	24	29	25
30	31	48	35	53	—	87	88	83	31	25	* 28	25
31	31	—	34	199	—	93	—	79	—	24	27	—
Total	945	1,353	1,513	1,352	2,581	2,281	3,183	2,712	1,458	832	833	762
Mean	30.5	45.1	48.8	43.6	92.2	73.6	106	87.5	48.6	26.8	26.9	25.4
Max.	44	81	150	199	174	126	148	108	91	30	41	27
Min.	27	31	34	31	59	53	87	68	31	24	24	23
Ac-ft	1,870	2,680	3,000	2,680	5,120	4,520	6,310	5,380	2,890	1,650	1,650	1,510

Calendar year 1960: Max 610 Min 24 Mean 60.5 Acra-foot 43,940
 Water year 1960-61: Max 199 Min 23 Mean 54.3 Acra-foot 39,260

Peak discharge (base, 310 cfs).--Feb. 9 (8:30 p.m.) 311 cfs (1.97 ft).

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4011.5. Red Clover Creek near Genesee, Calif.

Location.--Lat 40°03'00", long 120°39'50", in NW 1/4 sec. 5, T.25 N., R.12 E., 0.3 mile downstream from Rock Creek, 4.5 miles east of Genesee, and 9.5 miles east of Taylorsville.

Drainage area.--122 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,830 ft (from topographic map).

Extremes.--Maximum discharge during year, 84 cfs Dec. 1 (gage height, 2.74 ft); minimum, 5.3 cfs Jan. 19, 20, Aug. 1, 2, 1958-61: Maximum discharge, 2,150 cfs, Feb. 8, 1960 (gage height, 6.58 ft); minimum, that of Jan. 19, 20, Aug. 1, 2, 1961. Flood of Feb. 24, 1958, reached a stage of 7.56 ft (discharge, about 4,000 cfs).

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by the California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.5	*8.8	*37	13	40	25	48	31	28	8.4	5.9	7.5
2	7.6	9.3	39	13	*31	26	49	30	40	8.4	5.8	6.9
3	7.1	12	27	*b 13	40	28	53	*30	31	8.1	6.0	6.8
4	7.5	12	20		29	28	54	28	26	8.1	6.1	7.0
5	7.7	11			25	28	*49	26	23	7.8	6.7	6.9
6	8.4	12		b 14	22	*28	45	26	20	8.2	6.7	7.1
7	8.5	12			22	27	41	25	18	7.8	7.9	7.2
8	8.7	10			20	29	35	23	21	7.9	*8.1	7.2
9	8.6	10			35	37	34	22	18	7.4	7.7	7.5
10	8.8	11		b 14	48	41	31	25	15	7.5	6.7	7.4
11	9.2	12	14	b 14	52	44	28	29	15	*7.5	6.3	7.3
12	*9.0	17	14	b 13	47	44	29	31	15	7.4	6.8	7.2
13	9.1	18	13	b 13	39	41	35	30	*15	7.7	7.6	7.3
14	8.8	15	14	b 13	36	43	31	26	14	7.7	8.0	7.2
15	8.7	12	14	b 13	42	49	28	25	13	7.2	7.2	7.1
16	8.5	11	14	b 12	38	45	25	23	14	6.8	7.1	7.5
17	8.5	12	18	b 12	35	42	24	21	12	6.9	6.8	8.3
18	8.3	22	19	b 12	28	44	22	21	11	7.0	6.7	8.0
19	8.3	17	*18	b 11	26	53	21	21	11	6.9	7.2	7.8
20	8.4	13	16	b 11	27	55	19	23	11	6.3	8.3	7.7
21	10	13	15	b 11	29	47	20	22	10	6.7	7.2	7.8
22	9.7	16	15	b 11	31	45	24	21	9.5	6.7	6.8	*8.3
23	8.7	12	14	12	28	58	25	19	9.4	6.5	6.8	8.0
24	8.5	14	b 14	12	25	55	24	18	9.5	6.4	6.6	8.5
25	9.5	15	13	12	27	54	29	17	9.0	6.5	6.9	8.9
26	9.1	16	13	14	29	62	52	17	8.7	7.6	6.7	9.4
27	9.5	13	13	15	26	68	49	17	8.1	6.6	7.0	9.7
28	9.7	13		b 14	25	37	40	16	8.4	6.3	7.0	*10
29	9.3	12	13	14	-	52	35	16	8.1	6.1	7.6	11
30	9.3	12		14	-----	49	33	16	8.4	6.0	8.2	10
31	9.0	-----		36		48		17	-----	6.2	8.2	-----
Total	269.5	393.1	516	426	902	1352	1032	712	460.1	222.6	218.6	238.5
Mean	8.69	13.1	16.6	13.7	32.2	43.6	34.4	23.0	15.3	7.18	7.05	7.95
Max.	10	22	39	36	52	68	54	31	40	8.4	8.3	11
Min.	7.1	8.8	13	11	20	25	19	16	8.1	6.0	5.8	6.8
Ac-ft	535	780	1,020	845	1,790	2,680	2,050	1,410	913	442	434	473
Calendar year 1960:			Max 1,560	Min 6.6	Mean 45.1	Acre-feet 32,730						
Water year 1960-61:			Max 68	Min 5.8	Mean 18.5	Acre-feet 13,370						

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

SACRAMENTO RIVER BASIN

773

11-4012. Indian Creek near Taylorsville, Calif.

Location.--Lat 40°03'35", long 120°49'15", in SW 1/4 sec. 1, T.25 N., R.10 E., on right bank 0.7 mile downstream from Montgomery Creek and 1.5 miles southeast of Taylorsville.

Drainage area.--533 sq mi.

Records available.--May 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,560 ft (from topographic map).

Extremes.--Maximum discharge during year, 464 cfs Apr. 4 (gage height, 3.02 ft); minimum daily, 13 cfs Aug. 2-4.

1957-61: Maximum discharge, 14,000 cfs Feb. 25, 1958 (gage height, 9.75 ft), from rating curve extended above 3,000 cfs; minimum daily, that of Aug. 2-4, 1961.

Flood of Dec. 23, 1955 reached a stage of 11.5 ft.

Remarks.--Some diversions for irrigation upstream.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	*28	*88	43	198	113	263	241	260	30	14	18
2	17	26	197	39	*148	119	300	225	328	30	13	18
3	17	34	126	*44	171	131	386	*235	276	31	13	17
4	16	37	97	46	149	131	438	242	221	a 30	13	17
5	16	39	71	45	118	126	*378	220	195	a 29	15	17
6	20	43	62	48	110	*124	327	222	174	a 29	17	17
7	22	45	55	49	105	121	300	212	158	a 29	22	18
8	21	47	56	49	98	125	271	202	147	a 29	*26	18
9	19	43	50	50	138	150	267	220	135	a 29	23	17
10	21	41	51	51	255	160	254	283	128	a 29	20	17
11	22	48	54	49	300	163	229	275	122	*27	19	17
12	*24	67	51	48	286	175	251	260	115	25	20	18
13	23	74	52	48	220	174	246	259	*103	26	23	18
14	24	66	53	49	187	197	228	251	98	27	21	18
15	24	53	53	48	201	248	207	*254	88	24	20	19
16	23	45	55	49	198	227	218	256	79	22	17	21
17	23	47	75	46	175	213	261	258	72	23	18	21
18	23	86	83	43	149	206	282	264	66	23	16	20
19	26	84	*87	43	138	228	229	285	64	21	17	20
20	24	62	77	43	136	246	200	284	60	21	20	19
21	25	53	72	43	139	235	192	267	58	21	19	19
22	27	49	69	42	147	228	202	251	54	19	18	*20
23	25	44	64	45	135	338	199	233	52	18	17	20
24	23	49	62	44	126	356	185	214	50	18	17	19
25	22	72	60	47	129	326	183	202	48	16	18	19
26	27	86	61	47	130	318	243	196	43	16	17	18
27	27	68	54	54	120	326	249	179	40	16	17	18
28	27	56	53	48	118	292	233	168	40	16	19	*19
29	25	54	47	50	-	263	225	159	36	15	19	19
30	25	49	50	50	-----	255	223	161	32	16	19	22
31	24	-----	46	124	-----	255	-----	174	-----	15	18	-----
Total	700	1595	2131	1524	4524	5569	7669	7152	3342	720	565	558
Mean	22.6	53.2	68.7	49.2	162	212	256	231	111	23.2	18.2	18.6
Max.	27	86	197	124	300	356	438	285	328	31	26	22
Min.	16	26	46	39	98	113	183	159	32	15	13	17
Ac-ft	1,390	3,160	4,230	3,020	8,970	13,030	15,210	14,190	6,630	1,430	1,120	1,110
Calendar year 1960:			Max 4,130	Min 16		Mean 176		Acre-feet 127,600				
Water year 1960-61:			Max 438	Min 13		Mean 102		Acre-ft 73,490				

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4013. Lights Creek near Taylorsville, Calif.

Location.--Lat 40°10'00", long 120°47'35", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.30, T.27 N., R.11 E., on left bank 0.4 mile downstream from Moonlight Creek and 6.7 miles north of Taylorsville.

Drainage area.--57.6 sq mi.

Records available.--July 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,640 ft (from topographic map).

Extremes.--Maximum discharge during year, 180 cfs Apr. 3 (gage height, 2.17 ft); minimum daily, 1.3 cfs Oct. 3.

1957-61: Maximum discharge, 2,120 cfs Feb. 24, 1958 (gage height, 6.24 ft), from rating curve extended above 350 cfs; minimum daily, 0.8 cfs Aug. 11, 1959.

Remarks.--No known storage or diversion above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	*2.5	*3.6	8.2	6.0	2.6	9.4	5.9	8.2	7.1	2.2	2.0
2	1.4	2.8	3.8	7.4	*5.6	3.0	11.7	5.3	6.7	6.7	2.2	1.9
3	1.3	4.0	2.1	*8.4	5.8	3.0	14.4	*5.2	4.7	6.7	2.0	1.8
4	1.5	4.3	1.6	7.7	4.0	2.8	13.7	*5.6	4.2	6.6	1.9	1.7
5	1.4	4.1	1.1	7.8	3.2	2.7	*11.1	5.3	3.8	6.4	1.9	1.7
6	2.2	4.6	9.6	8.5	2.9	*2.7	9.4	5.8	3.5	6.0	2.4	1.7
7	2.3	5.3	9.3	8.4	2.7	2.5	8.4	5.2	3.2	5.7	3.0	1.7
8	2.2	4.4	9.2	8.4	2.6	2.6	7.6	5.0	2.9	5.9	*3.8	1.7
9	2.1	4.4	8.6	1.0	7.0	3.0	7.4	5.1	2.7	5.5	3.3	1.7
10	2.3	4.1	8.9	1.1	9.7	2.9	6.8	7.0	2.6	5.0	2.6	1.7
11	2.6	6.7	9.3	9.5	11.3	3.0	6.6	6.9	2.5	*4.8	2.3	1.7
12	*2.9	1.0	8.4	9.2	8.1	3.1	7.7	6.9	2.3	5.1	2.4	1.6
13	3.0	8.9	8.1	8.9	5.9	3.4	6.4	7.0	*2.1	5.8	2.6	1.5
14	2.8	7.7	8.0	8.9	5.1	4.7	5.8	6.4	1.8	4.9	2.3	1.5
15	2.5	6.4	7.8	8.2	5.7	6.7	5.4	6.2	1.7	4.4	2.0	1.5
16	2.5	5.9	8.9	8.0	5.1	5.5	5.8	5.9	1.6	4.0	1.9	1.7
17	2.6	6.3	2.2	8.0	4.4	5.3	6.5	5.8	1.5	3.7	1.9	2.6
18	2.2	2.1	2.8	7.8	3.9	4.6	6.4	5.7	1.4	3.6	1.8	2.6
19	2.2	1.2	*2.1	7.9	3.6	4.9	5.6	5.7	1.4	3.7	2.0	2.3
20	2.0	8.7	1.8	7.7	3.4	6.0	4.9	5.6	1.2	3.5	2.7	2.1
21	1.9	7.5	1.5	7.8	3.5	5.9	5.0	5.4	1.2	3.4	2.2	2.0
22	1.9	6.6	1.4	7.0	3.4	6.5	4.9	5.1	1.1	3.1	1.8	*2.0
23	2.1	6.6	1.4	7.5	3.1	14.5	4.7	4.8	1.0	3.1	1.6	2.1
24	2.3	1.9	1.3	7.6	3.1	11.6	4.3	4.4	9.7	3.0	1.5	1.9
25	2.2	1.7	1.2	7.7	3.2	9.7	4.6	4.1	9.2	2.8	2.3	1.9
26	2.2	1.4	1.2	8.4	2.8	8.3	5.5	3.9	8.7	2.7	2.2	1.7
27	2.4	1.4	1.2	9.9	2.7	7.8	5.7	3.7	8.2	2.5	2.1	1.7
28	2.3	1.0	1.0	9.0	2.6	7.0	5.8	3.4	8.3	2.4	3.1	1.7
29	2.1	9.7	9.0	9.5	-	7.0	5.9	3.2	7.7	2.4	3.8	*1.7
30	1.9	9.0	9.8	1.1	-----	7.6	5.7	4.2	7.7	2.3	2.8	1.7
31	1.9	-----	9.5	8.8	-----	8.5	-----	4.2	-----	2.3	2.3	-----
Total	66.6	247.5	437.4	343.3	130.4	169.4	213.1	163.9	692.5	135.1	72.9	55.1
Mean	2.15	8.25	14.1	11.1	4.6	54.6	71.0	52.9	23.1	4.36	2.35	1.84
Max.	3.0	21	38	88	113	145	144	70	82	7.1	3.8	2.6
Min.	1.3	2.5	7.8	7.0	2.6	25	4.3	3.2	7.7	2.3	1.5	1.5
Ac-ft	132	491	868	681	2,590	3,360	4,230	3,250	1,370	268	145	109
Calendar year 1960: Max 716 Min 1.1 Mean 28.9 Acre-feet 21,020												
Water year 1960-61: Max 145 Min 1.3 Mean 24.2 Acre-feet 17,490												

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

775

11-4015. Indian Creek near Crescent Mills, Calif.

Location.--Lat 40°05', long 120°56', in SW $\frac{1}{4}$ sec.25, T.26 N., R.9 E., on left bank 0.8 mile upstream from Dixie Creek and 1.5 miles south of town of Crescent Mills.

Drainage area.--739 sq mi (revised).

Records available.--January 1906 to December 1909, September 1911 to March 1918, October 1930 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map). Prior to March 1918, staff gage at site 800 ft upstream at different datum.

Average discharge.--40 years (1906-9, 1911-17, 1930-61), 528 cfs (382,300 acre-feet per year).

Extremes.--Maximum discharge during year, 931 cfs Feb. 11 (gage height, 5.28 ft); minimum, 2.9 cfs July 30.

1906-9, 1911-18, 1930-61: Maximum discharge, 31,500 cfs Dec. 24, 1955 (gage height, 17.80 ft), from rating curve extended above 11,000 cfs on basis of slope-area measurement of peak flow; minimum, 1.7 cfs Aug. 25, 1931.

Remarks.--Records good. Storage in Round Valley Reservoir since 1865 and Taylor Lake since 1929 (combined usable capacity, 5,000 acre-ft). Diversions above station for irrigation of about 11,800 acres, of which 9,700 acres is in Indian and Genesee Valleys.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

(Shifting-control method used Sept. 5-7)

0.9	3.1	2.0	71
1.0	4.7	2.5	135
1.1	7.0	3.0	225
1.2	10	3.5	335
1.4	18	4.0	470
1.6	32	5.0	815

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	28	311	84	494	207	518	380	392	12	4.9	13
2	9.4	30	592	80	452	209	560	368	518	11	5.2	14
3	8.2	38	335	79	473	*221	676	358	419	9.4	5.4	14
4	8.2	46	237	80	365	217	*739	*358	330	11	4.9	14
5	8.5	45	*177	78	283	229	644	335	281	13	3.6	8.8
6	10	49	142	84	255	243	557	345	249	13	3.9	6.8
7	10	51	132	84	241	229	*506	340	223	15	4.4	*7.0
8	12	57	129	89	221	221	449	310	199	13	6.3	7.0
9	12	57	122	*97	352	285	434	318	171	13	9.1	7.9
10	13	58	117	98	584	269	416	395	147	9.7	9.1	8.8
11	13	67	119	95	743	275	385	431	135	6.8	9.1	8.8
12	15	108	110	94	714	279	405	419	130	14	10	8.8
13	16	158	106	93	512	275	402	410	104	11	11	9.4
14	17	144	108	94	416	305	368	390	*86	8.8	10	9.4
15	21	114	107	93	482	518	332	385	95	13	6.1	9.4
16	21	89	110	93	497	458	345	380	86	11	4.9	10
17	20	81	142	89	400	467	370	370	31	9.7	5.2	11
18	20	152	164	86	345	425	380	360	35	8.8	6.8	12
19	22	160	160	84	300	413	325	362	36	8.8	7.0	13
20	20	120	150	86	285	461	290	362	30	6.1	9.1	12
21	20	108	140	86	275	446	295	340	31	6.5	9.1	*14
22	20	103	130	84	277	431	395	318	26	5.8	5.4	13
23	20	100	123	87	263	743	378	298	24	5.8	9.4	13
24	22	116	117	88	247	795	350	275	24	5.8	9.7	12
25	21	138	114	88	263	747	320	251	23	5.4	10	12
26	23	195	115	95	239	662	370	237	23	4.4	12	11
27	23	185	108	111	225	658	398	229	17	4.2	11	9.4
28	24	148	104	106	213	581	388	207	16	4.2	9.7	10
29	27	126	95	106	-	530	378	189	19	3.7	14	10
30	29	124	93	115	-	509	372	203	11	3.6	20	10
31	*30	-	90	430	-	506	-	251	-	*4.5	11	-
Total	5,438	2,995	4,799	3,156	10,416	12,814	12,745	10,174	3,911	272.0	257.3	319.5
Mean	17.5	99.8	155	102	372	413	425	328	130	8.77	8.30	10.6
Max.	30	195	592	430	743	795	739	431	518	14	20	14
Min.	8.2	28	90	78	213	207	290	189	11	3.6	3.6	6.8
Ac-ft	1,080	5,940	9,520	6,260	20,660	25,420	25,280	20,180	7,760	540	510	634

Calendar year 1960:

Max 5,070 Min 4.5

Mean 264

Acra-feet 192,000

Water year 1960-61:

Max 795 Min 3.6

Mean 171

Acra-feet 123,800

Peak discharge (base, 1,100 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4019. Spanish Creek near Quincy, Calif.

Location.--Lat 39°56'45", long 121°00'20", in SW 1/4 sec. 17, T.24 N., R.9 E., on right bank 0.9 mile downstream from Slate Creek and 3.2 miles west of Quincy.

Drainage area.--69.1 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,470 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,600 cfs Jan. 31 (gage height, 5.93 ft); minimum daily, 8.0 cfs Aug. 24.
1958-61: Maximum discharge, 6,450 cfs Feb. 8, 1960 (gage height, 9.23 ft); minimum daily, that of Aug. 24, 1961.

Remarks.--Flow regulated by four small lakes. Probably minor diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	*13	388	39	407	63	199	166	148	20	11	12
2	12	13	*247	36	*339	66	234	154	118	17	11	12
3	13	18	123	*36	274	66	291	*137	101	19	11	13
4	11	18	80	36	187	62	286	136	91	19	11	13
5	11	18	65	36	140	69	*241	132	83	18	10	12
6	13	18	52	36	122	*74	208	138	77	19	11	12
7	11	20	56	34	111	67	186	132	*75	18	*11	15
8	13	16	43	32	100	71	167	125	70	19	11	*11
9	13	15	39	40	370	98	159	130	60	18	11	12
10	13	14	38	42	381	86	152	185	58	*18	9.0	12
11	*13	26	39	39	449	99	144	198	57	17	9.0	11
12	13	62	35	38	305	97	168	180	53	18	9.7	12
13	13	74	34	36	218	93	148	168	52	16	10	11
14	13	60	33	34	184	114	137	150	47	15	10	11
15	15	39	32	34	216	359	125	146	40	16	9.0	12
16	15	33	52	34	197	227	131	144	37	16	8.3	10
17	14	33	187	34	170	205	139	139	36	16	8.3	10
18	13	132	153	32	143	175	148	138	34	16	8.7	13
19	13	57	*116	31	126	181	129	145	32	16	8.7	12
20	13	41	94	32	111	248	117	137	30	15	9.0	12
21	14	38	78	30	107	215	120	128	30	15	9.0	10
22	14	34	67	30	96	216	133	118	29	14	*8.5	10
23	14	33	63	30	90	382	129	109	26	13	8.3	12
24	13	71	58	31	84	333	122	100	27	13	8.0	11
25	14	94	53	30	81	280	128	100	26	12	9.0	9.0
26	16	111	50	40	75	251	143	99	26	12	9.3	9.0
27	15	69	46	54	72	242	144	89	23	13	10	10
28	14	53	43	50	63	214	158	82	21	13	39	11
29	14	49	42	62	-	190	165	79	21	13	16	*11
30	13	54	39	115	-----	186	162	103	20	12	12	10
31	13	-----	40	1,010	-----	188	-----	106	-----	12	12	-----
Total	411	1326	2485	2193	5218	5217	4913	4093	1548	488	338.8	341.0
Mean	13.3	44.2	80.2	70.7	186	168	164	132	51.6	15.7	10.9	11.4
Max.	16	132	388	1,010	449	382	291	198	148	20	39	15
Min.	11	13	32	30	63	62	117	79	20	12	8.0	9.0
Ac-ft	815	2,630	4,930	4,350	10,350	10,350	9,740	8,120	3,070	968	672	676
Calendar year 1960:			Max	3,880	Min	8.4	Mean	103	Acre-feet	74,880		
Water year 1960-61:			Max	1,010	Min	8.0	Mean	78.3	Acre-feet	56,670		

* Discharge measurement made on this day.

11-4020. Spanish Creek above Blackhawk Creek, at Keddle, Calif.

Location.--Lat 40°00'05", long 120°57'20", in NE¼ sec.27, T.25 N., R.9 E., on right bank 200 ft upstream from Blackhawk Creek and 0.9 mile southeast of Keddle.

Drainage area.--184 sq mi.

Records available.--October 1933 to September 1961. Prior to October 1953, published as "at Keddle." October 1911 to September 1933, at site 1.2 miles downstream; records not equivalent owing to inflow.

Gage.--Water-stage recorder. Altitude of gage is 3,250 ft (from topographic map).

Average discharge.--28 years, 256 cfs (185,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,240 cfs Jan. 31 (gage height, 5.70 ft); minimum, 9.2 cfs July 26.

1933-61: Maximum discharge, 13,100 cfs Dec. 23, 1955 (gage height, 12.47 ft), from rating curve extended above 4,400 cfs on basis of slope-area measurement of peak flow; minimum, 3.8 cfs Aug. 12, 1934.

Remarks.--Records good. Flow regulated by five small reservoirs having a combined capacity of 800 acre-ft. Approximately 4,600 acres irrigated above station (from information furnished by U. S. Forest Service). City of Quincy diverts about 450 acre-ft annually for municipal supply.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31

Feb. 1 to Sept. 30

0.7	12	2.6	165	0.6	8.6	1.8	60
.8	14	3.0	295	.8	13	2.1	90
1.0	19	3.5	505	1.0	19	2.5	151
1.4	34	4.0	780	1.2	26	3.0	291
1.8	57	5.0	1,530	1.4	35	3.5	505
2.2	95			1.6	45	4.0	780

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	34	471	64	638	119	298	264	286	30	15	18
2	13	34	550	60	510	121	340	248	248	26	*14	18
3	16	*42	244	60	*452	*121	416	226	198	27	9.8	18
4	15	40	158	59	302	118	434	215	176	26	9.6	18
5	17	36	127	57	235	126	368	198	158	24	11	14
6	38	38	106	63	201	143	317	204	145	26	12	15
7	34	41	98	63	180	136	*284	198	136	30	15	*15
8	31	40	*91	64	166	127	254	183	121	28	14	13
9	30	40	81	71	476	190	248	186	108	20	15	14
10	33	36	79	75	563	164	232	257	106	26	15	11
11	34	42	80	71	704	169	215	284	101	28	14	21
12	32	88	76	67	526	169	257	274	94	*26	16	21
13	32	134	73	67	356	158	242	257	75	23	17	20
14	32	122	71	65	284	171	215	238	80	17	17	18
15	32	87	71	64	350	525	193	229	71	17	16	18
16	33	70	80	63	336	368	198	*229	51	16	16	18
17	32	69	184	63	274	360	226	226	44	14	15	21
18	32	178	214	61	232	306	235	223	37	14	13	21
19	32	112	161	59	206	284	206	232	46	14	12	19
20	32	81	136	59	188	381	186	229	51	11	13	20
21	32	72	119	59	178	328	186	206	48	11	14	19
22	32	67	108	59	171	310	254	201	46	24	12	20
23	32	63	99	59	155	581	238	186	45	18	12	22
24	32	87	93	61	149	525	212	173	41	14	11	19
25	32	117	88	62	149	481	215	152	41	11	19	21
26	34	244	85	74	138	407	226	142	37	9.8	16	19
27	35	150	81	101	130	407	235	134	36	11	18	22
28	34	109	78	90	124	344	248	124	33	13	19	21
29	34	93	74	95	-	313	267	122	32	13	55	19
30	34	93	71	143	-	295	260	138	36	14	24	24
31	34	-	68	1,270	-	291	-	166	-	14	20	-
Total	936	2,459	4,115	3,348	8,373	8,538	7,705	6,344	2,727	595.8	499.4	557
Mean	30.2	82.0	133	108	299	275	257	205	90.9	19.2	16.1	18.6
Max.	38	244	550	1,270	704	581	434	284	286	30	55	24
Min.	13	34	68	57	124	118	186	122	32	9.8	9.6	11
Ac-ft	1,860	4,880	8,160	6,640	16,610	16,930	15,280	12,580	5,410	1,180	991	1,100

Calendar year 1960:

Max 6,010

Min 9.5

Mean 175

Acres-feet 126,900

Water year 1960-61:

Max 1,270

Min 9.6

Mean 127

Acres-feet 91,620

Peak discharge (base, 1,700 cfs).--Jan. 31 (12 m) 2,240 cfs (5.70 ft).

* Discharge measurement made on this day.

11-4030. East Branch of North Fork Feather River near Rich Bar, Calif.

Location.--Lat 40°00'40", long 121°13'00", in SW 1/4 sec. 20, T.25 N., R.7 E., on left bank 0.5 mile upstream from mouth and 1.3 miles west of Rich Bar.

Drainage area.--1,025 sq mi (revised).

Records available.--October 1950 to September 1961 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 2,300 ft (from topographic map). Prior to Nov. 29, 1950, at site 30 ft downstream at same datum.

Average discharge.--11 years, 1,052 cfs (761,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,240 cfs Jan. 31 (gage height, 8.07 ft); minimum, 39 cfs July 28, Aug. 23.
1950-61: Maximum discharge, 48,000 cfs Dec. 23, 1955 (gage height, 16.52 ft), from rating curve extended above 15,000 cfs on basis of study of upstream and downstream peak discharges; minimum, 39 cfs Sept. 6, 7, 1955; July 28, Aug. 23, 1961.

Remarks.--Records good. No storage or diversion between stations on Indian and Spanish Creeks and station near Rich Bar.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.7	39	5.5	535
3.8	49	6.0	810
4.0	75	6.5	1,180
4.2	109	7.0	1,640
4.5	175	7.5	2,240
5.0	325		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	88	675	218	1,610	428	999	762	768	96	46	56
2	57	88	1,500	207	1,120	419	1,080	768	915	86	47	53
3	48	98	792	198	*1,190	*432	1,270	720	804	83	47	55
4	50	113	530	198	887	428	*1,400	702	679	89	43	55
5	50	107	*419	193	702	441	1,250	*662	590	78	42	56
6	59	109	347	207	600	490	1,080	657	540	81	43	49
7	80	119	311	209	560	481	978	674	499	85	44	48
8	72	121	301	215	517	450	880	620	458	86	47	*49
9	71	123	281	*226	776	545	831	620	411	80	48	46
10	71	121	269	238	1,490	550	798	744	374	71	53	47
11	77	133	262	232	1,630	550	750	824	347	74	49	46
12	77	207	259	*223	1,620	565	768	845	332	*72	49	53
13	75	347	247	221	1,150	545	817	786	294	80	53	55
14	75	370	241	218	929	575	720	762	*262	71	53	54
15	75	272	241	215	908	1,130	668	756	244	62	53	53
16	81	212	256	212	1,100	1,070	668	744	232	65	48	53
17	80	193	374	212	880	999	726	732	185	60	45	55
18	80	344	499	207	768	964	744	738	142	59	45	57
19	78	378	428	201	674	873	674	750	131	55	51	57
20	80	269	382	198	620	999	600	726	147	55	46	56
21	78	221	347	201	590	971	585	708	138	50	46	55
22	77	207	344	198	575	922	762	662	138	48	45	59
23	77	198	305	198	550	1,460	750	625	129	59	42	59
24	75	238	291	204	517	1,580	708	600	123	53	41	59
25	77	311	278	204	522	1,570	662	575	119	49	43	56
26	78	512	275	221	499	1,310	684	508	115	46	49	59
27	83	458	265	265	468	1,290	756	504	109	42	49	56
28	85	347	256	275	445	1,170	774	463	104	41	50	55
29	85	285	247	265	-	1,050	780	445	98	45	65	56
30	88	269	235	325	-----	999	780	468	100	46	77	55
31	*88	-----	229	1,760	-----	978	-----	565	-----	*45	61	-----
Total	2,286	6,858	11,686	8,364	23,897	26,234	24,942	20,715	9,527	2,012	1,520	1,622
Mean	73.7	229	377	270	853	846	831	668	318	64.9	49.0	54.1
Max.	88	512	1,500	1,760	1,630	1,580	1,400	845	915	96	77	59
Min.	48	88	229	193	445	419	505	445	98	41	41	46
Ac-ft	4,530	13,600	23,180	16,590	47,400	52,030	49,470	41,090	18,900	3,990	3,010	3,220

Calendar year 1960 : Max 12,100 Min 44 Mean 551 Acre-feet 399,700

Water year 1960-61 : Max 1,760 Min 41 Mean 383 Acre-feet 277,000

Peak discharge (base, 5,000 cfs)--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

779

11-4035. Bucks Lake near Bucks Lodge, Calif.

Location.--Lat 39°53'45", long 121°12'10", in NW¼ sec.33, T.24 N., R.7 E., in intake tower No. 2 upstream from dam on Bucks Creek, 2 miles northwest of Bucks Lodge, and 15 miles west of Quincy.

Drainage area.--28.6 sq mi (revised).

Records available.--1927-28 (year-end contents only, published in WSP 1315-A), October 1928 to September 1961. Prior to October 1954, published as Bucks Creek Reservoir near Bucks Ranch.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Feather River Power Co.).

Extremes.--Maximum contents during year, 78,120 acre-ft June 19 (elevation, 5,141.35 ft); minimum, 36,600 acre-ft Jan. 27 (elevation, 5,113.29 ft).
1928-61: Maximum contents, 105,800 acre-ft June 23, 1938 (elevation, 5,157.1 ft); minimum, 12,330 acre-ft Feb. 27, 1929 (elevation, 5,090.7 ft).

Remarks.--Reservoir is formed by concrete-faced, rock-fill dam completed in 1927; storage began in May 1927. Capacity, 101,400 acre-ft between elevations 5,064.75 (sill of outlet gate) and 5,154.85 ft (spillway crest) above mean sea level. Released water flows down Bucks Creek to Lower Bucks Lake, where it enters tunnel that discharges into Grizzly Creek, thence to Bucks Creek powerhouse. Figures given herein represent total contents, of which 274 acre-ft is not available for release.

Cooperation.--Records of contents furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Capacity table (elevation, in feet, and contents, in acre-ft)

5,110	32,500	5,130	60,000
5,115	38,800	5,135	67,800
5,120	45,500	5,140	75,900
5,125	52,500	5,145	84,300

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48.4	42.2	42.8	40.0	38.7	44.8	50.2	59.8	73.3	72.7	58.3	47.1
2	48.1	42.0	43.0	40.1	39.2	44.9	50.7	60.1	73.7	72.2	57.8	47.0
3	47.9	41.9	43.1	39.9	39.5	45.0	51.1	60.4	74.2	71.8	57.3	47.0
4	47.7	41.4	43.2	39.5	39.7	45.1	51.4	60.7	74.6	71.3	57.0	47.0
5	47.5	41.2	43.3	39.1	39.8	45.4	51.8	61.1	74.9	70.8	56.5	47.0
6	47.4	41.1	43.3	38.7	40.0	45.6	52.0	61.5	75.3	70.4	56.1	47.0
7	47.2	40.9	43.3	38.3	40.2	45.7	52.3	61.8	75.6	70.1	55.6	47.0
8	46.9	40.7	43.4	38.0	40.4	45.9	52.6	62.1	75.9	69.6	55.1	47.0
9	46.7	40.5	43.2	37.8	41.1	46.0	52.9	62.6	76.2	69.1	54.7	47.0
10	46.5	40.4	43.5	37.6	41.5	46.2	53.1	63.2	76.5	68.7	54.2	47.0
11	46.3	40.4	43.6	37.5	42.1	46.3	53.5	63.7	76.7	68.2	53.8	47.0
12	46.1	40.7	43.5	37.4	42.3	46.4	53.9	64.1	76.9	67.7	53.3	47.0
13	45.9	41.0	43.3	37.3	42.5	46.5	54.1	64.5	77.2	67.3	52.9	47.0
14	45.7	41.1	43.0	37.4	42.7	46.8	54.4	64.8	77.4	66.8	52.4	47.0
15	45.4	41.1	42.7	37.5	43.0	47.1	54.7	65.2	77.5	66.3	51.9	47.0
16	45.2	41.1	42.6	37.4	43.2	47.4	55.1	65.7	77.8	65.9	51.5	47.0
17	45.0	41.3	42.5	37.2	43.4	47.4	55.5	66.2	77.9	65.3	51.0	47.0
18	44.8	41.5	42.2	37.1	43.5	47.5	55.9	66.7	78.1	64.8	50.7	47.0
19	44.6	41.5	42.0	36.9	43.6	47.8	56.1	67.2	77.9	64.4	50.2	47.0
20	44.4	41.6	41.6	36.9	43.7	47.9	56.4	67.7	77.5	63.9	49.8	47.0
21	44.2	41.5	41.3	36.9	43.9	48.1	56.9	68.2	77.1	63.5	49.4	47.0
22	44.0	41.3	40.9	36.9	44.0	48.4	57.2	68.7	76.7	63.1	49.0	47.0
23	43.8	41.3	40.9	36.9	44.2	48.7	57.5	69.1	76.2	62.6	48.8	47.0
24	43.6	41.3	41.0	36.8	44.3	49.3	57.7	69.6	75.8	62.1	48.6	47.0
25	43.3	41.6	41.0	36.7	44.4	49.3	58.0	70.1	75.4	61.6	48.3	47.0
26	43.2	41.8	41.1	36.7	44.5	49.6	58.2	70.5	74.9	61.1	48.1	47.0
27	43.0	41.8	40.9	36.6	44.6	49.8	58.5	70.9	74.4	60.7	47.8	47.1
28	42.8	41.9	40.5	36.7	44.7	49.9	58.7	71.3	74.0	60.2	47.6	47.1
29	42.6	42.0	40.1	36.9	---	50.0	59.1	71.6	73.6	59.7	47.4	47.1
30	42.4	42.1	40.0	37.2	-----	50.1	59.4	72.2	73.2	59.2	47.2	47.1
31	42.3	-----	40.0	38.4	-----	50.2	-----	72.8	-----	58.8	47.0	-----
(†)	5,117.67	5,117.50	5,115.91	5,114.70	5,119.43	5,123.36	5,129.60	5,138.08	5,138.34	5,129.18	5,121.11	5,121.15
(*)	-6,300	-200	-2,100	-1,600	+6,300	+5,500	+9,200	+13,400	+400	-14,400	-11,800	+100

Calendar year 1960..... * +4,500

Water year 1960-61..... * -1,500

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11-4045. North Fork Feather River at Big Bar, Calif.

Location.--Lat 39°47'40", long 121°27'00", in NE 1/4 sec. 6, T.22 N., R.5 E., on left bank between railroad and highway bridges, 0.5 mile downstream from Flea Valley Creek and Pulga, 1 mile downstream from Big Bar, and 1.5 miles downstream from Poe Dam.

Drainage area.--1,953 sq mi (revised).

Records available.--October 1910 to September 1961. Monthly discharge only for some periods and yearly estimates for water years 1911 and 1938, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 1,320 ft (from topographic map). Prior to Oct. 1, 1937, at site 1.5 miles upstream at different datum. Oct. 1, 1937, to Sept. 30, 1958, at present site at datum 5.00 ft higher.

Average discharge.--51 years, 2,885 cfs (2,089,000 acre-ft per year), including diversion through Poe powerplant.

Extremes.--Maximum discharge during year, 4,550 cfs Jan. 31 (gage height, 11.50 ft); minimum daily, 33 cfs June 25.
1910-58 (prior to diversion to Poe powerhouse): Maximum discharge, 72,400 cfs Dec. 23, 1955 (gage height, 35.60 ft, present datum), from rating curve extended above 34,000 cfs; minimum daily, 235 cfs Oct. 31, 1932.
1958-61: Maximum discharge, 34,300 cfs Feb. 8, 1960 (gage height, 25.10 ft); minimum daily, that of June 25, 1961.

Remarks.--Records good. Flow regulated by Lake Almanor (see p. 769), Bucks Lake (see p. 779), Butt Valley Reservoir, and Cresta, Rock Creek, and Poe powerplants. Diversion through Poe powerplant began on May 29, 1958.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.3	33	6.0	520
3.6	60	7.0	870
4.0	104	8.0	1,400
4.5	174	9.0	2,000
5.0	265		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	60	1,050	55	768	52	88	60	60	48	52	55
2	58	60	*1,900	54	129	50	85	54	57	49	53	55
3	57	60	432	52	109	50	85	52	55	51	53	57
4	61	57	69	52	96	49	80	51	55	53	53	58
5	62	58	62	52	88	63	72	50	54	53	52	57
6	71	58	59	52	82	58	71	56	52	55	52	55
7	*62	59	56	53	77	53	67	52	53	55	51	57
8	59	58	56	53	76	58	63	51	53	55	52	56
9	59	58	56	55	241	66	63	52	52	55	52	56
10	59	58	56	*55	288	63	61	56	51	54	52	55
11	60	67	54	52	147	65	59	60	48	54	53	a55
12	60	74	54	51	133	63	61	59	50	54	53	a55
13	60	92	55	53	113	61	57	57	50	54	51	a55
14	60	68	54	51	104	70	55	52	46	54	51	a55
15	60	59	55	51	110	141	54	*49	38	54	53	a54
16	60	59	73	51	104	109	53	48	35	53	52	a54
17	61	58	96	51	93	130	51	47	35	53	52	a53
18	60	78	81	50	88	110	51	46	35	53	52	a53
19	61	62	72	53	84	102	50	45	35	51	53	a53
20	60	60	67	52	*79	109	50	45	34	50	53	a53
21	59	60	63	51	66	96	59	43	34	*52	53	a54
22	59	59	61	52	62	94	63	46	35	53	55	55
23	59	61	61	51	*60	129	65	55	35	52	56	57
24	58	62	60	50	58	138	58	54	34	51	57	55
25	59	113	58	53	57	136	57	54	33	51	57	*55
26	59	119	58	55	57	131	56	54	37	51	56	55
27	58	78	56	54	55	120	55	52	47	51	57	56
28	57	67	57	51	54	109	55	54	50	53	58	56
29	58	63	55	69	—	104	57	54	49	53	*57	56
30	61	64	54	104	-----	98	56	66	49	53	57	55
31	59	-----	55	1,570	-----	93	-----	61	-----	51	57	-----
Total	1,854	2,009	5,095	12,088	14,480	2,770	1,857	1,635	1,351	1,629	1,665	1,658
Mean	59.8	67.0	164	103	124	89.4	61.9	52.7	45.0	52.5	53.7	55.2
Max	71	119	1,900	1,570	768	141	88	66	60	55	58	58
Min	57	57	54	50	54	49	50	43	33	48	51	53
Ac-ft	3,680	3,980	10,110	6,360	6,900	5,490	3,680	3,240	2,680	3,230	3,300	3,280
(†)	67,150	106,700	141,300	77,710	125,500	112,800	123,800	117,000	95,120	136,000	143,600	59,800
Mean†	1,152	1,861	2,463	1,367	2,384	1,925	2,142	1,956	1,644	2,265	2,389	1,060
Ac-ft*	70,830	110,700	151,400	84,070	132,400	118,300	127,400	120,300	97,800	139,200	146,900	63,080

Calendar year 1960: Max 25,200 Min 47 Mean 253 Ac-ft 183,800 Mean† 2,365 Ac-ft* 1,717,000
Water year 1960-61: Max 1,900 Min 33 Mean 77.3 Ac-ft 55,930 Mean† 1,882 Ac-ft* 1,362,000

* Discharge measurement made on this day.

† Diversion, in acre-feet, through Poe powerplant, furnished by Pacific Gas & Electric Co.

* Adjusted for diversion.

a No gage-height record.

11-4053. West Branch Feather River near Paradise, Calif.

Location.--Lat 39°47'15", long 121°33'40", in SB4SB4 sec.6, T.22 N., R.4 E., on left bank 0.6 mile upstream from Griffin Gulch and 4.0 miles northeast of Paradise.

Drainage area.--113 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,370 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,580 cfs Jan. 31 (gage height, 10.48 ft), minimum, 0.4 cfs Oct. 14-19, Sept. 12-15.
1957-61: Maximum discharge, 14,000 cfs Feb. 8, 1960 (gage height, 18.55 ft), from rating curve extended above 6,800 cfs; minimum, 0.3 cfs Aug. 31, Sept. 1, 2, 1960.

Remarks.--Records good except those for period of no gage-height record, which are fair. Dewey, Miners, and Hendricks Canals divert from headwaters of West Branch Feather River into Butte Creek basin (see p. 751) for power development at DeSaba and Centerville plants of Pacific Gas & Electric Co. Upper Miocene Canal diverts about 50 cfs to Lime Saddle powerplant. Flow regulated by Round Valley Reservoir (capacity, 1,284 acre-ft) and Philbrook Reservoir (capacity, 5,010 acre-ft).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31

Jan. 31 to Sept. 30

1.8	0.2	3.0	36	1.8	0.3	3.0	37
1.9	.6	3.5	77	1.9	.7	3.5	78
2.0	1.5	4.0	135	2.0	1.6	4.0	137
2.2	5.2	4.5	208	2.1	3.1	5.0	323
2.4	9.7	5.0	305	2.2	5.0	6.0	630
2.6	16	6.0	595	2.4	9.5	7.0	1,070
				2.7	20	9.0	2,360

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.6	9.48	2.4	9.45	11.3	3.57	4.10	3.40	3.6	0.9	0.9
2	.6	.6	6.58	2.2	8.78	10.5	4.46	3.60	2.47	2.1	.9	.8
3	.6	*.6	2.68	1.9	6.90	10.7	5.50	3.50	2.23	1.6	*.9	.5
4	.6	.6	13.6	1.6	4.40	9.5	5.88	3.20	2.05	1.6	.8	.5
5	.6	.6	8.4	1.5	3.40	11.5	5.53	2.90	1.99	1.4	.8	.5
6	6.5	.6	5.7	1.8	3.21	12.1	4.74	3.30	2.08	1.4	.8	.5
7	6.8	1.0	4.4	1.5	2.90	9.2	4.37	3.10	2.12	1.4	.9	.6
8	1.4	1.4	*3.6	2.7	*2.47	10.7	3.50	2.90	1.94	1.3	.9	.6
9	.6	1.0	3.0	8.9	1.390	15.1	3.52	3.00	1.64	1.2	.9	.6
10	.6	.7	2.6	7.8	9.95	13.1	3.30	4.60	1.36	1.1	.8	.7
11	.6	1.0	2.3	4.4	1.150	14.3	3.16	4.00	1.48	1.0	.7	.5
12	.6	5.6	2.0	*3.4	7.38	12.9	3.76	3.50	1.04	.9	.7	.5
13	.6	1.49	2.0	2.9	5.50	11.1	2.99	3.30	1.05	.9	.7	.4
14	.5	6.4	1.8	2.5	3.10	14.7	2.67	3.30	.90	1.3	.7	.4
15	4	1.3	1.9	2.3	5.42	5.56	2.55	3.30	*6.6	1.2	.7	.4
16	4	2.1	1.69	2.0	4.36	3.37	3.01	3.20	.60	.9	.7	.5
17	4	1.4	5.39	1.8	3.57	3.90	3.40	3.30	.40	1.4	.7	4.5
18	4	1.39	3.97	1.7	2.99	2.86	3.60	*3.50	.30	*4.2	.7	1.6
19	4	5.2	2.55	1.5	2.61	2.81	2.90	4.16	2.6	3.8	.7	1.2
20	.5	1.4	1.63	1.5	2.45	4.10	*2.40	3.84	2.0	1.1	.8	.7
21	.5	7.5	1.20	1.4	2.33	3.23	2.60	3.47	1.6	.9	.9	.7
22	.5	3.3	1.09	1.3	2.17	3.30	3.20	3.50	1.4	.9	.9	.7
23	.5	1.6	.91	1.4	1.83	6.86	2.80	3.19	1.1	.9	.8	.7
24	.6	3.0	.73	2.3	1.65	6.20	2.40	2.99	9.5	.9	.8	.8
25	.6	5.17	.61	1.9	1.48	5.28	2.30	2.97	8.8	.9	.9	.7
26	.8	5.10	5.2	6.0	1.36	4.74	2.30	3.01	8.5	.8	.7	.6
27	.7	1.99	4.6	7.3	*1.23	4.37	2.40	2.53	6.6	.8	.7	.8
28	.6	1.05	3.0	4.3	1.15	3.73	2.60	2.33	5.6	.8	*.7	.9
29	.6	.37	3.4	7.3	-	3.40	3.20	2.21	4.2	.8	.7	.9
30	.6	4.4	3.0	3.34	-	3.40	3.80	2.75	4.2	.8	.8	.9
31	.6	-	2.8	2.350	-	3.50	-	2.59	-	.8	.9	-
Total	30.3	1.962.6	4.593	3.579	12.753	8.728	10.241	10.114	2.905.4	4.27	2.45	2.46
Mean	0.98	65.4	148	115	455	282	341	326	96.8	1.38	0.79	0.82
Max.	6.8	517	948	2,350	1,390	686	588	460	340	4.2	0.9	4.5
Min.	0.4	0.6	18	13	115	92	230	221	4.2	0.8	0.7	0.4
Ac-ft	60	3,890	9,110	7,100	25,300	17,310	20,310	20,060	5,760	85	49	49

Calendar year 1960:

Water year 1960-61: Max 8,290 Min 0.3 Mean 208 Acre-feet 151,200

Max 2,350 Min 0.4 Mean 151 Acre-feet 109,100

Peak discharge (base, 2,000 cfs).--Dec. 1 (4 p.m.) 2,140 cfs (8.94 ft); Jan. 31 (11 a.m.) 3,580 cfs (10.48 ft); Feb. 9 (5 p.m.) 2,690 cfs (9.41 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Apr. 17 to May 18.

SACRAMENTO RIVER BASIN

11-4065. West Branch Feather River near Yankee Hill, Calif.

Location.--Lat 39°41'55", long 121°33'38", in SE¹/₄SE¹/₄ sec.6, T.21 N., R.4 E., on right bank 800 ft upstream from highway bridge, 1.7 miles downstream from Concow Creek, 2.1 miles west of Yankee Hill, and 4.9 miles southeast of Paradise.

Drainage area.--149 sq mi (revised).

Records available.--September 1930 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 650 ft (from topographic map).

Average discharge.--31 years, 343 cfs (248,300 acre-ft per year).

Extremes.--Maximum discharge during year, 4,570 cfs Jan. 31 (gage height, 13.16 ft); minimum, 2.6 cfs Aug. 6.

1930-61: Maximum discharge, 21,400 cfs Dec. 11, 1937 (gage height, 30.3 ft), from rating curve extended above 15,000 cfs; minimum, 0.3 cfs Jan. 8, 1937 (gage height, 1.69 ft).

Remarks.--Records good. Dewey, Miners, and Hendricks Canals divert from headwaters of West Branch Feather River into Butte Creek basin (see p.751) for power development at DeSaba and Centerville plants of Pacific Gas and Electric Co. Upper Miocene Canal diverts from West Branch Feather River, and Spring Valley ditch diverts from Concow Creek above station for power development at Lime Saddle and Coal Canyon plants of Pacific Gas and Electric Co. and for irrigation below powerplants. Flow regulated by Round Valley Reservoir (capacity, 1,285 acre-ft), Philbrook Reservoir (capacity, 5,010 acre-ft), and Lake Wilemor (capacity, 8,210 acre-ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 24 to Nov. 11)

1.98	2.7	3.0	52
2.0	2.9	3.5	102
2.1	4.3	4.0	170
2.2	6.5	5.0	355
2.3	10	7.0	920
2.5	20	9.0	1,780
2.7	31	11.0	2,960

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	4.1	9.98	32	1.050	1.24	3.82	4.15	3.36	4.9	7.4	5.3
2	4.5	3.8	7.66	29	9.56	1.15	4.48	3.65	2.42	12	5.3	6.0
3	4.5	*6.5	3.11	26	7.57	1.16	5.48	3.56	2.20	8.6	*3.2	1.1
4	4.5	5.1	1.51	23	5.10	1.09	5.75	3.29	2.05	4.3	3.0	4.7
5	4.7	3.5	9.6	20	3.55	1.27	5.55	2.91	1.94	4.9	2.8	4.3
6	6.8	3.4	7.1	22	3.31	1.46	4.70	3.29	2.00	4.9	2.7	4.5
7	17	3.8	5.6	22	3.01	1.09	4.42	3.15	2.05	4.7	3.0	4.7
8	9.9	4.3	*4.7	29	*2.47	1.21	3.49	2.87	1.94	4.7	3.0	4.7
9	6.2	4.5	4.0	7.5	1.650	1.86	3.49	2.91	1.65	4.7	3.1	4.7
10	5.3	4.1	3.5	9.4	1.150	1.50	3.31	4.55	1.37	4.5	3.1	4.9
11	4.9	9.5	3.3	5.3	1.230	1.57	3.11	3.92	1.48	4.5	3.1	5.3
12	4.3	5.7	2.7	*4.9	8.17	1.48	3.70	3.51	1.14	4.5	3.2	5.1
13	4.0	1.57	2.6	4.3	5.95	1.29	3.01	3.29	1.12	4.3	3.4	5.1
14	3.8	9.0	2.6	3.8	4.95	1.54	2.63	3.25	1.01	4.1	3.1	5.1
15	3.5	2.9	2.4	3.5	5.70	6.70	2.47	3.33	*7.8	4.0	2.9	5.1
16	3.5	8.8	1.34	3.3	4.90	4.02	2.89	3.13	7.1	4.3	2.9	5.5
17	3.5	3.8	5.52	3.1	3.92	4.92	3.37	3.27	5.4	4.0	2.8	6.8
18	3.8	11.8	4.50	3.3	3.21	3.37	3.62	*3.49	3.9	*4.5	2.8	1.2
19	3.8	7.8	2.77	3.2	2.75	3.21	2.85	4.12	3.3	7.1	3.0	8.2
20	3.8	2.7	1.70	2.6	2.67	4.70	*2.40	3.80	2.9	5.7	3.4	7.4
21	3.6	1.4	1.25	2.2	2.57	3.43	2.53	3.29	2.2	5.3	3.5	6.8
22	3.5	1.0	1.12	2.0	2.23	3.47	3.19	3.47	2.0	5.1	3.5	6.5
23	3.8	5.5	9.8	2.0	2.12	7.48	2.85	3.09	1.5	3.0	3.4	6.8
24	4.2	1.3	8.1	2.9	1.91	7.63	2.34	2.95	1.4	2.8	3.4	6.5
25	4.0	5.10	7.0	2.8	1.64	7.33	2.29	*2.87	1.2	2.8	3.2	9.7
26	4.5	6.90	6.2	5.1	1.50	6.49	2.29	2.95	1.2	2.9	3.5	4.3
27	4.7	2.31	5.6	8.4	*1.37	5.95	2.31	2.46	1.1	3.2	3.8	7.9
28	4.5	1.26	4.7	5.8	1.27	4.92	2.59	2.22	7.8	4.0	*3.8	6.0
29	4.3	5.5	4.2	7.5	-----	4.22	3.17	2.13	6.0	4.7	3.8	6.0
30	4.1	5.0	3.8	3.78	-----	3.95	3.78	2.58	4.9	6.8	3.8	6.0
31	4.3	-----	3.5	2.750	-----	3.88	-----	2.63	-----	7.1	4.3	-----
Total	151.8	2325.7	5.056	4.260	14.220	10.458	10.188	10.008	3.001.7	152.9	107.2	186.9
Mean	4.90	77.5	163	137	508	337	340	323	100	4.93	3.46	6.23
Max.	17	690	998	2,750	1,650	763	575	455	336	12	7.4	12
Min.	3.5	3.4	2.4	2.0	1.27	1.09	2.29	2.13	4.9	2.8	2.7	4.3
Ac-ft	301	4,610	10,030	8,450	28,200	20,740	20,210	19,850	5,450	303	213	371

Calendar year 1960: Max 8,830 Min 1.4 Mean 235 Acra-feet 170,600

Water year 1960-61: Max 2,750 Min 2.7 Mean 165 Acra-feet 119,200

Peak discharge (base, 3,000 cfs).--Jan. 31 (12 m) 4,570 cfs (13.16 ft); Feb. 9 (6 p.m.) 3,200 cfs (11.35 ft).

* Discharge measurement made on this day.

11-4070. Feather River near Oroville, Calif.

Location.--Lat 39°32'00", long 121°28'35", in NE¼ sec.2, T.19 N., R.4 E., on left bank 75 ft upstream from bridge on Feather River Highway, 1.9 miles downstream from North Fork, and 4 miles northeast of Oroville business district.

Drainage area.--3,615 sq mi (revised).

Records available.--October 1901 to September 1961. Prior to October 1934, published as "at Oroville." Monthly discharge only for some periods published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 182.02 ft above mean sea level, datum of 1929. Jan. 1, 1902, to Dec. 15, 1912, staff gages at several sites about 5.2 miles downstream at various datums. Dec. 16, 1912, to Sept. 30, 1934, water-stage recorder at site 5.2 miles downstream at datum 139.53 ft above mean sea level, datum of 1929.

Average discharge.--60 years, 5,814 cfs (4,209,000 acre-ft per year).

Extremes.--Maximum discharge during year, 22,300 cfs Jan. 31 (gage height, 29.28 ft); minimum, 960 cfs Sept. 30 (gage height, 5.40 ft). 1901-61: Maximum discharge observed, 230,000 cfs Mar. 19, 1907 (gage height, 28.2 ft, reading on U. S. Weather Bureau staff gage at bridge, equivalent to 39.3 ft at staff gage at cable 1,000 ft upstream; probably had been higher during night); minimum, 300 cfs (estimated), Nov. 9, 1931 (gage height, -1.7 ft, site and datum then in use).

Remarks.--Records excellent. Flow partly regulated by power plants and Lake Almanor (see p.769), Bucks Lake (see p.779), Butt Valley Reservoir, and smaller reservoirs.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 31 to Mar. 21, July 21 to Aug. 23)

5.4	960
6.0	1,190
8.0	2,040
12.0	4,310
16.0	7,400
20.0	11,000
24.0	15,100

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.680	1.630	4.510	1.700	1.1300	2.600	5.270	*5.060	4.530	2.680	2.640	1.920
2	1.670	1.630	8.560	1.680	8.490	2.400	5.550	5.310	4.530	2.660	2.640	1.680
3	1.590	1.630	4.950	1.780	7.800	2.420	*6.740	4.740	4.330	2.660	2.610	1.680
4	1.370	*1.530	3.580	1.720	5.860	2.520	8.010	4.790	3.880	2.660	*2.590	1.680
5	1.390	1.410	3.180	1.720	4.390	2.460	7.610	4.330	3.580	2.660	2.580	*1.670
6	1.430	1.410	2.960	1.680	4.170	2.900	6.830	4.680	3.340	2.650	2.580	1.650
7	1.480	1.430	2.880	1.630	3.790	2.700	6.440	4.620	2.890	2.660	2.580	1.650
8	1.430	1.470	2.810	1.640	3.540	2.540	5.580	4.300	3.020	2.640	2.580	1.560
9	1.440	1.440	2.760	1.740	*1.0000	3.180	5.260	4.170	2.930	2.600	2.560	1.400
10	1.390	1.430	2.880	1.910	1.1500	3.090	5.100	5.780	2.520	2.560	2.560	1.390
11	1.360	1.480	2.890	1.810	1.1000	2.940	4.580	5.780	2.320	2.560	2.560	1.340
12	1.380	1.990	2.840	1.770	9.470	2.720	4.870	5.490	2.660	*2.560	2.540	1.260
13	1.380	2.600	2.830	*1.740	6.870	2.740	5.020	5.350	2.970	2.560	2.540	1.170
14	1.370	3.000	2.820	1.660	5.960	2.980	4.350	5.090	2.840	2.550	2.560	1.170
15	1.360	2.950	2.830	1.670	6.040	6.560	4.260	4.790	2.720	2.540	*2.550	1.160
16	1.350	2.770	3.110	1.690	6.120	6.020	4.250	*5.160	2.720	2.560	2.520	1.180
17	1.350	2.740	4.820	1.690	5.290	6.130	4.850	5.140	2.450	2.530	2.530	1.200
18	1.350	3.590	4.860	1.820	4.450	5.110	5.120	5.170	2.230	2.540	2.500	*1.220
19	1.350	3.510	4.020	1.770	3.970	4.480	4.500	5.460	2.490	2.520	2.520	1.220
20	1.350	3.000	3.660	1.640	3.920	5.580	4.030	5.340	*2.420	2.540	2.500	1.210
21	1.350	2.790	3.450	1.500	3.840	5.270	3.850	5.020	2.360	2.530	2.450	1.200
22	1.340	2.300	3.350	1.350	3.190	5.190	4.890	4.850	2.420	2.540	2.460	1.190
23	1.350	2.250	3.280	1.610	3.330	7.900	4.390	4.510	2.420	2.560	2.500	1.150
24	1.430	2.360	3.190	1.320	3.110	8.850	3.850	4.260	2.400	2.560	2.490	1.140
25	1.650	3.310	3.150	1.820	2.870	8.120	3.780	4.300	2.380	2.570	2.480	1.070
26	1.670	5.710	3.090	1.540	2.690	7.080	3.850	4.180	2.560	2.580	2.500	978
27	1.690	3.740	2.810	1.930	2.870	7.060	3.950	3.560	2.720	2.580	2.500	970
28	1.640	3.250	2.300	1.530	*2.560	6.300	4.150	3.450	2.740	2.560	2.240	984
29	1.630	2.900	2.150	1.720	---	5.620	4.460	3.420	2.720	2.600	2.120	1.010
30	1.630	2.820	1.990	3.000	---	5.430	4.860	3.690	2.680	2.600	2.180	967
31	1.630	---	1.730	*1.4000	---	5.260	---	*3.960	---	2.620	2.080	---
Total	45,480	74,070	104,240	65,780	158,390	144,150	150,250	145,750	86,770	80,190	77,240	39,069
Mean	1,467	2,469	3,363	2,122	5,657	4,650	5,009	4,702	2,892	2,587	2,492	1,302
Max.	1,690	5,710	8,560	14,000	11,500	8,850	8,010	5,780	4,530	2,680	2,640	1,920
Min.	1,340	1,410	1,730	1,320	2,560	2,400	3,780	3,420	2,230	2,520	2,080	967
Ac-ft	90,210	146,900	206,800	130,500	314,200	285,900	298,000	289,100	172,100	159,100	153,200	77,490
Calendar year 1960 :			Max 95,800	Min 972			Mean 4,277			Acra-feet 3,105,000		
Water year 1960-61 :			Max 14,000	Min 967			Mean 3,209			Acra-feet 2,324,000		

Peak discharge (base, 30,000 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4070. Feather River near Oroville, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	-	-	53	52	44	41	38	38	46	46	44	44	40	48	53	52	56	55	70	68	73	71	72	70
2	-	-	53	52	44	43	38	37	46	46	45	44	51	40	52	51	56	55	71	60	73	71	71	69
3	-	-	52	52	43	41	37	37	46	46	45	44	52	51	54	52	58	55	71	70	73	72	71	69
4	-	-	52	52	41	41	37	37	46	46	44	44	52	51	54	52	62	58	70	60	73	72	70	68
5	-	-	52	51	41	40	37	37	46	46	44	44	51	50	53	52	62	60	70	68	74	73	70	68
6	-	-	52	51	40	39	37	37	46	46	44	43	50	40	53	52	62	61	70	68	74	74	60	67
7	-	-	52	51	39	38	37	37	46	46	43	42	49	49	52	50	64	62	69	67	75	74	68	67
8	-	-	51	50	38	38	38	37	46	46	43	42	40	48	54	52	64	62	70	68	75	73	68	67
9	-	-	51	50	38	38	39	39	47	45	44	43	40	48	54	53	64	62	70	68	76	74	60	66
10	-	-	50	50	38	38	40	39	47	47	44	44	50	48	54	53	65	63	71	69	75	74	-	-
11	-	-	50	50	38	38	40	40	47	47	44	44	50	40	53	52	65	64	72	70	74	74	-	-
12	-	-	50	50	38	38	40	40	47	45	44	44	50	40	52	50	66	64	73	71	75	73	-	-
13	-	-	50	49	30	38	40	40	45	44	45	44	50	40	52	51	67	64	73	71	74	72	-	-
14	-	-	40	47	39	39	40	40	44	44	45	45	50	40	54	52	68	66	74	71	74	72	-	-
15	-	-	47	46	39	30	40	40	45	44	45	45	51	50	56	54	70	67	74	72	73	71	-	-
16	-	-	46	46	40	30	40	40	45	45	45	44	53	51	57	56	71	68	73	71	72	71	-	-
17	-	-	47	46	42	40	40	40	45	44	45	44	54	52	58	56	72	69	73	71	72	70	-	-
18	-	-	47	47	42	42	40	40	44	43	45	44	53	52	50	57	72	69	74	71	72	70	-	-
19	-	-	47	46	42	42	41	40	44	43	44	44	52	50	59	59	71	60	74	72	72	70	-	-
20	-	-	46	45	42	42	41	38	43	42	45	44	51	48	59	57	72	69	74	72	72	70	-	-
21	-	-	45	45	42	42	40	37	44	43	46	44	49	48	58	56	72	70	74	72	72	71	-	-
22	-	-	45	44	42	41	40	39	44	43	46	46	49	47	59	57	72	70	74	72	73	72	-	-
23	-	-	44	44	41	40	41	40	44	43	46	46	47	45	58	56	72	70	75	73	73	72	-	-
24	-	-	44	44	40	40	42	41	44	44	46	46	46	44	58	56	72	70	75	73	73	72	-	-
25	-	-	44	44	40	40	42	42	44	43	46	44	48	46	58	56	72	70	74	73	72	71	-	-
26	54	54	44	43	40	40	44	42	44	44	44	44	50	48	58	57	72	70	74	73	72	70	-	-
27	54	53	43	41	40	40	44	43	44	43	44	44	51	49	58	56	72	70	74	73	72	70	-	-
28	54	53	41	40	40	39	44	44	44	43	44	43	51	50	57	56	71	70	74	72	70	70	-	-
29	53	52	40	40	39	39	44	44	-----	-----	46	44	51	51	57	56	70	69	74	72	71	69	-	-
30	53	52	41	40	39	38	45	44	-----	-----	47	45	53	50	57	57	70	68	74	72	71	70	-	-
31	53	52	-----	-----	39	38	47	45	-----	-----	48	47	-----	-----	57	55	-----	-----	73	71	72	70	-	-
Avg	-	-	48	47	40	40	40	40	45	45	45	44	50	49	56	54	67	65	73	71	73	72	-	-

SACRAMENTO RIVER BASIN

785

11-4073. North Honcut Creek near Bangor, Calif.

Location.--Lat 39°20'32", long 121°29'25", in SW $\frac{1}{4}$ sec. 11, T.17 N., R.4 E., on left bank 0.25 mile upstream from unnamed tributary and 5.7 miles southwest of Bangor.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 125 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,780 cfs Jan. 31 (gage height, 7.69 ft); no flow for several months.

Remarks.--Small diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	15	7.5	196	10	4.2	4.8	5.5			
2		0	60	6.9	322	11	38	6.8	7.6			
3		0	40	6.9	173	9.8	34	7.6	6.5			
4		0	25	6.5	82	8.2	29	6.3	6.4			
5		0	18	6.9	56	8.2	22	5.6	5.7			
6		0	13	6.5	46	9.5	19	5.7	4.9			
7		0	10	6.3	38	7.9	17	8.4	* 5.0			
8		0	7.6	6.3	33	7.9	14	7.9	5.2			
9		0	* 6.8	6.3	532	31	12	5.8	5.0			
10		0	6.7	6.5	237	* 21	10	6.2	4.9			
11		0	6.3	6.5	311	15	10	7.4	4.2			
12		0	6.0	6.0	153	9.8	9.5	7.0	3.9			
13		0	6.7	5.7	95	8.6	15	6.1	4.1			
14		8.0	6.0	4.7	77	9.4	10	6.2	3.9			
15		5.0	5.2	4.9	155	33.4	9.0	5.6	3.3			
16		3.5	8.4	4.9	125	117	8.6	4.5	2.8			
17		3.5	89	4.5	83	443	* 7.5	3.5	2.6			
18		22	54	4.3	68	109	6.5	3.0	2.1			
19		11	38	4.3	58	72	5.7	3.0	1.5			
20		7.0	30	4.1	45	162	5.2	3.6	.9			
21		5.0	23	3.9	36	86	6.5	4.1	.5			
22		4.5	19	3.9	30	73	12	3.7	.2			
23		4.5	17	3.7	23	284	13	3.1	0			
24		7.0	15	3.7	20	151	10	3.0	0			
25		50	14	3.5	18	161	7.6	3.0	0			
26		350	12	4.9	16	141	5.2	3.0	0			
27		130	11	8.0	14	129	3.9	3.0	0			
28		40	99	5.5	12	108	3.2	2.8	0			
29		23	*8.7	7.0	-	70	4.0	3.0	0			
30		17	8.6	* 80	-	57	4.1	3.6	0			
31		-	8.2	* 809	-	48	-	4.4	-			
Total	0	691.0	598.1	1049.6	3054	2712.3	393.5	151.7	86.7	0	0	0
Mean	0	23.0	19.3	33.9	109	87.5	13.1	4.89	2.89	0	0	0
Max.	0	350	89	809	532	443	42	8.4	7.6	0	0	0
Min.	0	0	5.2	3.5	12	7.9	3.2	2.8	0	0	0	0
Ac-ft	0	1,370	1,190	2,080	6,060	5,380	780	301	172	0	0	0
Calendar year 1960:			Max	-	Min	-	Mean	-	Acre-feet	-		
Water year 1960-61:			Max	809	Min	0	Mean	23.9	Acre-feet	17,330		

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 26 to Dec. 1, Jan. 27-30.

SACRAMENTO RIVER BASIN

11-4075. South Honcut Creek near Bangor, Calif.

Location.--Lat 39°22'05", long 121°22'15", in SE $\frac{1}{4}$ sec.35, T.18 N., R.5 E., on right bank 2.3 miles southeast of Bangor and 3.3 miles upstream from Tennessee Creek.

Drainage area.--30.5 sq mi.

Records available.--October 1950 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 620 ft (from topographic map).

Average discharge.--11 years, 34.7 cfs (25,120 acre-ft per year); median of yearly mean discharges, 28.5 cfs (20,600 acre-ft per year).

Extremes.--Maximum discharge during year, 915 cfs Mar. 17 (gage height, 6.39 ft); no flow many days.

1950-61: Maximum discharge, 6,340 cfs Dec. 23, 1955 (gage height, 11.15 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurement of peak flow; no flow for several months each year.

Remarks.--Records good. Some small diversions upstream for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 17-28, Sept. 26-30)

1.55	0	2.2	3.0	3.5	84
1.7	.2	2.3	4.7	4.0	144
1.8	.4	2.4	7.1	4.5	226
1.9	.7	2.6	14	5.0	360
2.0	1.2	2.8	24		
2.1	1.9	3.0	38		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	6.6	2.5	8.0	6.9	2.6	4.4	2.6	0.1		0
2		0	4.2	2.6	12.8	9.3	2.3	4.5	2.5	.1		0
3		0	1.4	3.0	7.6	8.3	*1.9	4.0	2.3	.1		0
4		0	6.9	2.9	4.0	8.0	1.9	3.5	2.1	.1		0
5		0	4.7	2.9	2.6	8.6	1.4	3.3	1.8	.1		1.5
6		0	3.8	3.0	2.0	1.3	1.2	3.5	1.6	.1		5.7
7		0	3.3	3.0	1.7	1.2	1.1	6.4	1.5	0		.7
8		0	2.6	3.0	1.4	1.1	9.3	5.2	1.4	0		.4
9		*0	2.3	3.0	2.50	3.9	9.9	4.2	1.3	.1		.3
10		0	2.5	3.0	1.08	2.0	9.9	4.4	1.2	.1		.2
11		0	2.5	3.0	2.10	1.2	9.3	4.4	1.0	.1		.2
12		0	2.4	2.6	7.9	1.1	1.1	4.0	1.0	.1		.1
13		.1	2.3	2.2	4.4	9.3	1.3	3.5	.9	0		.3
14		5.6	2.2	2.5	3.0	9.8	9.3	3.2	.7	0		.6
15		3.9	2.2	2.6	7.9	2.42	6.6	2.9	.6	0		*.4
16		2.0	3.4	2.4	5.6	9.0	6.4	2.8	.5	0		.3
17		1.2	7.0	2.4	*3.7	2.54	5.4	2.6	.4	0		.3
18		1.6	2.0	2.3	3.0	8.5	5.4	2.5	.3	0		.2
19		4.5	1.1	2.3	2.4	6.5	5.4	2.4	.3	0		.2
20		2.2	7.4	2.3	2.1	9.2	4.7	2.3	.3	0		.1
21		1.6	5.9	2.3	1.7	6.4	5.7	2.4	.3	0		.1
22		1.2	6.1	3.0	1.6	5.3	1.1	2.4	.3	0		.1
23		1.3	4.2	3.3	1.1	1.34	1.0	2.2	.2	0		.1
24		1.6	3.7	3.3	9.6	8.8	6.9	2.0	.2	0		.1
25		3.7	3.5	3.5	8.6	8.2	5.7	1.8	.1	0	(*)	.1
26		1.63	3.3	5.4	8.0	8.0	4.9	1.6	.1	0		.1
27		1.7	3.2	6.1	7.1	7.8	*4.5	1.6	.1	*0		.1
28		6.6	2.9	4.7	6.9	6.4	4.2	1.5	*.1	0		.1
29		4.5	2.5	9.2	-	4.8	4.0	1.6	.1	0		.1
30		3.8	2.5	2.9	-	3.9	4.0	2.0	.1	0		.1
31		-	2.5	3.14	-	3.0	-	2.4	-	0		-
Total	0	273.1	252.4	437.3	1453.2	1766.2	290.5	95.5	25.9	1.0	0	26.0
Mean	0	9.10	8.14	14.1	51.9	57.0	9.74	3.08	0.86	0.03	0	0.87
Max.	0	163	70	314	250	254	26	6.4	2.6	0.1	0	15
Min.	0	0	2.2	2.2	6.9	6.9	4.0	1.5	0.1	0	0	0
Ac-ft	0	542	501	867	2,880	3,500	576	189	51	2.0	0	52

Calendar year 1960: Max 1,170 Min 0 Mean 22.6 Acre-feet 16,390

Water year 1960-61: Max 314 Min 0 Mean 12.7 Acre-feet 9,160

Peak discharge (base, 1,400 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SACRAMENTO RIVER BASIN

787

11-4080. Milton-Bowman tunnel at outlet, Calif.

Location--39°27'35", long 120°36'40", in sec.3, T.18 N., R.12 E., on right bank 100 ft downstream from tunnel outlet and near upper end of Bowman Lake.

Records available--May 1928 to September 1930, February 1931 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage--Water-stage recorder and concrete control. Altitude of gage is 5,600 ft (from topographic map).

Average discharge--33 years (1928-61), 66.8 cfs (48,360 acre-ft per year).

Extremes--1928-30; 1931-61: Maximum daily discharge, 492 cfs Feb. 11, 1941; minimum daily, 0.4 cfs Oct. 7, 1944.

Remarks--Records good. Tunnel diverts from Middle Yuba River at Milton, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake. Practically the entire flow of Middle Yuba River is diverted during low and medium flows.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.8	8.5	5.9	2.4	2.1	6.4	188	255	8.4	3.9	2.9
2	2.0	2.9	18	5.6	2.4	2.4	9.9	167	30.4	1.4	3.5	3.1
3	2.0	3.1	1.4	5.6	2.7	2.7	16.2	19.4	27.2	1.5	2.9	2.9
4	2.0	3.3	1.1	5.4	2.6	8.1	20.0	20.2	25.2	1.5	2.9	2.9
5	2.0	3.3	8.8	5.2	2.3	3.6	18.3	17.9	23.6	1.4	2.9	2.8
6	2.1	3.5	7.4	5.4	2.0	2.5	16.5	16.3	21.8	1.3	2.9	2.8
7	2.1	4.4	7.0	5.4	1.9	2.4	16.1	1.48	28.3	1.2	2.9	2.8
8	2.0	4.6	6.8	5.6	1.7	2.3	1.39	1.67	26.3	1.1	2.9	2.8
9	2.0	4.4	6.4	5.9	2.6	2.3	1.53	2.16	2.4.4	1.0	3.1	2.8
10	2.0	4.2	6.2	5.9	6.1	2.2	1.49	*3.43	2.23	9.6	3.1	2.8
11	2.0	4.6	6.2	5.9	6.5	2.2	1.49	2.89	1.4.4	9.2	3.1	2.8
12	2.0	7.4	5.9	5.9	6.0	2.1	1.76	2.10	1.29	8.8	3.3	2.8
13	2.0	8.8	5.9	5.9	5.1	2.1	1.33	1.96	1.17	8.4	3.5	2.8
14	2.0	8.1	5.9	5.9	4.1	2.5	1.35	2.29	1.12	8.1	3.3	2.6
15	2.0	6.4	5.6	5.9	3.7	3.2	1.4.4	2.60	1.03	7.4	3.3	2.6
16	2.0	5.6	5.9	5.9	3.3	*2.7	1.97	2.76	9.3	7.0	3.1	2.6
17	2.0	5.4	9.2	5.9	3.0	2.1	2.48	3.02	8.3	6.8	3.1	2.8
18	2.0	8.1	1.1	5.6	2.7	2.6	2.3.4	3.38	4.2	6.4	2.9	2.9
19	2.0	9.6	1.0	5.6	2.5	2.7	1.72	3.85	4.9	6.2	2.9	2.9
20	2.0	8.4	8.4	5.9	2.4	3.5	1.4.1	3.90	5.3	6.2	3.1	2.9
21	2.0	7.0	8.1	5.9	2.4	3.8	1.2.4	3.69	4.8	5.9	*3.1	2.9
22	2.0	6.4	7.8	5.9	2.5	4.1	1.08	3.49	4.3	5.6	3.1	2.9
23	2.0	5.9	7.4	5.9	2.5	6.1	9.8	3.36	3.9	5.4	2.9	2.9
24	2.1	5.6	7.1	5.9	2.4	5.4	8.9	2.98	3.5	5.2	2.9	2.8
25	2.1	5.4	7.1	5.9	2.5	4.6	8.5	2.98	3.2	4.9	2.9	2.8
26	2.2	6.2	7.1	6.2	2.4	4.1	9.2	2.92	2.9	4.9	2.9	2.9
27	*2.4	5.9	6.8	6.8	2.2	3.8	1.01	2.37	2.6	4.6	2.8	2.9
28	2.2	5.4	6.2	6.8	2.1	3.6	1.20	2.20	2.4	4.4	2.9	2.9
29	2.2	5.4	6.2	6.8	-	3.6	1.53	1.97	1.3	4.2	3.3	2.8
30	2.4	5.2	5.9	7.8	-	4.1	1.73	1.83	4.6	4.2	3.1	2.8
31	2.6	-	5.9	1.5	-	5.1	-	1.91	-	4.2	3.1	-
Total	6.4.4	167.3	2.43.7	193.2	85.0	104.6	4.3.47	7.81.2	3.768.6	250.0	95.6	84.9
Mean	2.08	5.58	7.86	6.23	30.4	33.7	1.45	252	126	8.06	3.08	2.83
Max.	2.6	9.6	18	15	65	81	2.48	390	30.4	15	3.9	3.1
Min.	2.0	2.8	5.6	5.2	1.7	2.1	6.4	1.48	4.6	4.2	2.8	2.6
Ac-ft	128	332	483	383	1,690	2,070	8,620	15,490	7,470	496	190	168
Calendar year 1960 :			Max	4.12	Min	1.7	Mean	76.1	Acra-feet	55,250		
Water year 1960-61 :			Max	390	Min	2.0	Mean	51.8	Acra-feet	37,520		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4085. Middle Yuba River at Milton, Calif.

Location.--Lat 39°31'22", long 120°35'01", in SW $\frac{1}{4}$ sec. 12, T.19 N., R.12 E., on right bank at diversion dam of Nevada Irrigation District, at old townsite of Milton, 4 miles southeast of Sierra City, and 8 miles upstream from South Fork of Middle Yuba River.

Drainage area.--39.5 sq mi.

Records available.--December 1925 to September 1961. Prior to October 1949, published as Middle Fork Yuba River at Milton. Yearly and monthly discharges only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder and concrete spillway control. Altitude of gage is 5,700 ft (from topographic map). Prior to June 8, 1928, at site 0.2 mile downstream at different datum.

Average discharge.--35 years (1926-61), 107 cfs (77,460 acre-ft per year), based on combined flow of Middle Yuba River at this station and Milton-Bowman tunnel at outlet.

Extremes.--Maximum discharge during year, 16 cfs Feb. 11 (gage height, 0.13 ft); no flow over dam for long periods.

1925-34, 1935-61: Maximum discharge, 6,800 cfs Dec. 11, 1937 (gage height, 4.18 ft), from rating curve extended above 1,500 cfs on basis of computation of peak flow over dam; practically all low flow diverted after May 23, 1928.

Remarks.--Records excellent. Milton-Bowman tunnel (see preceding page) diverts above station to Bowman Lake (see p. 797). Flow regulated by Milton Reservoir, capacity, 900 acre-ft.

Cooperation.--Water-stage recorder inspected by employees of Nevada Irrigation District.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

0.0 0
.1 9

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0							
2					0							
3					0							
4					0							
5					0							
6				(*)	0							
7					0							
8					0							
9					0							
10					3.2							
11					7.0							
12					0							
13					0							
14					0							
15					0							
16					0	(*)						
17					0							
18					0							
19					0							
20					0							
21					0				(*)			
22					0						(*)	
23					0							
24					0							
25					0							
26					0							
27					0							
28	(*)				0							
29					0							
30					0							
31					0							
Total	0	0	0	0	10.2	0	0	0	0	0	0	0
Mean	0	0	0	0	0.36	0	0	0	0	0	0	0
Max.	0	0	0	0	7.0	0	0	0	0	0	0	0
Min.	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	20.2	0	0	0	0	0	0	0
Calendar year 1960:			Max	650	Min	0	Mean	2.68	Acre-feet	1,940		
Water year 1960-61:			Max	7.0	Min	0	Mean	0.03	Acre-feet	20.2		

* Observation of no flow made on this day.

SACRAMENTO RIVER BASIN

789

11-4087. Middle Yuba River near Alleghany, Calif.

Location.--Lat 39°26'19", long 120°48'40", in NW 1/4 sec. 12, T.18 N., R.10 E., 0.5 mile downstream from Wolf Creek and 2.8 miles southeast of Alleghany.

Drainage area.--95.8 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 2,960 ft (from topographic map).

Extremes.--Maximum discharge during year, 473 cfs Feb. 9 (gage height, 4.75 ft); minimum, 16 cfs Sept. 15, 24-30.
1957-61: Maximum discharge, 6,300 cfs Feb. 8, 1960 (gage height, 10.58 ft), from rating curve extended above 2,100 cfs on basis of slope-area measurement of peak flow; minimum, 12 cfs July 6, 1959.

Remarks.--Records good. Milton-Bowman tunnel (see p. 787) diverts above station to Bowman Lake (see p. 797).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.1	14	3.0	79
2.2	18	3.5	147
2.4	28	4.0	243
2.7	49	5.0	550

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	20	107	35	144	74	205	209	176	38	21	19
2	20	20	127	35	124	78	265	195	183	36	21	18
3	20	20	71	35	144	80	348	195	172	36	21	18
4	20	20	55	34	109	76	372	191	165	35	21	18
5	20	20	47	33	92	80	354	170	157	35	20	18
6	22	22	41	*33	85	80	293	190	140	34	21	18
7	22	28	39	32	79	75	265	185	130	33	22	18
8	21	25	38	32	74	77	228	170	131	32	21	18
9	20	22	36	32	218	91	219	180	123	31	21	18
10	21	*22	36	32	299	85	213	324	114	30	20	18
11	22	29	35	32	293	92	199	*315	110	29	20	18
12	21	55	34	31	209	89	221	280	102	29	25	18
13	21	63	34	31	161	87	193	270	95	29	30	18
14	20	51	33	30	139	99	185	270	90	29	21	18
15	20	37	35	30	150	170	176	265	85	28	21	*17
16	20	33	39	30	136	*144	191	255	70	27	20	18
17	20	35	105	29	127	144	211	257	75	26	20	20
18	20	92	87	29	114	131	213	265	60	26	20	19
19	20	50	68	28	103	134	185	280	65	26	20	18
20	20	41	59	28	99	187	*165	272	62	25	21	17
21	20	36	54	28	99	181	170	248	57	*25	20	17
22	20	33	53	28	99	181	163	243	54	24	20	17
23	20	31	52	28	95	219	152	234	51	24	19	17
24	20	30	49	28	90	221	139	221	48	24	19	17
25	20	31	47	29	89	205	141	219	47	24	19	16
26	22	60	45	34	84	195	147	213	43	23	18	16
27	21	43	43	36	79	195	157	193	43	22	19	16
28	20	37	41	34	76	172	170	179	40	22	19	16
29	20	34	40	38	-	163	193	168	40	22	20	16
30	20	33	39	52	-	168	201	163	39	22	20	16
31	20	-	38	158	-	183	-	165	-	22	19	-
Total	633	1073	1627	1124	3610	4156	6334	7020	2803	868	639	526
Mean	20.4	35.8	52.5	36.3	129	134	211	226	93.4	28.0	20.6	17.5
Max.	22	92	127	158	299	221	372	324	183	38	30	20
Min.	20	20	33	28	74	74	139	163	39	22	18	16
Ac-ft	1,260	2,130	3,230	2,230	7,160	8,240	12,560	13,920	5,560	1,720	1,270	1,040

Calendar year 1960: Max 4,160 Min 19 Mean 131 Ac-ft 94,780

Water year 1960-61: Max 372 Min 16 Mean 83.3 Ac-ft 60,320

Peak discharge (base, 1,500 cfs)--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4090. Middle Yuba River above Oregon Creek, Calif.

Location.--Lat 39°23'35", long 121°04'50", in SE $\frac{1}{4}$ sec.28, T.18 N., R.8 E., on left bank 1,000 ft upstream from Oregon Creek and 2 miles northeast of North San Juan.

Drainage area.--162 sq mi.

Records available.--October 1940 to September 1961. Monthly and yearly discharges for water year 1941 published in WSP 1315-A. Prior to October 1949, published as Middle Fork Yuba River above Oregon Creek. If record for Oregon Creek near North San Juan is subtracted from record published as Middle Fork Yuba River near North San Juan, a record equivalent to that at this site can be obtained for the period 1910-41.

Gage.--Water-stage recorder. Altitude of gage is 1,440 ft (from topographic map).

Average discharge.--21 years, 353 cfs (255,600 acre-ft per year).

Extremes.--Maximum discharge during year, 956 cfs Feb. 10 (gage height, 5.36 ft); minimum, 20 cfs Sept. 28.

1910-61: Maximum discharge, 26,400 cfs Dec. 22, 1955 (gage height, 17.25 ft), from rating curve extended above 8,200 cfs on basis of slope-area measurement at gage height 15.25 ft; minimum, 10 cfs Jan. 3, 1950.

Remarks.--Records good. Milton-Bowman tunnel (see p.787) diverts above station to Bowman Lake (see p.797); other small diversions above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.3	16	3.0	96
2.4	22	3.5	206
2.5	30	4.0	350
2.7	52	5.0	760

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	26	183	65	337	110	388	308	226	51	31	26
2	25	26	402	62	257	110	434	290	238	50	30	26
3	25	29	217	65	290	120	527	278	221	50	30	24
4	24	29	134	65	220	110	555	272	209	50	29	24
5	25	28	103	59	170	122	515	254	198	48	29	25
6	28	28	85	56	147	136	448	293	188	47	30	24
7	30	36	74	53	136	120	410	284	175	47	32	24
8	29	39	69	52	120	118	354	266	163	47	30	24
9	28	32	63	52	388	190	335	263	154	45	29	25
10	27	* 30	62	52	642	161	323	385	143	42	29	25
11	29	40	65	51	638	170	299	427	136	41	30	24
12	30	101	58	50	523	180	317	396	130	40	31	22
13	29	163	55	48	354	166	293	385	120	40	39	22
14	29	149	53	47	290	180	278	374	111	39	36	* 22
15	28	90	58	47	311	435	255	357	105	38	30	22
16	27	62	65	47	305	396	260	344	98	38	* 28	24
17	27	58	272	45	266	399	* 281	335	93	37	27	28
18	28	212	232	45	232	341	290	338	86	37	27	29
19	28	134	166	44	203	317	257	354	82	36	27	26
20	27	76	132	44	185	406	232	357	* 77	* 35	29	24
21	27	63	114	41	173	396	226	323	73	* 35	28	24
22	27	55	107	41	168	382	281	* 314	70	34	26	24
23	27	50	100	41	156	471	275	308	66	34	25	24
24	27	47	93	41	* 143	499	232	287	65	33	25	24
25	28	58	88	41	134	531	232	278	62	33	25	23
26	29	294	83	* 50	130	475	243	275	60	32	25	23
27	30	147	82	56	122	* 547	252	249	56	31	25	22
28	28	* 88	76	50	118	491	266	232	53	31	27	21
29	28	73	73	55	-	416	290	220	52	30	27	21
30	27	66	* 70	91	-	388	296	214	52	30	28	21
31	27	-	67	309	-	385	-	220	-	30	26	-
Total	853	2,329	3,501	1,865	7,158	9,268	9,644	9,480	3,562	1,211	890	717
Mean	27.5	77.6	113	60.2	256	299	321	306	119	39.1	28.7	23.9
Max.	30	294	402	309	642	547	555	427	238	51	39	29
Min.	24	26	53	41	118	110	226	214	52	30	25	21
Ac-ft	1,690	4,620	6,940	3,700	14,200	18,380	19,130	18,800	7,070	2,400	1,770	1,420
Calendar year 1960:			Max	9,280	Min	24	Mean	227	Acres-feet	165,000		
Water year 1960-61:			Max	642	Min	21	Mean	138	Acres-feet	100,100		

Peak discharge (base, 2,400 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

791

11-4095. Oregon Creek near North San Juan, Calif.

Location.--Lat 39°24'10", long 121°04'35", in NW 1/4 sec. 27, T.18 N., R.8 E., on right bank 0.7 mile upstream from mouth and 2.7 miles northeast of North San Juan.

Drainage area.--34.4 sq mi.

Records available.--September 1911 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from topographic map). Prior to October 1933, staff gages at site 0.6 mile downstream at different datums.

Average discharge.--50 years, 76.0 cfs (55,020 acre-ft per year).

Extremes.--Maximum discharge during year, 646 cfs Feb. 9 (gage height, 5.84 ft); minimum, 4.0 cfs Sept. 13.

1911-61: Maximum discharge recorded, 5,390 cfs Dec. 22, 1955 (gage height, 11.90 ft), from rating curve extended above 2,000 cfs; minimum, 0.7 cfs several days in July, August 1931, September 1934.

Remarks.--Records good. Small diversions above station for irrigation and mining.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.6	3.8	3.0	75
1.7	6.3	3.5	125
1.9	13	4.0	189
2.2	24	4.5	274
2.5	39	5.0	388

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	5.6	17.4	31	14.9	56	183	91	45	15	7.2	5.8
2	5.0	5.6	23.4	30	14.9	55	178	87	41	14	7.5	4.8
3	5.0	7.2	14.3	28	13.5	53	178	82	38	14	7.2	5.0
4	5.0	7.2	9.6	28	10.6	51	176	76	36	13	7.2	5.0
5	5.0	6.6	7.5	27	8.8	62	165	70	34	13	6.9	4.8
6	6.3	6.6	6.2	26	8.1	60	149	86	32	13	7.5	4.8
7	6.6	7.8	5.3	25	7.3	53	135	78	31	12	7.5	4.8
8	6.3	8.1	4.8	24	6.6	56	118	70	30	12	6.9	5.0
9	5.6	7.2	4.3	25	28.2	95	106	69	28	12	6.6	4.8
10	5.6	*6.9	4.1	24	30.4	73	98	92	27	11	6.3	5.0
11	5.8	1.6	4.0	23	32.8	87	89	88	26	11	6.6	4.8
12	5.8	4.8	3.6	22	26.3	90	94	97	25	11	6.6	4.8
13	5.6	7.1	3.4	22	19.4	81	87	89	24	11	6.3	4.6
14	5.8	6.8	3.2	22	16.1	82	79	84	22	11	5.6	*4.8
15	5.8	3.6	3.3	21	18.7	*20.0	72	79	22	10	5.3	4.8
16	5.6	2.4	4.2	20	17.4	168	69	73	20	9.6	5.3	5.0
17	5.0	2.4	17.7	20	15.0	189	*65	69	20	9.0	5.3	6.3
18	5.0	20.1	12.3	20	13.1	162	62	65	20	9.0	5.6	7.8
19	5.0	7.6	8.8	20	11.4	156	58	62	19	9.0	6.0	6.3
20	5.6	4.3	6.9	19	9.7	22.0	55	58	19	*8.4	6.9	5.8
21	5.8	3.6	6.4	19	9.3	193	60	54	18	9.0	6.3	5.6
22	5.6	3.2	5.8	19	8.7	183	80	48	18	9.0	6.0	5.8
23	5.6	2.8	5.3	18	8.0	23.7	75	*4.6	18	9.0	5.6	6.0
24	5.3	2.6	4.9	18	7.5	26.3	70	44	17	8.1	5.3	6.0
25	5.6	4.3	4.5	19	7.1	27.6	84	41	16	7.8	5.6	5.6
26	6.3	18.7	4.3	*2.5	6.7	25.5	97	39	16	7.8	5.6	5.3
27	6.6	8.9	4.0	2.6	6.3	31.6	91	38	15	7.8	6.0	5.0
28	6.3	6.0	3.8	2.2	5.8	27.0	88	36	15	7.5	6.0	5.0
29	5.8	4.8	3.6	2.9	5.8	23.0	89	35	15	7.8	6.0	5.0
30	5.8	4.7	3.4	5.8	5.8	20.7	88	36	15	7.8	5.8	5.0
31	5.6	---	3.2	21.5	19.6	---	4.6	---	---	7.5	5.6	---
Total	174.7	1271.8	2135	945	3826	4675	3038	2028	722	317.1	194.1	159.1
Mean	5.64	42.4	68.9	30.5	137	151	101	65.4	24.1	10.2	6.26	5.30
Max.	6.6	201	234	215	328	316	183	97	45	15	7.5	7.8
Min.	5.0	5.6	3.2	1.8	5.8	5.1	55	35	15	7.5	5.3	4.6
Ac-ft	347	2,520	4,230	1,870	7,590	9,270	6,030	4,020	1,430	629	385	316

Calendar year 1960: Max 2,750 Min 4.8 Mean 74.9 Acre-feet 54,400
 Water year 1960-61: Max 328 Min 4.6 Mean 53.4 Acre-feet 38,640

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4130. North Yuba River below Goodyears Bar, Calif.

Location.--Lat 39°31'30", long 120°56'13", in SW¹/₄ sec.11, T.19 N., R.9 E., on right bank 200 ft downstream from St. Catherine Creek, 3.1 miles southwest of Goodyears Bar, and 6.4 miles southwest of Downieville.

Drainage area.--245 sq mi.

Records available.--October 1930 to September 1961. Prior to October 1949, published as North Fork Yuba River below Goodyears Bar. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 2,453 ft above mean sea level (river-profile survey).

Average discharge.--31 years, 719 cfs (520,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,540 cfs May 18 (gage height, 5.88 ft); minimum, 96 cfs Sept. 28-30. 1930-61: Maximum discharge, 26,800 cfs Dec. 23, 1955 (gage height, 19.30 ft), from rating curve extended above 4,300 cfs on basis of one float measurement at gage height 16.0 ft and slope-area measurement at gage height 19.15 ft; minimum, 69 cfs Aug. 26, 1931.

Remarks.--Records excellent. Several small diversions above station for irrigation and mining.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 18-30)

Oct. 1 to Apr. 3

Apr. 4 to Sept. 30

1.5	104	1.3	96
1.7	123	1.5	114
2.0	156	1.7	134
2.5	227	2.0	170
3.0	322	2.5	249
4.0	598	3.0	350
5.0	1,010	4.0	640
6.0	1,620	5.0	1,050
		6.0	1,620

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	118	491	172	636	294	732	920	1010	247	142	115
2	116	118	540	168	563	313	925	822	1060	237	141	112
3	116	123	337	166	630	315	1260	884	969	235	137	110
4	116	123	262	163	477	300	1310	888	960	232	136	107
5	117	123	224	161	397	322	1160	834	928	227	136	107
6	131	133	196	161	366	320	1050	842	902	224	141	107
7	137	167	191	157	337	300	992	778	866	218	142	106
8	127	142	182	156	320	298	892	794	830	210	138	106
9	121	*131	177	164	776	351	897	902	778	205	136	110
10	124	128	174	166	1060	331	854	1270	730	198	134	110
11	131	170	173	162	970	358	834	1100	703	193	134	107
12	129	269	167	*161	764	351	938	969	664	190	142	105
13	127	275	167	158	630	344	794	964	630	187	155	102
14	125	237	166	156	556	382	802	1010	608	183	137	101
15	120	184	171	156	588	637	750	1070	584	174	132	100
16	117	166	188	155	550	*566	854	1100	555	170	*130	105
17	117	168	507	154	501	572	992	1160	522	167	129	118
18	118	417	408	152	452	522	*978	1240	480	166	127	115
19	118	258	313	151	415	513	834	1370	444	165	129	110
20	118	192	273	150	397	644	742	1280	*411	161	135	107
21	118	178	255	150	385	634	714	1200	386	158	127	106
22	117	168	248	149	390	634	714	1230	364	153	124	105
23	117	162	236	149	363	748	678	1200	346	152	120	105
24	118	162	227	150	346	752	630	1140	326	151	120	102
25	118	181	217	150	346	732	616	1140	310	149	118	100
26	125	335	208	176	324	708	636	1090	298	146	117	100
27	125	236	202	187	315	748	664	974	282	145	119	99
28	121	191	191	171	302	676	730	942	269	144	122	98
29	120	178	185	185	—	630	818	874	262	144	124	97
30	119	176	184	258	—	627	858	862	254	143	123	97
31	118	—	178	914	—	662	—	838	—	142	118	—
Total	3,757	5,609	7,638	5,828	14,156	15,584	25,648	31,687	17,731	5,616	4,075	3,169
Mean	121	187	246	188	506	503	855	1,022	591	181	131	106
Max.	137	417	540	914	1,060	752	1,310	1,370	1,060	247	155	118
Min.	116	118	166	149	302	294	616	778	254	142	117	97
Ac-ft	7,450	11,130	15,150	11,560	28,080	30,910	50,870	62,850	35,170	11,140	8,080	6,290

Calendar year 1960 : Max 11,800 Min 110 Mean 575 Acra-feet 417,100
 Water year 1960-61 : Max 1,370 Min 97 Mean 385 Acra-feet 278,700

Peak discharge (base, 3,200 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

793

11-4133. Slate Creek below diversion dam, near Strawberry Valley, Calif.

Location.--Lat 39°36'52", long 121°03'04" in SE¼SW¼ sec.2, T.20 N., R.8 E., on right bank 300 ft downstream from diversion dam, 0.2 mile upstream from Feney Ravine and 4.5 miles northeast of town of Strawberry Valley.

Drainage area.--49.4 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,570 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,970 cfs Jan. 31 (gage height, 6.68 ft) from rating curve extended above 450 cfs; minimum, 7.1 cfs Sept. 29, 30.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No storage or diversion above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.6	8.2	328	a36	*426	109	318	350	176	31	13	9.4
2	8.6	7.9	192	a34	402	114	435	326	160	30	13	9.0
3	8.6	9.1	94	a30	392	114	591	318	142	29	13	8.7
4	8.6	10	63	*30	264	109	654	298	134	27	13	8.7
5	*8.6	8.6	50	32	208	113	564	266	128	26	12	8.7
6	15	10	38	32	185	113	*474	314	118	26	14	8.4
7	12	22	*39	28	164	107	*400	298	113	25	14	8.4
8	8.8	*14	39	30	150	111	342	274	109	23	14	8.0
9	8.2	11	36	35	a700	120	330	278	102	22	13	8.0
10	8.4	9.9	35	36	a500	114	306	433	95	22	13	8.0
11	9.3	28	34	34	a450	134	294	415	94	21	12	8.0
12	9.1	73	32	33	a350	136	318	395	87	20	13	7.7
13	8.6	47	33	32	a300	142	278	380	83	19	13	*7.6
14	8.4	37	33	32	a240	176	263	385	80	18	12	7.4
15	8.2	32	34	31	a260	298	252	390	*77	17	11	7.4
16	7.9	30	59	30	a220	217	278	*370	73	17	11	7.7
17	7.7	28	412	30	a200	200	*310	355	68	16	11	11
18	7.7	204	226	28	a180	180	290	353	64	16	11	11
19	7.9	60	140	28	a160	195	242	281	60	16	11	9.0
20	*7.9	38	105	28	a150	350	214	223	56	16	11	8.4
21	7.9	39	86	29	a140	294	214	202	52	16	11	8.0
22	7.9	35	81	28	a140	*298	202	198	48	15	10	8.0
23	7.7	*30	74	28	a140	474	185	188	46	15	*9.4	8.0
24	7.9	50	67	29	*138	405	171	178	43	14	9.4	8.0
25	*7.9	88	62	30	136	318	178	171	41	14	9.7	7.4
26	9.3	97	54	47	a124	278	*198	169	39	14	9.4	7.4
27	9.6	52	a50	63	a118	263	223	152	37	*14	9.7	7.4
28	8.6	39	a46	54	111	242	263	146	35	14	11	7.4
29	8.6	36	a42	54	-	238	314	138	34	14	11	7.4
30	8.2	36	a40	146	-----	252	338	140	33	14	10	7.1
31	8.2	-----	a38	996	-----	286	-----	142	-----	13	9.7	-----
Total	2699	11897	2662	2133	6948	6500	9439	8526	2427	594	3583	2466
Mean	8.71	39.7	85.9	68.8	248	210	315	275	80.9	19.2	11.6	8.22
Max.	15	204	412	996	700	474	654	433	176	31	14	11
Min.	7.7	7.9	32	28	111	107	171	138	33	13	9.4	7.1
Ac-ft	535	2,360	5,280	4,230	13,780	12,890	18,720	16,910	4,810	1,180	711	489
Calendar year 1960 :	Max -		Min -		Mean -		Acres-feet -					
Water year 1960-61 :	Max 996		Min 7.1		Mean 113		Acres-feet 81,900					

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4135. North Yuba River below Bullards Bar Dam, Calif.

Location.--Lat 39°24'15", long 121°08'30", in SW¹ sec.24, T.18 N., R.7 E., on right bank 2,000 ft downstream from Bullards Bar Dam, 3 miles upstream from confluence with Middle Yuba River, and 3 miles northwest of North San Juan.

Drainage area.--482 sq mi.

Records available.--October 1940 to September 1961. Prior to October 1949, published as North Fork Yuba River at Colgate diversion dam and October 1949 to September 1950 as North Yuba River at Colgate diversion dam. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 1,390 ft (from river-profile map). Prior to Oct. 1, 1950, at site 1 mile downstream at different datum.

Average discharge.--21 years, 1,506 cfs (1,090,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,540 cfs Feb. 10 (gage height, 10.00 ft); minimum daily, 0.2 cfs Oct. 10-13, 15, 16. 1940-61: Maximum discharge, 70,000 cfs Dec. 23, 1955 (gage height, 39.0 ft, from floodmark), from rating curve extended above 32,000 cfs on basis of computation of flow over dam at gage height 29.5 ft; no flow at times in 1949, 1956-57.

Remarks.--Records good except those for periods of fragmentary or no gage-height record, which are poor. Flow usually completely regulated below 650 cfs by Bullards Bar powerhouse, otherwise slightly regulated by Bullards Bar Reservoir. No large diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
2.1	1.5	4.5	122	4.2	95	6.0	460
2.3	4.4	5.0	180	4.5	122	7.0	960
2.6	10	5.5	275	5.0	189	8.0	1,650
3.0	22	6.0	445	5.5	294	9.5	3,080
3.5	46	7.0	940				
4.0	79	8.5	1,980				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	385	490	530	780	631	1,750	1,800	1,430	377	330	255
2	174	389	510	520	1,420	626	1,990	1,710	1,580	377	260	212
3	95	399	525	494	1,800	640	2,640	1,640	1,470	371	214	206
4	46	500	570	525	1,370	626	3,000	1,640	1,400	358	210	206
5	48	432	570	505	1,090	631	2,760	1,540	1,360	371	177	248
6	53	330	555	436	935	690	2,340	1,540	1,300	371	178	242
7	50	373	555	450	875	650	2,240	1,550	1,240	333	204	197
8	48	437	550	425	795	626	1,880	1,440	1,190	282	208	170
9	48	*405	555	409	1,320	725	1,770	1,490	1,120	282	206	98
10	20	282	555	370	3,050	735	1,710	2,050	1,050	296	223	98
11	a.2	100	550	351	2,700	745	1,590	2,220	1,010	342	246	173
12	a.2	280	540	344	2,340	828	1,700	2,030	960	381	210	173
13	a.2	413	535	261	1,720	780	1,590	1,960	906	374	206	173
14	5.7	417	*525	304	1,420	818	1,460	1,940	872	327	233	*173
15	a.2	458	491	324	1,390	*1,410	1,380	1,950	834	255	238	170
16	a.2	486	500	321	1,430	1,540	1,420	1,930	790	262	240	127
17	8.4	467	510	321	1,260	1,530	1,610	1,940	750	324	236	101
18	29	476	545	315	1,130	1,360	*1,690	1,980	710	374	238	182
19	51	486	550	285	1,010	1,250	1,490	2,190	665	371	189	198
20	45	490	555	213	942	1,630	1,320	2,180	626	*345	188	204
21	33	495	555	83	889	1,670	1,240	1,910	595	286	238	183
22	27	490	490	58	872	1,630	1,410	1,880	590	203	236	185
23	26	439	555	293	834	2,000	1,340	*1,890	536	206	231	101
24	38	425	555	361	780	2,140	1,200	1,780	487	292	229	102
25	41	425	560	*256	755	2,260	1,140	1,710	469	333	231	289
26	27	468	575	267	730	1,970	1,180	1,710	444	342	210	316
27	72	500	560	269	685	2,220	1,240	1,510	409	342	214	264
28	219	505	550	76	655	2,050	1,370	1,430	391	274	240	212
29	413	486	545	291	-	1,790	1,550	1,360	368	198	240	201
30	401	500	540	468	-	1,690	1,710	1,300	384	198	244	184
31	389	-	535	505	-	1,710	-	1,340	-	284	251	-
Total	25,961	12,738	16,756	10,630	34,977	39,601	50,710	54,540	25,936	9,731	6,998	5,643
Mean	83.7	425	541	343	1,249	1,277	1,690	1,759	865	314	226	183
Max.	413	505	575	530	3,050	2,260	3,000	2,220	1,580	381	330	316
Min.	0.2	100	490	58	655	626	1,140	1,300	368	198	177	98
Ac-ft	5,150	25,270	33,240	21,080	69,380	78,550	100,600	108,200	51,440	19,300	13,880	11,190

Calendar year 1960 : Max 32,600 Min 0.2 Mean 1,160 Acft 842,200
 Water year 1960-61 : Max 3,050 Min 0.2 Mean 742 Acft 537,300

* Discharge measurement made on this day.

a No gage-height record.

Note.--Fragmentary gage-height record Oct. 10, 14, 17.

795

Location.--Lat 39°19'30", long 120°22'05", in S¹NE¹ sec.23, T.17 N., R.14 E., on left bank at Central Sierra Snow Laboratory, U. S. Forest Service, 0.25 mile upstream from mouth and 0.6 mile east of Soda Springs.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder, sharp-edged V-notch weir and Parshall flume. Altitude of gage is 6,850 ft (from topographic map).

Extremes.--Maximum discharge during year, 127 cfs May 20 (gage height, 1.84 ft); no flow for many days.
1957-61: Maximum discharge, 261 cfs June 18, 1958 (gage height, 2.88 ft); no flow for many days in each year.

Remarks.--Records good. No regulation or diversion above station.

Cooperation.--Records furnished by the U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.19	0.22	0.72	2.31	8.71	28.1	55.1	1.57	0.02	
2		0	.19	.20	.62	2.82	16.6	27.5	58.4	1.41	0	
3		0	.10	.19	.65	2.38	33.5	37.4	45.9	1.69	0	
4		0	.16	.19	.76	2.21	38.7	35.6	44.5	1.34	0	
5		0	.15	.19	.79	1.84	34.0	27.2	39.0	1.14	0	
6		0	.15	.20	.88	1.73	31.0	20.2	34.5	1.06	0	
7		0	.15	.24	.86	2.02	23.8	20.2	31.9	.89	0	
8		0	.13	.23	.80	1.99	24.8	36.5	28.8	.76	0	
9		0	.13	.21	1.51	1.84	24.9	52.7	23.8	.76	0	
10		0	.13	.22	5.47	1.95	23.6	48.7	21.5	.62	0	
11		0	.12	.26	12.9	1.80	33.9	26.0	18.6	.55	0	
12		0	.13	.36	5.44	1.62	26.2	20.0	17.5	.51	0	
13		0	.13	.34	4.81	1.74	18.3	26.3	15.4	.46	0	
14		0	.14	.32	3.62	2.45	20.4	44.3	14.5	.43	0	
15		0	.15	.43	3.19	2.77	31.7	53.7	13.7	.41	0	
16		0	.13	.48	2.79	2.36	50.7	62.0	12.1	.38	0	
17		0	.14	.44	2.48	2.08	55.2	70.2	10.6	.29	0	
18		.03	.19	.52	2.35	2.15	37.1	74.7	8.96	.29	0	
19		.09	.17	.63	2.11	2.12	26.1	72.8	7.54	.22	0	
20		.10	.17	.69	2.11	2.32	21.3	79.6	6.15	.18	0	
21		.10	.20	.62	2.50	3.00	17.3	70.6	5.58	.16	0	
22		.10	.24	.68	3.52	4.86	12.9	71.4	4.92	.14	0	
23		.10	.24	.70	3.03	4.97	10.9	62.2	4.3	.13	0	
24		.10	.26	.55	2.63	3.60	10.8	63.2	3.6	.12	0	
25		.08	.27	.74	2.47	3.11	10.5	65.0	3.29	.06	0	
26		.08	.26	.67	2.22	2.69	11.4	46.6	2.90	.08	0	
27		.09	.26	.63	2.06	2.50	14.5	43.0	2.55	.04	0	
28		.10	.23	.64	1.99	2.50	21.1	35.1	2.24	.02	0	
29		.10	.21	.65	-	2.60	27.1	32.0	2.10	0	0	
30		.10	.20	.64	-	3.58	34.1	27.0	1.73	.02	0	
31			.22	.69	-	5.83	-	38.0	-	.03	0	
Total	0	1.17	5.54	13.77	75.28	81.74	751.11	1,417.8	541.65	15.76	0.02	0
Mean	0	0.039	0.179	0.444	2.69	2.64	25.0	45.7	18.1	0.508	0.0006	0
Max.	0	0.10	0.27	0.74	12.9	5.83	55.2	79.6	58.4	1.69	0.02	0
Min.	0	0	0.10	0.19	0.62	1.62	8.71	20.0	1.73	0	0	0
Ac-ft	0	2.3	10.9	27.3	149	162	1,490	2,812	1,074	31.3	0	0
Calendar year 1960:			Max	101	Min	0	Mean	9.92	Acres-foot	7,199		
Water year 1960-61:			Max	79.6	Min	0	Mean	7.96	Acres-foot	5,759		

SACRAMENTO RIVER BASIN

11-4140. South Yuba River near Cisco, Calif.

Location.--Lat 39°19'12", long 120°33'38", in SW $\frac{1}{4}$ sec.19, T.17 N., R.13 E., on right bank 0.7 mile downstream from Rattlesnake Creek, 1.3 miles west of Cisco Grove, and 1.5 miles northwest of Cisco.

Drainage area.--51.5 sq mi.

Records available.--April 1942 to September 1961. Prior to October 1949, published as South Fork Yuba River near Cisco.

Gage.--Water-stage recorder. Altitude of gage is 5,520 ft (from river-profile map). Prior to October 1945, at site 200 ft upstream at same datum.

Average discharge.--19 years, 189 cfs (136,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,070 cfs May 18 (gage height, 5.75 ft); minimum, 8.1 cfs Jan. 5.

1942-61: Maximum discharge, 11,700 cfs Nov. 20, 1950 (gage height, 15.82 ft), from rating curve extended above 4,600 cfs on basis of slope-area measurement of peak flow; minimum daily, 0.1 cfs Nov. 5-7, 1954.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Low flow regulated by Lake Van Norden (capacity, 4,320 acre-ft, 5,260 acre-ft with flashboards).

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	7.2	3.5	210
2.0	12	4.0	350
2.2	24	5.0	710
2.5	48	6.0	1,210
3.0	109		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	14	60	b13	93	64	240	404	452	81	13	13
2	14	14	42	b12	108	90	398	326	522	80	13	12
3	14	14	b29	11	103	85	570	407	374	79	13	11
4	14	14	b25	10	68	73	562	404	377	77	13	12
5	14	14	b21	9.8	58	66	417	335	359	75	13	12
6	21	16	b19	9.8	59	62	368	281	338	73	13	12
7	16	19	19	9.8	*52	65	326	258	308	70	14	12
8	15	16	19	9.8	48	60	266	329	278	67	13	12
9	15	15	18	10	203	61	311	490	232	65	13	12
10	15	14	17	11	395	60	287	746	208	62	13	12
11	16	19	16	11	266	61	326	434	182	59	13	12
12	15	27	13	12	152	59	353	*323	154	56	16	12
13	15	21	13	12	111	64	222	299	112	*52	15	12
14	14	18	12	12	98	93	232	438	100	48	13	12
15	13	19	11	12	98	114	284	536	91	44	13	12
16	13	19	11	13	85	85	452	582	94	41	13	13
17	13	19	33	13	76	79	501	634	90	35	13	17
18	13	30	24	13	69	73	380	706	77	30	13	15
19	13	25	19	14	66	82	250	710	66	26	13	13
20	*13	20	*16	15	69	124	191	658	64	24	14	12
21	13	19	17	16	82	a140	162	650	55	21	13	12
22	13	19	19	16	97	a160	135	654	47	19	13	12
23	13	b19	19	16	79	a180	124	590	33	18	12	12
24	13	17	19	16	71	a150	112	570	29	17	12	12
25	14	17	18	17	73	116	111	582	36	16	12	12
26	14	19	17	28	66	98	137	445	33	14	12	12
27	14	19	b16	29	61	*90	182	332	34	14	13	12
28	14	17	b17	23	59	84	255	353	80	14	14	12
29	14	18	15	22	-	88	320	317	85	14	16	12
30	14	18	13	31	-----	118	368	281	84	14	14	12
31	14	-----	13	147	-----	173	-----	320	-----	14	13	-----
Total	440	549	620	594.2	2865	2917	8842	14394	4994	1319	411	370
Mean	14.2	18.3	20.0	19.2	102	94.1	295	464	166	42.5	13.3	12.3
Max.	21	30	60	147	395	180	570	746	522	81	16	17
Min.	13	14	11	9.8	48	59	111	258	29	14	12	11
Ac-ft	873	1,090	1,230	1,180	5,680	5,790	17,540	28,550	9,910	2,620	815	734

Calendar year 1960 : Max 1,880 Min 3.1 Mean 150 Acra-feet 103,800
 Water year 1960-61 : Max 746 Min 9.8 Mean 105 Acra-feet 76,010

Peak discharge (base, 1,500 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

SACRAMENTO RIVER BASIN

797

11-4155. Bowman Lake near Graniteville, Calif.

Location--Lat 39°26'55", long 120°39'05", in SE 1/4 sec. 5, T.18 N., R.12 E., on rock-fill portion of Bowman Dam on Canyon Creek, 4.5 miles east of Graniteville and 8 miles south of Sierra City.

Drainage area--29.4 sq mi.

Records available--December 1926 to September 1961.

Gage--Staff gage read once daily. Datum of gage is at mean sea level (levels by Nevada Irrigation District).

Extremes--Maximum contents observed during year, 62,900 acre-ft June 20, 21, 23 (elevation, 5,556.4 ft); minimum observed, 6,090 acre-ft Jan. 31, Feb. 8, 9 (elevation, 5,457.3 ft).

1926-61: Maximum contents observed, 70,500 acre-ft for one or more days in 1937, 1943, 1950-51, 1953-54 (elevation 5,565.9 ft); no contents Nov. 25 to Dec. 9, 1949.

Remarks--Lake is formed by 1 rock-fill and 1 concrete-arch dam; completed and storage began in November 1926. Capacity, 68,200 acre-ft between elevations 5,400 ft (bottom of outlet tunnel) and 5,563 ft (crest of concrete-arch dam) above mean sea level. Flashboards are occasionally added, increasing elevation to 5,565.0 ft and capacity to 69,800 acre-ft. Lake receives water from Middle Yuba River through Milton-Bowman tunnel (see p. 787), and releases it through Bowman-Spaulding Canal (see following page) which conveys it to reservoirs of Pacific Gas and Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. Figures given herein represent total contents, all of which is available for release.

Cooperation--Record of gage heights furnished by Nevada Irrigation District.

Capacity table (elevation, in feet, and contents, in acre-ft)

5,450.0	4,100	5,510.0	30,000
5,460.0	6,900	5,540.0	49,800
5,470.0	10,200	5,570.0	73,800
5,480.0	14,200		

Contents, in acre-feet, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37,500	29,300	22,500	11,500	6,120	6,960	8,880	27,200	54,400	62,100	49,100	40,800
2	36,900	29,300	22,200	11,500	6,120	6,780	9,000	28,000	55,200	61,600	48,800	40,600
3	36,700	29,300	22,000	10,700	6,180	6,750	10,200	29,000	56,200	61,200	48,400	40,400
4	36,300	29,000	21,700	10,300	6,240	6,810	11,200	29,600	57,100	60,800	48,000	40,000
5	35,900	29,000	21,300	10,100	6,150	6,870	12,000	30,100	57,800	60,400	47,700	39,700
6	35,600	29,000	21,000	9,840	6,150	6,870	12,600	30,900	58,600	60,000	47,400	39,500
7	35,200	28,900	20,800	9,800	6,150	6,930	13,200	31,300	59,400	59,600	47,000	39,200
8	34,800	28,700	20,400	9,640	6,090	6,900	13,800	32,100	59,800	59,200	46,600	38,800
9	34,500	28,400	19,900	9,400	6,090	6,930	14,200	32,600	60,400	58,800	46,300	38,500
10	34,100	28,100	19,600	9,400	6,390	6,960	14,800	33,800	60,800	58,500	46,000	38,100
11	33,700	27,800	19,200	9,120	6,480	6,960	15,300	35,100	61,200	58,000	45,600	37,800
12	33,400	27,800	18,800	8,880	6,570	6,990	15,900	35,800	61,600	57,600	45,200	37,300
13	32,900	27,700	18,400	8,640	6,720	6,990	16,800	36,100	61,900	57,200	44,900	37,000
14	32,500	27,500	18,000	8,280	6,780	6,990	17,300	36,700	62,200	56,800	44,600	36,700
15	32,000	27,200	17,600	8,070	6,780	6,990	17,800	37,300	62,500	56,400	44,400	36,400
16	31,500	26,900	17,200	8,010	6,900	7,140	18,200	39,000	62,800	55,900	44,100	36,100
17	31,100	26,600	16,900	7,950	6,960	7,200	19,400	40,400	62,800	55,600	44,000	35,700
18	30,800	26,500	16,600	7,890	6,960	7,260	20,200	41,500	62,800	55,200	43,700	35,300
19	30,400	26,200	16,200	7,800	7,020	7,320	20,900	42,200	62,800	54,700	43,500	34,900
20	30,100	25,900	15,800	7,680	6,960	7,380	21,400	43,800	62,900	54,200	43,300	34,700
21	29,600	25,700	15,400	7,590	6,930	7,470	21,900	45,300	62,900	53,700	43,200	34,400
22	29,200	25,400	14,900	7,410	6,930	7,650	22,300	46,300	62,800	53,300	42,900	34,100
23	28,700	25,100	14,700	7,230	6,930	7,860	22,800	47,400	62,900	52,900	42,700	33,800
24	28,400	24,700	14,400	7,050	7,020	8,010	23,200	48,400	62,800	52,500	42,700	33,500
25	28,400	24,400	14,100	6,930	7,050	8,250	23,500	49,300	62,800	52,200	42,500	33,100
26	28,700	24,100	13,700	6,810	7,050	8,430	23,900	50,000	62,700	51,700	42,400	32,800
27	29,000	23,800	13,300	6,660	7,110	8,520	24,400	51,100	62,700	51,300	42,000	32,300
28	29,200	23,400	13,000	6,480	7,080	8,580	25,100	51,600	62,700	50,900	41,700	32,100
29	29,200	23,200	12,600	6,330	-	8,610	25,700	52,200	62,600	50,400	41,400	31,700
30	29,300	22,800	12,200	6,150	-	8,700	26,400	53,000	62,400	50,000	41,200	31,500
31	29,400	-	11,800	6,090	-	8,850	-	53,800	-	49,700	41,000	-
(†)	5,509.0	5,497.9	5,474.0	5,457.3	5,460.6	5,466.5	5,504.0	5,545.0	5,555.8	5,539.8	5,527.4	5,512.5
(*)	-8,500	-6,600	-11,000	-5,710	+990	+1,770	+17,550	+27,400	+8,600	-12,700	-8,700	-9,500

Calendar year 1960..... * -2,400
 Water year 1960-61..... * -6,400

† Elevation, in feet, at end of month.

* Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11-4160. Bowman-Spaulding Canal at intake, Calif.

Location.--Lat 39°26'45", long 120°39'15", in sec.8, T.18 N., R.12 E., on left bank 150 ft downstream from intake, 0.3 mile downstream from Bowman Dam, and 8 miles south of Sierra City.

Records available.--October 1927 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,400 ft (from topographic map).

Average discharge.--34 years, 145 cfs (105,000 acre-ft per year).

Extremes.--1927-61: Maximum daily discharge, 262 cfs Aug. 2-9, 29, Sept. 10-13, 1928; no flow at times in most years.

Remarks.--Records good. Canal diverts from left bank of Canyon Creek below Bowman Lake. Water is delivered to Lake Spaulding and, after passing through several powerhouses, is used for irrigation by Nevada Irrigation District.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	209	209	193	205	57	141	64	8.5	22	207	194	183
2	209	208	196	204	58	150	64	10	28	207	188	183
3	209	208	205	204	57	93	64	7.2	26	205	182	182
4	208	207	210	141	56	61	65	5.9	24	206	181	183
5	207	207	209	102	56	61	64	5.4	24	207	180	182
6	207	207	209	*102	56	61	64	16	24	207	182	182
7	207	207	207	102	55	61	66	13	24	207	182	183
8	207	206	207	102	55	62	27	9.6	25	208	182	183
9	208	206	206	102	66	62	3.0	8.6	25	208	180	183
10	209	206	207	102	57	63	2.0	26	25	207	181	182
11	209	202	207	101	57	63	2.0	19	26	207	182	183
12	209	202	207	100	57	63	2.1	20	26	206	183	183
13	209	206	206	100	57	64	6.0	16	26	207	183	183
14	208	206	204	100	57	64	6.6	12	23	208	182	182
15	209	206	204	100	58	66	4.1	10	53	207	182	182
16	209	205	207	99	58	* 64	9.4	10	79	207	182	183
17	208	205	209	99	57	64	7.8	11	79	207	182	185
18	209	204	207	98	56	64	2.2	11	80	206	182	185
19	209	207	207	100	56	64	2.0	11	67	205	181	184
20	208	206	207	100	57	66	2.0	12	78	204	182	183
21	208	207	205	99	57	66	2.4	13	58	203	*182	183
22	a 208	207	204	99	57	65	2.9	13	56	202	182	183
23	a 208	207	204	99	56	67	3.6	14	80	201	182	182
24	a 208	206	203	99	56	66	5.9	15	80	200	181	182
25	a 209	207	202	98	56	66	11	16	80	200	181	182
26	a 209	208	207	98	56	66	13	17	60	200	181	182
27	*209	207	218	98	56	66	14	18	42	200	183	181
28	209	207	214	98	102	64	13	18	54	201	183	180
29	209	207	207	98	—	64	11	18	57	203	183	180
30	209	207	207	100	—	66	8.7	19	139	204	183	180
31	209	—	205	83	—	66	—	19	—	200	183	—
Total	5,462	6,190	5,390	3,432	1,639	2,179	612.7	422.2	1,898	5,347	5,657	5,474
Mean	208	206	206	111	58.5	70.3	20.4	13.6	49.7	205	182	182
Max.	209	209	218	205	102	150	66	26	139	208	194	185
Min.	207	202	193	83	55	61	2.0	5.4	22	200	180	180
Ac-ft	12,820	12,280	12,670	6,810	3,250	4,320	1,220	837	2,960	12,590	11,220	10,860
Calendar year 1960 :			Max 218	Min 0.6	Mean 161	Acres-foot 116,600						
Water year 1960-61 :			Max 218	Min 2.0	Mean 127	Acres-foot 91,840						

* Discharge measurement made on this day.

a No gage-height record.

11-4165. Canyon Creek below Bowman Lake, Calif.

Location.--Lat 39°26'20", long 120°39'40", in SE $\frac{1}{4}$ sec. 7, T.18 N., R.12 E., on left bank 1 mile downstream from Bowman Lake, 3 miles upstream from Texas Creek, and 9 miles south of Sierra City.

Drainage area.--30.4 sq mi.

Records available.--January 1927 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,100 ft (from topographic map).

Average discharge.--34 years, 37.4 cfs (27,080 acre-ft per year).

Extremes.--Maximum discharge during year, 44 cfs Dec. 1 (gage height, 2.26 ft); no flow for many days.
1927-61: Maximum discharge, 2,520 cfs Dec. 4, 1950 (gage height, 6.28 ft); no flow at times.

Remarks.--Records good. Flow regulated by French Lake Reservoir (usable capacity, 13,840 acre-ft), by Bowman Lake (see p. 797), several smaller reservoirs, and diversion into Bowman-Spaulding Canal (see preceding page). Bowman Lake receives water from Middle Yuba River through Milton-Bowman tunnel (see p. 787).

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

1.0	0
1.1	.8
1.2	2.0
1.4	4.3
1.6	7.2
1.8	12

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.3	1.1	0.6	2.9	0.7	3.7	2.1	1.2	0.3	0	0.1
2	.3	.3	3.3	.6	3.5	.9	4.6	1.8	1.4	.2	0	.1
3	.3	.3	2.0	.6	2.8	1.0	4.1	1.4	1.0	.2	0	.1
4	.3	.4	1.6	.6	1.7	.9	3.7	1.2	.8	.2	0	.1
5	.3	.4	1.3	.5	1.4	.8	2.3	1.0	.7	.2	0	.1
6	.4	.6	1.2	*.4	1.3	.9	1.7	2.8	.7	.2	0	.1
7	.6	.7	1.0	.4	1.3	.8	1.4	2.1	.7	.2	0	.1
8	.6	.5	.9	.4	1.2	.9	1.2	1.6	.7	.1	0	.1
9	.5	.4	.9	.4	9.0	1.2	1.0	1.3	.7	.1	0	.1
10	.5	.3	.8	.5	3.7	1.3	1.0	*5.1	.6	.1	0	.1
11	.6	2.0	.8	.5	3.0	1.4	.9	3.5	.6	.1	0	.1
12	.6	2.0	.8	.5	2.4	1.4	1.2	3.8	.6	.1	.4	.1
13	.6	1.3	.8	.5	1.8	2.1	1.8	2.8	.5	.1	.2	.1
14	.5	1.0	.8	.5	1.8	3.1	1.4	1.8	1.3	.1	.1	.1
15	.5	.9	.8	.5	2.4	3.7	1.0	1.4	1.5	.1	.1	.1
16	.5	.9	1.6	.5	2.0	*2.3	.9	1.3	.5	.1	.1	.2
17	.5	1.2	6.2	.5	1.7	2.0	1.0	1.0	.4	.1	0	.2
18	.6	7.2	2.5	.5	1.4	1.7	.8	1.0	.4	.1	0	.1
19	.6	2.0	1.8	.5	1.3	2.2	.7	.9	.4	.1	.1	.1
20	.6	1.2	1.6	.4	1.3	4.6	.7	.9	.4	0	.1	.1
21	.6	1.2	1.5	.5	1.4	3.3	.7	.9	.4	0	*.1	.1
22	.6	1.0	1.6	.5	1.4	3.0	1.0	.8	.3	0	.1	.2
23	.6	.8	1.4	.4	1.0	4.4	1.2	.7	.3	0	.1	.1
24	.6	.8	1.2	.4	1.0	3.0	1.0	.7	.3	0	.1	.1
25	.6	.8	1.2	.5	1.0	2.4	1.6	.6	.3	0	.1	.3
26	.6	1.2	1.0	.6	.9	2.1	2.6	.6	.3	0	.1	.1
27	*.2	1.0	1.8	.8	.8	1.8	2.9	.6	4.2	0	.1	.1
28	.3	1.0	8.0	.7	.7	1.6	2.6	.5	5.6	0	.1	.2
29	.3	1.0	1.0	.6	—	2.2	2.5	.5	5.2	0	.1	.2
30	.3	.9	.8	2.4	—	3.0	2.1	.6	.7	0	.1	.2
31	.3	—	.7	9.3	—	3.3	—	.8	—	0	.1	—
Total	14.5	33.6	61.9	26.6	56.1	64.0	53.3	46.1	32.7	2.7	2.2	3.8
Mean	0.47	1.12	2.00	0.86	2.00	2.06	1.78	1.49	1.09	0.09	0.07	0.13
Max.	0.6	7.2	11	9.3	9.0	4.6	4.6	5.1	5.6	0.3	0.4	0.3
Min.	0.2	0.3	0.7	0.4	0.7	0.7	0.7	0.5	0.3	0	0	0.1
Ac-ft	29	67	123	53	111	127	106	91	65	5.4	4.4	7.5
Calendar year 1960:				Max 474	Min 0.1	Mean 20.0		Acres-foot 14,560				
Water year 1960-61:				Max 11	Min 0	Mean 1.09		Acres-foot 789				

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4170, South Yuba River near Washington, Calif.

Location.--Lat 39°21'38", long 120°46'14" on line between secs.5 and 8, T.17 N., R.11 E., on left bank 800 ft upstream from unnamed tributary and 1.5 miles east of Washington.

Drainage area.--199 sq mi.

Records available.--March 1942 to September 1953, October 1956 to September 1961. Prior to October 1949, published as South Fork Yuba River near Washington.

Gage.--Water-stage recorder. Altitude of gage is 2,785 ft (from river-profile map). Oct. 1, 1948, to Sept. 30, 1953, water-stage recorder at site 0.8 mile upstream at different datum.

Average discharge.--16 years, 286 cfs (207,100 acre-ft per year).

Extremes.--Maximum discharge during year, 810 cfs Dec. 1 (gage height, 4.50 ft); minimum, 13 cfs Sept. 3.

1942-53, 1956-61: Maximum discharge, 24,700 cfs Nov. 20, 1950 (gage height, 17.34 ft, present site and datum), from rating curve extended above 4,700 cfs on basis of slope-area measurement of peak flow of Dec. 23, 1955; minimum, 9.1 cfs Oct. 18, 1950. Maximum stage since March 1942, 17.8 ft Dec. 23, 1955, present site and datum, from floodmarks (discharge, 26,300 cfs, slope-area measurement).

Remarks.--Records good. Natural flow affected by Lake Spaulding beginning in 1912 (capacity, 74,500 acre-ft), Bowman Lake (see p. 797), Fordyce Lake beginning in 1926 (capacity, 46,700 acre-ft), diversions into and out of basin for several powerhouses and for irrigation of about 20,000 acres by Nevada Irrigation District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.4	11	2.3	92
1.6	20	2.6	149
1.8	33	3.0	246
2.0	52	4.0	586

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	18	249	35	126	49	156	106	74	18	18	16
2	16	18	200	34	107	51	178	97	193	18	18	15
3	16	20	100	33	117	53	188	88	208	18	16	14
4	16	19	73	32	82	49	167	80	132	20	16	15
5	16	18	62	32	67	53	141	74	60	19	16	15
6	22	21	53	31	60	59	120	99	50	19	16	15
7	22	27	48	30	57	52	109	102	48	20	16	15
8	20	25	44	30	53	57	95	89	47	18	16	15
9	19	23	42	29	208	82	92	82	45	19	16	15
10	20	21	40	29	230	73	88	174	43	19	16	15
11	21	32	40	28	202	83	80	185	42	19	16	15
12	20	70	38	28	164	84	90	188	40	18	16	15
13	20	72	38	27	120	78	89	162	38	18	18	15
14	20	62	38	27	104	88	88	134	35	18	17	15
15	18	44	38	27	118	185	77	113	34	17	16	*15
16	18	39	41	26	109	143	73	106	32	17	16	16
17	18	42	143	26	106	145	72	120	30	17	*16	19
18	18	131	88	25	86	124	68	176	30	16	16	22
19	18	72	68	25	77	124	*64	280	28	*18	16	18
20	19	49	60	25	74	218	60	463	*27	18	17	17
21	19	44	56	25	73	171	62	445	27	19	16	17
22	18	41	53	24	72	151	84	424	25	18	16	16
23	18	38	50	24	67	195	86	438	23	18	16	17
24	18	36	48	24	*62	195	82	*304	22	18	16	16
25	18	37	45	24	60	183	94	254	21	18	16	16
26	19	94	43	31	57	164	115	304	21	18	16	16
27	19	59	40	36	53	183	120	149	20	18	16	15
28	*18	49	53	32	51	*156	122	68	21	18	16	15
29	18	*44	39	32	-	143	118	63	22	18	20	16
30	18	41	*37	51	-	145	107	59	22	18	18	18
31	18	-	36	*208	-	153	-	65	-	18	18	-
Total	574	1306	2003	1090	2762	3689	3085	5491	1460	563	512	479
Mean	18.5	43.5	64.6	35.2	98.6	119	103	177	48.7	18.2	16.5	16.0
Max.	22	131	249	208	230	218	188	463	208	20	20	22
Min.	16	18	36	24	51	49	60	59	20	16	16	14
Ac-ft	1,140	2,590	3,970	2,160	5,480	7,320	6,120	10,890	2,900	1,120	1,020	950

Calendar year 1960: Max 2,950 Min 14 Mean 169 Acre-feet 123,000
 Water year 1960-61: Max 463 Min 14 Mean 63.1 Acre-feet 45,660

* Discharge measurement made on this day.

11-4175. South Yuba River at Jones Bar, Calif.

Location.--Lat 39°17'32", long 121°06'13", near center of sec.32, T.17 N., R.8 E., on left bank, 100 ft upstream from Rush Creek, 0.9 mile downstream from bridge on State Highway 49, and 5 miles northwest of Grass Valley.

Drainage area.--313 sq mi.

Records available.--October 1940 to September 1948 (published as South Fork Yuba River at Jones Bar), April 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,050 ft (from topographic map). Oct. 1, 1940, to Sept. 30, 1948, water-stage recorder at site 150 ft upstream at datum 2.00 ft higher.

Average discharge.--10 years, 442 cfs (305,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,140 cfs Feb. 10 (gage height, 7.40 ft); minimum, 4.1 cfs Sept. 5.

1940-48, 1959-61: Maximum discharge, 19,000 cfs Jan. 22, 1943 (gage height, 17.60 ft, site and datum then in use); minimum, 1.0 cfs Sept. 10-13, 1944.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Lake Spaulding (capacity, 74,500 acre-ft), Fordyce Lake (capacity, 46,700 acre-ft), Bowman Lake (see p. 797), many smaller reservoirs, diversions into and out of basin for several powerhouses, and for irrigation of about 20,000 acres by the Nevada Irrigation District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7-9, Oct. 22 to Nov. 11)

1.7	3.4	3.5	84
1.8	5.2	4.0	126
2.0	10	4.5	190
2.3	20	5.0	278
2.6	32	6.0	548
3.0	54	7.0	940

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	22	241	76	355	110	349	214	137	26	9.3	6.8
2	9.6	22	594	71	257	110	357	214	160	22	9.6	5.2
3	10	23	290	71	307	119	384	187	311	22	9.3	4.7
4	10	26	187	70	208	112	370	175	195	22	7.8	4.3
5	10	24	149	70	163	119	330	161	146	22	7.3	4.3
6	12	24	130	70	144	143	284	179	93	22	7.3	5.7
7	16	32	115	70	134	129	262	206	88	23	7.8	6.4
8	20	39	110	65	122	123	231	183	83	22	7.5	6.4
9	20	35	100	65	455	211	219	168	79	20	6.8	5.0
10	15	30	95	65	652	182	212	259	77	19	6.6	6.6
11	14	44	95	60	627	173	193	311	74	18	6.4	5.2
12	15	155	90	60	486	186	203	339	73	17	6.4	4.8
13	15	230	90	60	320	169	212	300	68	16	6.4	* 5.7
14	15	190	90	60	256	173	196	264	60	16	7.3	4.8
15	15	120	90	60	274	581	179	229	52	15	* 6.8	6.1
16	14	90	95	60	276	418	170	211	50	14	6.1	4.8
17	14	100	350	60	235	471	170	198	46	14	5.9	6.6
18	14	195	225	60	212	357	166	252	43	14	5.9	9.6
19	14	190	180	60	184	307	* 154	280	* 42	* 13	5.9	10
20	14	108	150	* 60	170	406	144	535	41	12	6.4	8.0
21	15	90	130	56	163	381	145	486	39	12	7.3	6.4
22	17	82	120	55	157	334	227	489	36	12	6.6	5.9
23	17	77	110	55	* 149	438	260	489	34	12	5.7	5.9
24	17	73	105	55	141	510	220	* 392	31	12	5.4	6.4
25	18	108	95	55	132	545	211	298	28	12	6.6	6.6
26	* 24	420	90	67	125	459	233	344	28	12	6.1	5.7
27	26	180	90	80	119	510	235	253	25	12	6.1	5.4
28	25	135	120	73	114	* 477	229	146	23	9.6	6.6	5.2
29	24	* 100	* 85	77	-	404	227	113	24	9.3	6.8	4.8
30	23	96	79	77	-	370	217	108	28	8.8	8.0	4.8
31	22	-	78	* 371	-	360	-	117	-	9.3	7.5	-
Total	504.2	3060	4568	2314	6937	9387	6989	8100	2214	4000	2155	178.1
Mean	16.3	102	147	74.6	248	303	233	261	73.8	15.8	6.95	5.94
Max.	26	420	594	371	652	581	384	535	311	26	9.6	10
Min.	9.6	22	78	55	114	110	144	108	23	8.8	5.4	4.3
Ac-ft	1,000	6,070	9,060	4,590	13,760	18,620	13,860	16,070	4,390	972	427	353

Calendar year 1960: Max 7,950 Min 6.4 Mean 275 Acra-feet 199,300
Water year 1960-61: Max 652 Min 4.3 Mean 123 Acra-feet 891,700

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 12-18, 26-29, Dec. 6-29, Jan. 4-20.

11-4185. Deer Creek near Smartville, Calif.

Location.--Lat 39°13'28", long 121°16'03", in SW 1/4 sec. 23, T. 16 N., R. 6 E., on left bank 400 ft upstream from county road bridge, 0.9 mile upstream from mouth, and 2 miles northeast of Smartville.

Drainage area.--84.6 sq mi.

Records available.--June 1935 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 630 ft (from river-profile map). June 21, 1935, to Nov. 30, 1938, staff gage at same site and datum.

Average discharge.--26 years, 135 cfs (97,740 acre-ft per year).

Extremes.--Maximum discharge during year, 1,730 cfs Mar. 24 (gage height, 6.58 ft); minimum, 0.8 cfs Sept. 3, 4.

1935-61: Maximum discharge, 11,300 cfs Mar. 9, 1943, Dec. 23, 1955, from rating curve extended above 5,200 cfs; maximum gage height, 13.62 ft Mar. 9, 1943; minimum discharge, 0.1 cfs Aug. 4-6, 15, 1940.

Remarks.--Records good. Natural flow of stream is affected by Scotts Flat Reservoir beginning in 1949 (usable capacity, 26,300 acre-ft), Deer Creek Reservoir (capacity, 1,400 acre-ft), power developments, and diversion for irrigation. At times, water from South Yuba River is diverted into Deer Creek and water from Deer Creek is diverted to Bear River.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 13

Nov. 13 to Sept. 30

1.0	2.4	1.7	33
1.2	7.4	2.0	57
1.4	16	2.5	110

0.85	0.6	2.0	54
.9	1.1	2.5	105
1.0	2.4	3.0	172
1.2	6.8	3.5	254
1.4	13	4.0	366
1.7	30	5.0	745

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	5.8	6.9	11	163	*22	50	*29	9.3	2.6	*3.2	1.2
2	3.1	6.0	113	10	220	22	46	30	8.2	2.8	3.2	1.1
3	*3.8	6.9	58	9.9	130	25	*42	25	9.6	*3.2	3.2	1.0
4	3.8	11	36	9.6	66	21	42	21	8.4	3.4	3.0	1.0
5	3.8	11	29	9.9	47	25	38	16	7.9	3.4	2.6	1.1
6	4.5	11	20	9.6	40	46	35	17	7.1	3.6	2.1	1.0
7	6.3	12	17	9.3	34	28	27	20	6.3	3.4	2.4	1.2
8	7.1	11	16	9.3	30	26	25	18	5.5	3.8	2.3	1.6
9	6.3	11	15	10	420	85	23	14	5.5	3.4	2.0	1.4
10	7.4	11	15	11	216	42	*22	12	5.3	3.4	2.0	1.4
11	8.6	19	18	11	488	37	20	13	4.8	3.4	2.3	1.3
12	8.2	64	15	10	176	33	21	22	4.4	3.4	2.6	1.6
13	7.1	102	13	*10	91	30	33	15	3.8	3.2	2.8	1.8
14	7.8	67	14	10	66	31	28	13	3.2	3.4	2.8	2.1
15	7.4	29	14	10	110	568	25	11	3.2	3.0	2.6	2.3
16	6.9	16	17	10	96	127	23	10	3.2	2.8	2.1	2.6
17	7.1	*12	74	10	59	264	22	10	3.0	2.4	1.8	3.8
18	8.2	57	35	9.6	50	109	21	9.0	2.3	2.6	1.8	4.0
19	6.9	25	*24	9.3	42	80	20	8.4	3.4	2.6	2.0	3.0
20	5.3	15	20	9.6	37	110	18	8.7	3.8	2.6	2.3	2.8
21	4.7	14	18	9.9	35	74	21	9.6	3.0	2.8	2.4	2.6
22	4.5	12	17	9.9	32	62	69	8.7	2.4	3.0	2.3	2.6
23	4.5	11	17	9.9	29	154	111	8.7	2.1	3.2	2.0	2.6
24	5.3	10	15	10	27	363	62	8.2	2.8	3.4	1.6	2.3
25	5.8	71	14	10	25	268	42	7.3	3.0	3.2	1.3	2.4
26	7.8	712	14	14	25	160	35	6.3	3.8	3.4	1.2	2.3
27	8.2	70	13	15	25	146	31	6.0	3.4	3.2	1.3	2.3
28	6.9	33	12	11	24	115	29	5.8	3.0	2.8	1.8	2.3
29	6.6	24	11	23	-	81	26	5.8	2.8	2.8	1.7	2.0
30	6.0	21	11	61	-	67	26	5.5	2.8	2.8	1.6	1.8
31	5.8	-	11	*549	-	57	-	*73	-	2.8	*13	-
Total	188.6	1480.7	785	921.8	2803	3278	1033	4013	1373	95.8	67.6	60.5
Mean	6.08	49.4	25.3	29.7	100	106	34.4	12.9	4.58	3.09	2.18	2.02
Max.	8.6	712	113	549	488	568	111	30	9.6	3.8	3.2	4.0
Min.	2.9	5.8	11	9.3	24	21	18	5.5	2.1	2.4	1.2	1.0
Ac-ft	374	2,940	1,560	1,830	5,560	6,500	2,050	796	272	190	134	120
Calendar year 1960 :	Max 4,460		Min 0.8		Mean 68.3		Acres-feet 49,620					
Water year 1960-61 :	Max 712		Min 1.0		Mean 30.8		Acres-feet 22,330					

Peak discharge (base, 3,500 cfs)--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4205. Dry Creek at Virginia Ranch, Calif.

Location--Lat 39°19'20", long 121°18'45", in NW¼ sec. 21, T.17 N., R.6 E., on right bank 0.4 mile south of Virginia Ranch, 3.0 miles downstream from Willow Glen Creek, and 5.5 miles east of Loma Rica.

Drainage area--71.3 sq mi.

Records available--October 1948 to September 1961 (discontinued).

Gage--Water-stage recorder. Altitude of gage is 1,060 ft (from topographic map).

Average discharge--13 years, 104 cfs (75,290 acre-ft per year).

Extremes--Maximum discharge during year, 1,790 cfs Feb. 9 (gage height, 6.01 ft); minimum, 0.7 cfs Oct. 15, 16.

1948-61: Maximum discharge, 9,730 cfs Feb. 8, 1960 (gage height, 10.08 ft), from rating curve extended above 1,700 cfs on basis of slope-area measurement at gage height 9.15 ft; minimum, 0.4 cfs Nov. 6, 1949.

Remarks--Records good. Medium and low flows partly regulated by Lake Mildred (capacity, 1,500 acre-ft). Several diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.05	0.8	2.2	55
1.1	1.4	2.7	110
1.2	3.8	3.2	206
1.3	6.3	4.0	450
1.5	13	5.0	960
1.8	27		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	1.3	3.9	2.0	212	27	63	4.5	8.0	6.0	4.0	3.6
2	1.4	1.3	2.27	2.0	280	27	55	7.1	8.0	5.5	3.8	3.6
3	1.3	1.4	8.1	1.9	197	27	50	1.4	7.4	5.5	3.8	4.3
4	1.2	1.4	4.2	1.9	86	27	47	1.3	6.3	5.2	3.6	4.0
5	1.2	1.4	2.9	1.9	58	28	39	1.2	5.2	5.2	3.8	4.0
6	*1.4	1.4	2.4	1.9	46	28	36	1.3	4.8	5.0	4.0	3.8
7	1.3	1.4	2.3	1.9	40	27	34	2.5	4.5	5.0	4.0	3.8
8	1.2	1.6	2.3	1.9	34	29	32	1.8	4.5	5.0	4.0	4.3
9	1.0	1.9	2.2	1.8	661	82	28	1.4	4.3	4.5	4.0	4.0
10	1.0	1.9	2.3	1.8	290	63	*23	1.8	4.0	4.3	3.8	4.0
11	1.0	3.3	2.2	1.8	444	52	6.5	2.1	4.0	4.3	4.0	4.0
12	1.2	5.0	2.2	1.8	211	48	7.7	1.9	4.0	4.5	4.0	3.8
13	1.3	5.5	2.2	1.8	107	44	7.1	1.5	3.8	4.3	4.3	3.8
14	1.2	4.8	2.2	1.8	79	46	4.5	1.2	3.3	4.5	4.3	3.8
15	.9	3.8	2.2	1.8	*134	606	4.5	1.1	2.8	4.3	4.3	3.8
16	.8	3.3	2.5	1.8	122	184	4.5	9.7	2.6	4.5	4.3	3.8
17	.9	*4.8	120	1.8	76	524	4.5	9.0	5.0	*4.5	4.3	3.8
18	1.0	1.1	8.3	1.8	62	164	4.5	8.3	4.8	4.3	4.3	4.0
19	.9	1.1	*4.7	1.8	53	112	4.3	7.7	4.8	3.8	4.3	3.3
20	1.0	1.1	3.4	1.7	46	187	5.0	9.7	4.5	3.8	4.5	2.8
21	1.0	1.1	2.8	1.7	41	104	9.9	9.7	4.3	3.8	4.5	2.8
22	1.0	1.1	2.6	1.7	37	83	5.3	8.0	4.0	4.0	4.5	2.8
23	1.0	1.1	2.5	1.7	32	278	178	7.1	4.0	4.0	4.5	2.8
24	1.0	1.1	2.4	1.6	31	228	85	6.8	3.8	4.0	*4.5	2.1
25	1.2	4.2	2.4	1.6	29	236	4.3	7.1	3.8	4.3	4.5	1.9
26	1.3	209	2.4	1.7	29	201	5.5	6.8	4.0	4.3	4.3	1.6
27	1.3	78	2.3	1.7	28	204	4.3	6.3	5.2	4.0	4.5	1.3
28	1.3	36	2.3	1.6	28	154	4.0	6.5	*5.5	4.3	4.5	1.2
29	1.3	26	2.2	2.8	-	106	3.8	6.0	5.7	4.0	4.0	1.0
30	1.2	26	2.0	5.3	-----	85	3.8	6.0	5.5	4.0	5.0	1.0
31	1.3	-----	2.0	5.42	-----	72	-----	*7.1	-----	4.3	4.8	-----
Total	36.7	539.5	121.1	112.5	149.3	408.3	850.4	338.4	142.4	139.0	131.0	94.8
Mean	1.18	18.0	39.1	36.3	125	132	28.3	10.9	4.75	4.48	4.23	3.16
Max.	2.6	209	227	542	661	606	178	25	8.0	6.0	5.0	4.3
Min.	0.8	1.3	2.0	1.6	28	27	3.8	4.5	2.6	3.8	3.6	1.0
Ac-ft	73	1,070	2,400	2,230	6,930	8,100	1,690	671	282	276	260	188

Calendar year 1960: Max 4,730 Min 0.8 Mean 69.9 Acre-feet 50,720
 Water year 1960-61: Max 661 Min 0.8 Mean 33.4 Acre-feet 24,170

Peak discharge (base, 1,900 cfs)--No peak above base.

* Discharge measurement made on this day.

11-4210. Yuba River near Marysville, Calif.

Location.--Lat 39°10'35", long 121°31'25", on left bank in New Helvetia land grant, 4.2 miles northeast of Marysville, Yuba County, and 5 miles downstream from Dry Creek.

Drainage area.--1,335 sq mi.

Records available.--October 1940 to September 1961 (1940-43, 1945, low-water periods only). Published as "at Marysville" October 1940 to September 1957. Records published for two sites August 1954 to September 1955. Yearly discharge for the 1945 water year published in WSP 1315-A.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers. Prior to Oct. 1, 1956, at Simpson Lane Bridge in Marysville 4.2 miles downstream at same datum. Gages operated simultaneously at Simpson Lane Bridge and at present site August 1954 to September 1955. Oct. 1, 1956, to Sept. 30, 1957, at site 4.2 miles downstream at same datum.

Average discharge.--18 years (1943-1961), 2,516 cfs (1,822,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,740 cfs Feb. 11 (gage height, 65.27 ft); minimum, 15 cfs Oct. 21.

1943-61: Maximum daily discharge, 136,000 cfs Dec. 23, 1955; maximum gage height, 82.5 ft probably Dec. 23, 1955 (at former site), from floodmarks.

1940-61: Minimum discharge recorded, 10 cfs July 2, 1959.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by several reservoirs above station. Many diversions above station for power. Diversions for irrigation of about 13,000 acres between stations at Englebright Dam and near Marysville.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24

Mar. 25 to Sept. 30

60.3	12	62.1	500	60.2	17	61.9	520
60.5	23	62.5	980	60.4	30	62.4	1,020
60.9	56	63.0	1,680	60.6	51	63.0	1,860
61.3	110	64.0	3,100	60.9	105	64.0	3,580
61.7	240	65.0	5,060	61.4	260	65.0	5,460

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	32	696	500	*1460	1050	2550	1950	1420	82	37	36
2	159	26	1090	500	1320	1010	2690	2000	1560	90	39	32
3	156	28	928	500	1300	1010	3170	1850	1640	84	38	34
4	172	29	772	492	1020	1010	3630	1770	1560	84	35	34
5	172	52	684	484	915	994	3620	1700	1450	77	37	33
6	162	55	600	460	1020	*1090	3110	1750	1420	80	38	32
7	153	57	580	530	1390	1110	2720	1850	1270	71	40	31
8	150	79	570	636	1330	1050	2520	1800	1210	68	40	34
9	144	76	560	636	2280	1230	2300	1750	1140	63	43	34
10	144	78	570	*672	4870	1270	2180	*1780	1020	60	43	34
11	162	94	570	672	4380	1200	*2070	2400	960	63	43	34
12	52	216	570	672	4120	1260	2100	2350	900	*58	43	34
13	36	340	*550	672	2770	1270	2100	2180	790	66	43	*30
14	32	476	550	672	2270	1260	1900	2120	710	56	45	29
15	29	314	550	672	2130	2820	1750	2080	645	51	*43	30
16	26	*250	570	672	2350	2660	1700	2050	584	51	46	41
17	25	212	811	660	2030	3080	1800	2000	528	49	46	82
18	24	291	746	684	1860	2410	1900	2020	464	45	37	222
19	22	612	624	684	1680	2040	1750	2150	420	46	38	120
20	*22	580	600	684	1570	2280	1600	2260	*375	49	47	90
21	20	560	560	684	1480	2460	1550	2280	350	39	47	71
22	21	510	560	672	1430	2270	1800	2180	328	45	47	56
23	21	696	550	672	1370	2760	1900	2150	304	47	43	46
24	19	720	540	672	1300	2950	1700	2040	222	50	43	46
25	19	746	550	684	1230	4330	1600	1910	208	39	38	47
26	18	1750	540	708	1190	3510	1550	1830	181	39	36	31
27	18	1090	530	696	1150	3580	1600	1780	145	37	43	26
28	17	811	520	684	1090	3620	1650	1560	122	45	43	23
29	17	733	510	746	-	3040	1750	1450	94	45	41	25
30	24	696	500	889	-	2690	1900	1360	88	45	41	19
31	70	-	500	1630	-	2570	-	1380	-	44	38	-
Total	2262	12209	19051	20891	52305	64884	64160	59730	22108	1768	1281	1436
Mean	73.0	407	615	674	1,868	2,093	2,139	1,927	737	57.0	41.3	47.9
Max.	172	1,750	1,090	1,630	4,870	4,330	3,630	2,400	1,640	90	47	222
Min.	17	26	500	460	915	994	1,550	1,360	88	37	35	19
Ac-ft	4,490	24,220	47,790	41,440	103,700	128,700	127,300	118,500	43,850	1,510	2,540	2,850
Calendar year 1960 :				Max	56,600	Min	17	Mean	1,698	Acres-feet	1,232,000	
Water year 1960-61 :				Max	4,870	Min	17	Mean	882	Acres-feet	638,900	

* Discharge measurement made on this day.

Note.--No gage-height record Apr. 12 to May 3, May 5-9.

SACRAMENTO RIVER BASIN

11-4230. Bear River near Auburn, Calif.

Location.--Lat 39°00'45", long 121°06'10", in NE¹/₄ sec. 5, T.13 N., R.8 E., on center pier of bridge on State Highway 49, 2.6 miles upstream from Wolf Creek, and 8 miles north of Auburn. Prior to June 28, 1961, at site 300 ft upstream.

Drainage area.--140 sq mi.

Records available.--December 1940 to September 1961 in reports of Geological Survey. In reports of California Department of Water Resources 1922, 1925-28, 1929-33 (gage heights for high-water periods only).

Gage.--Staff gage read twice daily. Altitude of gage is 1,250 ft (from topographic map). Prior to June 28, 1961, water-stage recorder at site 300 ft upstream at different datums.

Average discharge.--20 years, 277 cfs (200,500 acre-ft per year).

Extremes.--Maximum discharge during year, 908 cfs Mar. 25 (gage height, 6.33 ft, site and datum then in use); minimum, 1.5 cfs

Oct. 30, 31, Nov. 1, 2, 3.

1940-61: Maximum discharge, 19,700 cfs Dec. 22, 1955 (gage height, 16.56 ft, site and datum then in use), from rating curve extended above 4,600 cfs on basis of computed flow over Van Giesen Dam, 3 miles upstream from station; minimum, 0.1 cfs Nov. 9, 10, 1953.

Remarks.--Records good prior to June 28, fair thereafter. Natural flow of stream affected by inflow from Yuba River and American River basins. Flow regulated by Lake Combie (capacity, 7,840 acre-ft) and other reservoirs. Several diversions upstream for power development and irrigation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 27

June 28 to Sept. 30

3.4	1.3	4.0	51	0.8	4.1
3.5	4.8	4.2	83	.9	7.4
3.6	11	4.4	123	1.0	12
3.7	18	5.0	291	1.1	19
3.8	27	6.1	770		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	1.5	108	91	13	4.8	275	9.6	12	a 10	9.3	10
2	3.4	1.5	104	87	15	5.4	64	9.0	86	a 10	9.8	a 10
3	3.4	1.8	112	64	16	5.4	39	8.4	100	10	9.3	a 9.8
4	3.0	1.8	112	39	15	5.4	41	6.6	83	a 10	10	a 9.8
5	3.0	2.0	136	28	14	6.0	26	6.0	102	10	a 11	9.8
6	3.0	2.3	174	23	22	4.8	111	6.6	32	10	a 12	9.8
7	2.6	3.0	224	17	41	3.4	141	6.6	10	10	12	8.8
8	2.6	2.6	221	17	48	3.4	108	7.2	9.0	a 10	12	8.8
9	3.0	2.6	218	14	74	4.8	96	6.0	9.0	a 10	12	a 11
10	3.0	2.6	210	3.4	157	3.8	91	4.8	7.8	10	12	a 16
11	3.0	3.4	207	3.0	215	3.8	81	4.8	7.2	10	9.8	12
12	3.4	4.8	198	2.6	207	4.3	83	4.8	7.2	11	9.8	7.9
13	3.4	5.4	135	2.6	261	4.3	128	7.2	7.2	10	a 10	* 8.4
14	3.0	4.8	94	2.6	302	3.8	112	12	7.8	11	10	8.4
15	2.6	2.0	91	3.4	242	24	87	9.6	8.4	a 11	* 10	8.4
16	2.6	2.6	46	3.8	72	7.8	67	11	6.6	a 12	a 10	a 7.9
17	2.6	2.6	10	3.8	7.2	18	* 43	12	7.2	12	10	a 7.0
18	2.0	3.4	13	4.3	7.2	7.8	17	17	6.6	12	10	6.6
19	1.8	3.8	15	4.3	6.6	6.0	9.6	26	7.2	* 12	a 10	6.6
20	1.8	3.8	19	4.3	6.6	6.6	12	36	7.8	12	a 11	6.2
21	1.8	3.4	22	3.0	6.6	5.4	14	39	8.4	12	11	6.6
22	1.8	3.4	23	3.0	6.0	5.4	17	* 73	9.0	a 12	11	6.6
23	2.3	3.4	31	3.0	* 5.4	9.6	14	83	12	13	11	a 7.0
24	2.0	3.4	42	2.6	5.4	7.0	12	78	12	13	10	a 7.4
25	2.0	2.2	42	* 2.6	4.8	770	10	63	11	13	11	9.3
26	* 2.0	117	42	3.8	4.8	570	9.6	68	10	12	11	7.0
27	1.8	112	54	3.8	4.8	* 584	10	69	10	12	a 11	7.4
28	1.8	* 112	64	3.4	4.8	598	12	29	* 10	11	11	7.4
29	1.8	108	* 64	3.8	-	486	8.4	17	10	a 11	10	7.4
30	1.8	106	69	4.8	-	418	8.4	11	10	a 9.8	11	a 7.9
31	1.5	-	94	2.5	-	371	-	9.6	-	9.3	15	-
Total	77.2	648.9	2994	476.9	1784.2	4021.0	1747.0	750.8	626.4	341.1	333.0	257.2
Mean	2.49	21.6	96.6	15.4	63.7	130	58.2	24.2	20.9	11.0	10.7	8.57
Max.	3.4	117	224	91	302	770	275	83	102	13	15	16
Min.	1.5	1.5	10	2.6	4.8	3.4	8.4	4.8	6.6	9.3	9.3	6.2
Ac-ft	153	1,290	5,940	946	3,540	7,980	3,470	1,490	1,240	677	660	510

Calendar year 1960: Max 10,100 Min 0.9 Mean 153 Acra-foot 111,000
 Water year 1960-61: Max 770 Min 1.5 Mean 38.5 Acra-foot 27,900

Peak discharge (base, 3,700 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

Note.--Discharge computed from twice-daily staff gage readings June 28 to Sept. 30.

11-4240. Bear River near Wheatland, Calif.

Location.--Lat 39°00'01", long 121°24'20", in sec.3, T.13 N., R.5 E., in midstream on downstream side of bridge on U. S. Highway 99E, 1 mile southeast of Wheatland and 6.5 miles downstream from Rock Creek.

Drainage area.--295 sq mi.

Records available.--October 1928 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 78.92 ft above mean sea level (levels by California Department of Water Resources).

Prior to July 17, 1929, staff gage at about same site and at datum 2.58 ft higher. July 17, 1929, to Oct. 22, 1943, water-stage recorder at several sites within 300 ft of present site at datum 2.58 ft higher.

Average discharge.--32 years (1929-61), 421 cfs (304,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,900 cfs Jan. 31 (gage height, 4.30 ft); no flow Oct. 16.

1928-61: Maximum discharge, 33,000 cfs Dec. 22, 1955 (gage height, 19.30 ft); maximum gage height, 20.83 ft Nov. 21, 1950; no flow at times.

Remarks.--Records good. Medium and low flows affected by Camp Far West Reservoir (capacity, 5,000 acre-ft), Combie Reservoir (capacity, 7,840 acre-ft), diversions for irrigation, and return flow from irrigated areas between stations near Auburn and near Wheatland. See Remarks for station near Auburn.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0	0.1	0.8	20
.1	.4	.9	29
.2	1.1	1.1	58
.3	2.0	1.5	160
.4	3.6	2.0	350
.5	5.7	2.5	620
.6	8.6	3.0	935
.7	13	3.5	1,280

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.6	1.8	172	136	564	*42	385	*14	9.7	7.0	*4.2	*6.4
2	4.0	2.4	332	130	387	38	238	15	10	7.0	4.4	7.0
3	3.8	1.3	245	128	381	44	*130	17	56	4.4	4.4	5.7
4	3.2	2.1	194	92	204	60	120	15	73	4.4	4.0	5.2
5	3.0	2.1	175	76	142	56	108	25	62	4.4	4.2	5.4
6	3.0	1.9	204	62	118	86	90	26	76	4.8	6.8	5.7
7	3.2	3.6	233	55	125	78	181	25	30	4.4	4.4	5.2
8	4.0	3.6	249	47	125	57	151	18	11	4.4	4.4	5.2
9	3.8	3.6	241	50	424	14	148	20	8.0	4.0	4.4	5.7
10	3.6	3.8	241	50	684	7.4	142	37	6.2	3.6	4.4	7.0
11	3.4	5.1	245	38	872	5.7	136	23	8.2	3.6	4.2	6.8
12	3.6	4.2	233	24	688	4.4	120	20	6.0	4.2	2.4	7.4
13	1.1	95	214	*32	435	*3.8	154	45	6.8	4.2	6.2	7.6
14	.5	172	148	29	440	4.4	125	25	7.4	4.6	4.6	7.6
15	.3	98	*128	28	430	11	130	14	7.6	4.8	3.6	6.2
16	1.0	69	130	28	*360	5.2	104	8.0	5.4	7.4	4.0	6.4
17	1.6	52	102	29	166	34	76	8.2	4.4	*4.6	6.0	6.8
18	3.1	*53	110	28	130	249	53	12	5.0	3.8	5.7	8.0
19	1.4	122	80	30	115	181	30	10	7.4	4.8	5.7	8.2
20	1.0	65	76	27	100	194	15	15	7.0	5.0	6.0	5.7
21	.6	50	76	26	92	166	14	21	4.4	6.8	5.7	5.0
22	.4	45	80	26	85	125	41	29	5.4	6.4	3.6	5.0
23	2.6	38	80	26	73	206	136	56	5.2	7.4	4.4	5.0
24	1.7	34	95	26	71	233	130	62	3.6	4.4	4.0	5.0
25	.6	37	98	27	69	983	85	55	7.0	4.4	5.7	4.6
26	.6	738	98	37	65	824	60	33	4.8	4.6	6.0	4.6
27	.4	310	95	60	56	786	29	23	4.6	4.4	6.4	5.0
28	.5	197	110	52	45	812	14	28	4.4	4.4	6.4	5.0
29	.8	172	112	50	-	644	17	15	6.8	3.6	6.2	5.0
30	.8	160	113	133	-	538	20	9.0	7.4	6.0	6.8	5.2
31	2.4	-	115	800	-	466	-	9.3	-	4.2	6.0	-
Total	63.6	2580.3	4841	2382	7446	6957.9	3182	732.5	460.7	152.0	155.2	178.6
Mean	2.05	86.0	156	76.8	266	224	106	23.6	15.4	4.90	5.01	5.95
Max.	4.0	738	332	800	872	983	385	62	76	7.4	6.8	8.2
Min.	0.3	1.3	76	24	45	3.6	14	8.0	3.6	3.6	2.4	4.6
Ac-ft	126	5,120	9,600	4,720	14,770	13,800	6,310	1,450	914	301	308	354

Calendar year 1960 : Max 18,800 Min 0.3 Mean 244 Acra-feet 177,100

Water year 1960-61 : Max 983 Min 0.3 Mean 79.8 Acra-feet 57,770

Peak discharge (base, 3,300 cfs)--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4245. Dry Creek near Wheatland, Calif.

Location.--Lat 39°01'35", long 121°26'10", in Johnson Rancho land grant, on left bank 2,300 ft upstream from bridge on U. S. Highway 99E, 1.3 miles northwest of Wheatland, and 5 miles upstream from mouth.

Drainage area.--99.5 sq mi.

Records available.--October 1946 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 62.83 ft above mean sea level (levels by California Department of Water Resources).

Average discharge.--15 years, 55.6 cfs (40,250 acre-ft per year); median of yearly mean discharges, 39 cfs (28,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,160 cfs Jan. 31 (gage height, 6.58 ft); no flow for many days.

1946-61: Maximum discharge, 8,790 cfs Dec. 23, 1955 (gage height, 13.45 ft); no flow at times in each year.

Remarks.--Records good except those for period of no gage-height record, which are fair. Portion of flow from Dry Creek drainage area may overflow or percolate into Best Slough above station. Flow in October and September mostly return flow from irrigated areas.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.95	0	3.7	60
3.0	.4	4.0	120
3.1	3.6	4.5	250
3.3	15	5.0	420
3.5	34	6.0	860

Discharge, in cubic feet per second, water year October 1960 to September 1961													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1		0	6.2	5.1	261	12	40	0.9	0	0.3	0.6	3.1	
2		0	23	4.6	270	13	34	4.4	0		.7	2.2	
3		0	20	4.6	172	13	32	5.7	2.3		.9	1.2	
4		0	10	4.6	67	13	27	2.9	.4		.9	.9	
5		0	6.8	4.6	44	11	22	3.0	.1		1.2	.9	
6	(*)	0	5.1	4.6	39	12	21	4.6	.2	.5	1.2	.9	
7		0	5.7	5.1	34	13	20	5.1	1.3		1.2	.3	
8		0	6.2	5.1	29	11	17	6.2	.4		1.5	.1	
9		0	6.2	5.1	263	21	15	2.4	.2		1.5	0	
10		0	6.2	4.6	282	24	*14	0	.1		1.2	0	
11		0	5.7	4.6	295	17	13	*0	0	.7	.9	0	
12		0	6.8	4.6	197	13	13	0	0		1.2	0	
13		25	6.8	4.1	86	11	19	0	0		1.2	0	
14		22	5.7	4.1	64	11	17	0	0		1.5	0	
15		13	*5.7	4.6	103	280	14	0	0		1.5	0	
16		7.3	5.7	4.6	*116	102	15	0	0	.9	1.9	0	
17		4.1	11	4.6	62	220	15	0	0	*1.1	1.9	0	
18		*5.1	23	*4.6	49	90	12	0	0	.9	1.9	0	
19		14	15	4.6	40	57	9.6	0	0	.9	1.9	0	
20		10	12	5.1	36	64	7.3	0	0	.7	1.5	0	
21		7.9	12	5.1	34	53	9.0	0	0	.7	.7	0	
22		5.7	11	5.1	29	41	16	0	0	.7	.4	0	
23		4.1	9.0	5.1	22	82	23	10	0	.7	.4	0	
24		2.2	7.9	5.1	19	168	10	4.1	0	.7	*3	0	
25		3.1	7.3	5.1	18	334	6.2	.9	0	.9	.9	0	
26		172	6.8	7.9	17	149	3.6	.2	0	.9	1.5	0	
27		62	6.8	11	15	129	2.2	.1	0	.6	1.2	0	
28		19	6.2	10	13	96	1.5	0	*.1	.4	4.1	0	
29		10	5.7	23	-	71	.9	0	.3	.3	3.6	0	
30		6.2	5.7	50	-	56	.7	0	.3	.4	3.1	0	
31		-	5.1	*503	-	46	-	0	-	.6	3.6	-	
Total	0	392.7	276.3	723.9	267.6	2233	450.0	50.5	5.7	18.9	46.1	9.6	
Mean	0	13.1	8.91	23.4	95.6	72.0	15.0	1.63	0.19	0.61	1.49	0.32	
Max.	0	172	23	503	295	334	40	10	2.3	1.1	4.1	3.1	
Min.	0	0	5.1	4.1	13	11	0.7	0	0	0.3	0.3	0	
Ac-ft	0	779	548	1,440	5,310	4,430	893	100	11	37	91	19	
Calendar year 1960:				Max	2,730	Min	0	Mean	28.6	Acra-feet			20,720
Water year 1960-61:				Max	503	Min	0	Mean	18.9	Acra-feet			13,660

Peak discharge (base, 2,000 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record June 30 to July 16.

SACRAMENTO RIVER BASIN

809

11-4250. Feather River at Nicolaus, Calif.

Location.--Lat 38°54'00", long 121°35'00", on left bank at Nicolaus, Sutter County, at highway bridge 2.9 miles downstream from Bear River.

Drainage area.--5,920 sq mi, approximately.

Records available.--June 1921 to December 1942 (low-water periods only), April 1943 to September 1961.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers. Prior to November 1931, on middle fender pier of bridge 0.3 mile upstream at same datum.

Average discharge.--18 years (1943-61), 7,752 cfs (5,612,000 acre-ft per year).

Extremes.--Maximum discharge during year, 19,500 cfs Feb. 12 (gage height, 33.73 ft); minimum recorded, 275 cfs Sept. 7 (gage height, 20.31 ft), may have been lower during period of no gage-height record.

1943-61: Maximum discharge, 357,000 cfs Dec. 23, 1955; maximum gage height, 51.60 ft Dec. 23, 1955.

1921-61: Minimum discharge, no flow Aug. 2-18, 1924; July 11-22, 24, 26, Aug. 1, 1931.

Remarks.--Records good except those for periods of indefinite stage-discharge relation or no gage-height record, which are poor. Flow partly regulated by reservoirs and powerplants. Diversions for irrigation of about 87,000 acres between stations near Oroville and at Nicolaus.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.210	1.110	3.880	3.100	15.400	4.230	9.080	4.340	3.410	7.50	5.08	6.54
2	1.220	1.060	5.670	3.020	4.100	4.090	8.920	4.670	3.920	7.22	4.96	6.22
3	1.240	1.070	9.400	2.960	13.700	3.840	9.240	4.720	4.220	6.87	4.90	5.38
4	1.230	1.060	8.400	2.890	12.000	3.740	10.500	4.220	4.060	6.67	4.84	4.42
5	1.120	1.060	6.820	2.860	10.000	3.810	11.800	4.060	3.660	6.67	4.84	3.80
6	1.040	9.43	5.140	2.800	7.200	3.780	11.100	3.700	3.190	6.80	5.02	3.26
7	1.050	9.27	4.290	2.780	6.000	4.230	10.100	4.010	2.960	7.15	5.63	2.80
8	1.090	9.43	3.910	2.770	5.200	4.010	9.420	4.010	2.650	7.29	6.08	a 2.50
9	1.090	1.090	3.760	2.760	5.200	3.990	8.430	3.550	2.340	7.22	* 6.28	a 3.00
10	1.060	1.190	3.740	* 2.740	15.200	4.650	8.000	* 3.640	2.060	* 7.22	6.60	a 3.50
11	1.060	1.190	3.790	2.780	17.800	4.640	* 7.560	5.420	1.810	7.08	6.08	a 4.00
12	1.030	1.340	3.800	2.820	19.000	4.440	6.960	5.910	* 1.620	6.54	6.34	a 4.50
13	9.11	1.780	* 3.780	2.820	16.000	4.360	7.250	5.620	1.630	6.02	6.60	* 4.78
14	9.03	2.670	3.670	2.790	12.000	4.300	7.060	5.380	1.670	5.63	7.01	5.26
15	8.65	3.310	3.640	2.760	10.000	5.660	6.110	5.170	1.570	5.44	7.08	4.66
16	7.78	* 3.180	3.670	2.710	9.500	10.800	5.760	4.890	1.470	5.32	7.08	5.20
17	7.57	3.080	4.020	2.670	9.000	10.700	5.580	5.130	1.340	5.38	7.36	6.22
18	7.36	3.040	5.630	2.660	7.400	11.800	5.970	5.130	1.230	5.70	7.08	7.57
19	7.22	3.570	5.880	2.640	6.400	10.500	5.930	5.280	9.51	5.63	6.94	8.65
20	* 6.94	3.940	5.280	2.650	6.200	9.850	5.100	5.720	7.99	5.70	6.94	8.06
21	6.87	3.440	4.810	2.640	5.800	10.600	4.290	5.860	7.57	6.08	7.64	7.85
22	6.80	3.210	4.480	2.590	5.600	10.100	4.270	5.410	7.50	6.60	7.78	8.28
23	6.67	3.100	4.360	2.540	5.400	10.000	5.170	5.130	6.60	6.54	7.85	8.42
24	6.67	3.000	4.290	2.510	5.200	12.400	5.000	4.850	6.22	6.22	7.71	8.42
25	6.60	2.960	4.220	2.480	5.000	14.800	4.270	4.410	5.63	6.22	7.50	8.35
26	7.78	4.860	4.160	2.530	4.800	14.400	3.940	4.190	5.50	5.89	7.50	8.06
27	8.65	7.310	4.060	2.610	4.620	13.200	3.810	4.110	5.26	5.63	7.78	6.60
28	9.43	5.410	3.870	2.620	* 4.530	13.000	3.810	3.440	5.70	5.63	8.58	5.20
29	9.35	4.510	3.380	2.670	-	11.700	3.840	3.070	7.01	5.56	8.72	4.96
30	9.59	3.980	3.220	2.910	-	10.200	4.120	3.010	7.50	5.14	7.50	4.60
31	1.060	-	3.150	4.900	-	9.360	-	3.040	-	5.02	6.67	-
Total	28.707	79.533	142.170	86.980	258.250	247.180	202.590	41.090	53.009	19.358	20.797	17.106
Mean	926	2,644	4,586	2,806	9,223	7,974	6,746	4,551	1,767	624	671	570
Max.	1,240	7,310	9,400	4,900	19,000	14,800	11,800	5,910	4,220	750	872	865
Min.	660	927	3,150	2,480	4,530	3,740	3,810	3,010	526	502	484	250
Ac-ft	56,940	157,400	282,000	172,500	512,200	490,300	401,400	279,800	105,100	38,400	41,250	33,930
Calendar year 1960 :				Max 120,000	Min 550		Mean 5,371	Acra-feet 3,901,000				
Water year 1960-61 :				Max 19,000	Min 250		Mean 3,552	Acra-feet 2,571,000				

* Discharge measurement made on this day.

a No gage-height record.

Note.--Stage-discharge relation indefinite Feb. 4-26.

SACRAMENTO RIVER BASIN

11-4255. Sacramento River at Verona, Calif.

Location.--Lat 38°46'50", long 121°36'10", in SE $\frac{1}{4}$ sec.23, T.11 N., R.3 E., on left bank 0.8 mile southeast of Verona, 1 mile downstream from Feather River, 6.2 miles east of Knights Landing, and at mile 19.6 upstream from Sacramento.

Records available.--May 1926 to September 1929 (low-water periods only), October 1929 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 0.06 ft below datum of Corps of Engineers. Auxiliary water-stage recorder 16 miles downstream from base gage since Oct. 1, 1944, at datum of Corps of Engineers. Prior to Oct. 1, 1944, auxiliary water-stage recorder at site 19.2 miles downstream at datum 0.12 ft above mean sea level (datum of 1929).

Average discharge.--32 years (1929-61), 17,710 cfs (12,820,000 acre-ft per year).

Extremes.--Maximum discharge during year, 48,300 cfs Feb. 13 (gage height, 30.05 ft); minimum, 6,280 cfs Oct. 19.

1926-61: Maximum discharge, 79,200 cfs Mar. 1, 1940 (gage height, 41.20 ft); minimum daily, 304 cfs July 23, 24, 1931; maximum reverse flow, 16,800 cfs Dec. 4, 1950, backwater from American River.

1934-61: Maximum combined discharge of Sacramento River at Verona and Fremont weir, about 315,000 cfs Mar. 1, 1940.

Remarks.--Records excellent. Flow regulated by Shasta Lake beginning Dec. 30, 1943, and several other reservoirs and power plants above station, and bypassing for flood control. Many diversions above station for irrigation. When discharge exceeds about 55,000 cfs, flow begins over Fremont weir (just upstream) into Yolo bypass (see p. 862). Elevation of crest of Fremont weir is 33.5 ft (datum of Corps of Engineers).

Cooperation.--Three discharge measurements furnished by California Department of Water Resources.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.500	7.310	13.500	9.710	33.800	24.800	26.400	9.240	11.600	7.370	8.020	8.860
2	7.370	7.250	16.700	9.460	40.000	24.300	25.500	9.940	12.600	7.360	8.160	8.630
3	7.430	7.300	30.700	9.380	*42.200	23.400	24.800	10.900	13.600	7.310	8.210	8.440
4	7.520	7.370	33.100	9.580	44.500	22.200	24.900	11.000	14.300	7.200	8.180	8.070
5	7.480	7.380	*31.000	9.870	45.900	21.700	25.800	10.900	14.100	7.260	8.180	7.750
6	7.370	7.420	26.700	9.910	43.800	21.300	25.800	10.300	13.200	7.070	8.370	7.840
7	7.400	7.440	22.900	9.800	38.800	21.500	24.800	10.200	12.400	7.100	8.570	8.330
8	7.540	7.540	19.600	9.780	33.700	21.700	23.400	10.900	11.200	7.140	8.680	8.680
9	7.810	7.600	16.600	9.820	29.900	21.400	21.700	10.800	10.600	7.220	*8.700	9.150
10	7.550	7.840	14.800	10.000	33.500	22.400	20.200	10.700	10.200	*7.430	8.860	9.400
11	7.500	7.890	13.400	10.500	41.900	23.800	18.800	11.900	9.760	7.560	8.880	*9.440
12	7.480	8.050	12.300	10.600	45.800	23.600	17.200	*13.600	*9.110	7.660	8.750	9.510
13	7.320	8.760	11.600	*10.500	48.100	22.900	*16.500	13.800	8.400	7.580	8.920	9.740
14	7.100	10.000	10.900	10.400	48.000	22.500	16.500	14.400	8.230	7.400	9.150	9.730
15	6.940	12.700	*10.500	10.200	47.000	23.000	15.000	13.700	7.940	7.400	9.150	9.290
16	6.740	14.000	10.300	10.000	46.000	28.700	13.900	13.100	7.550	7.400	9.130	9.420
17	6.640	12.300	10.400	9.940	45.100	32.900	13.000	13.400	7.200	7.440	9.110	9.550
18	6.600	*10.900	13.500	9.910	43.700	35.400	12.500	13.400	7.060	7.420	8.950	9.650
19	6.400	10.600	20.000	9.820	41.300	35.800	*11.800	13.500	6.800	7.370	8.540	9.510
20	6.560	11.400	22.600	9.830	38.500	35.200	10.900	14.000	6.590	7.430	8.450	9.440
21	6.520	11.200	19.500	9.640	35.700	35.100	9.920	14.700	6.440	7.440	8.610	9.280
22	6.590	10.500	17.800	9.490	33.500	34.800	9.550	14.600	6.350	7.700	9.010	8.830
23	6.640	9.920	15.800	9.290	31.600	33.900	10.500	14.100	*6.460	7.780	8.990	8.650
24	6.650	9.470	14.600	9.280	*29.900	34.300	11.100	13.500	6.580	7.910	9.040	8.450
25	6.700	9.290	13.500	9.380	28.400	35.500	11.000	13.100	6.890	7.840	8.900	8.300
26	6.900	10.300	12.700	9.650	27.100	36.800	10.600	12.800	7.220	7.880	8.920	8.250
27	*7.020	19.000	12.100	10.400	26.100	36.500	9.580	12.500	7.320	7.970	8.950	8.160
28	7.140	23.200	11.600	11.800	25.400	35.500	8.860	11.800	7.230	7.940	9.060	7.780
29	7.180	19.400	10.800	12.900	---	34.300	8.490	11.200	7.400	7.890	9.260	7.730
30	7.190	15.600	10.300	13.100	---	31.300	8.610	10.700	*7.420	7.960	8.970	7.660
31	7.300	---	10.000	19.900	---	28.400	---	10.800	---	7.970	8.750	---
Total	220,080	318,930	509,800	323,840	1,069,200	884,900	487,610	379,480	271,750	233,400	271,420	263,520
Mean	7,099	10,630	16,400	10,450	38,190	28,550	16,250	12,240	9,060	7,529	8,755	8,784
Max.	7,810	23,200	33,100	19,900	48,100	36,800	26,400	14,700	14,300	7,970	9,260	9,740
Min.	6,400	7,250	10,000	9,280	25,400	21,300	8,490	9,240	6,350	7,070	8,020	7,660
Ac-ft	436,500	652,600	1,011,000	642,300	2,121,000	1,755,000	967,200	752,700	539,000	462,900	538,400	522,700
Calendar year 1960 :				Max 63,600	Min 6,400	Mean 14,050	Acra-feet 10,200,000					
Water year 1960-61 :				Max 48,100	Min 6,350	Mean 14,340	Acra-feet 10,380,000					

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

811

11-4260. Sacramento weir near Sacramento, Calif.

Location---Lat 38°36'25", long 121°33'15", on left bank of Sacramento River opposite center of Sacramento weir, 3.2 miles upstream from American River, 4 miles northwest of Sacramento, and at mile 4.2 upstream from Sacramento.

Records available---October 1939 to September 1961. Monthly discharge only for water years 1940-51, published in WSP 1735. Gage-height records collected at same site February 1926 to September 1934 and major flood flows only October 1934 to September 1939 are contained in reports of California Department of Water Resources.

Gage---Water-stage recorder and concrete weir crest. Gage is set to datum of Corps of Engineers. Prior to October 1942, water-stage recorder or staff gage at downstream end of weir at same datum.

Average discharge---22 years, 213 cfs (154,200 acre-ft per year).

Extremes---No flow during the year.

1926-61: Maximum discharge, 118,000 cfs Mar. 26, 1928; maximum gage height (revised), 33.01 ft Dec. 23, 1955; no flow during all or most of each year.

Remarks---No flow since Feb. 13, 1960. Crest of weir is at elevation 25.0 ft and top of moveable gates at 31.0 ft. Weir consists of 48 gates each 38.1 ft long. Flow over weir enters Yolo bypass by way of Sacramento bypass. Flow regulated by weir gates. Figures for calendar year 1960 are as follows: Maximum daily discharge, 264 cfs; minimum daily, zero, mean, 2.13 cfs; runoff, 1,540 acre-ft.

Cooperation---Records collected and prepared in cooperation with California Department of Water Resources.

SACRAMENTO RIVER BASIN

11-4261.1. Onion Creek tributary No. 3 near Soda Springs, Calif.

Location.--Lat 39°17'04", long 120°21'20", in E 1/4 sec. 1, T.16 N., R.14 E., 0.8 mile upstream from Onion Creek Campground and 3.0 miles southeast of Soda Springs.

Drainage area.--0.65 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder and 120° sharp-edged V-notch weir. Altitude of gage is 6,300 ft (from topographic map).

Extremes.--Maximum discharge during year, 6.50 cfs Apr. 4 (gage height, 1.170 ft); minimum daily, 0.01 cfs for several days in October and September.

1958-61: Maximum discharge, 10.7 cfs Apr. 9, 1960 (gage height, 1.430 ft); minimum daily, 0.01 cfs for many days in each year.

Remarks.--Records excellent except those for periods of ice effect, which are good.

Cooperation.--Records of daily discharge furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.01	0.02	0.19	b 0.08	0.30	0.41	1.65	3.26	2.70	0.33	0.06	0.02
2	.01	.02	.14	b .08	.28	.42	3.19	3.21	2.62	.31	.06	.02
3	.01	.03	.10	b .08	.28	.38	4.31	3.44	2.38	.33	.06	.02
4	.01	.04	.09	.08	.27	.37	4.48	3.31	2.20	.30	.05	.02
5	.01	.04	b .08	.08	.26	.36	3.53	2.95	2.00	.29	.05	.01
6	.04	.06	b .07	.08	.26	.37	3.42	2.83	1.86	.27	.05	.01
7	.04	.05	b .07	.09	.24	.34	2.94	2.93	1.71	.25	.05	.01
8	.03	.06	b .07	.09	.24	.33	2.91	3.22	1.61	.23	.05	.01
9	.03	.06	.07	.09	1.05	.36	2.75	3.60	1.50	.22	.05	.01
10	.03	.06	.07	.09	1.30	.36	2.63	3.82	1.39	.20	.04	.01
11	.03	.07	.07	.11	.97	.36	3.05	3.32	1.31	.19	.04	.01
12	.03	.08	.07	.12	.64	.35	2.71	3.24	1.22	.18	.04	.01
13	.03	.08	.07	.11	.51	.39	2.64	3.68	1.12	.18	.04	.01
14	.03	.07	.07	.11	.47	.50	2.65	3.83	1.03	.16	.04	.01
15	.03	.07	.07	.13	.47	.52	3.09	3.89	.95	.15	.03	.01
16	.03	.08	.08	.13	.41	.46	3.96	3.93	.89	.14	.03	.03
17	.03	.08	.13	.13	.37	.47	4.28	4.03	.84	.14	.03	.05
18	.02	.09	.10	.13	.35	.48	3.62	4.34	.80	.13	.02	.04
19	.02	.07	.09	.14	.34	.48	3.16	4.36	.74	.12	.03	.03
20	.02	.07	.09	.14	.37	.54	2.84	4.12	.68	.11	.03	.02
21	.02	.07	.09	.14	.46	.66	2.62	3.97	.64	.11	.02	.02
22	.02	.07	.10	.14	.44	.80	2.44	3.84	.58	.10	.02	.02
23	.02	.06	.10	.14	.40	.85	2.27	3.61	.56	.09	.02	.02
24	.02	.06	.10	.15	.40	.73	2.11	3.44	.52	.09	.02	.02
25	.02	.06	.10	.16	.40	.70	2.09	3.29	.48	.08	.02	.02
26	.02	.06	.10	.20	.38	.64	2.26	2.98	.46	.08	.02	.02
27	.02	.06	.10	.18	.37	.60	2.61	2.84	.42	.08	.02	.01
28	.02	.06	b .09	.36	.36	.57	3.12	2.65	.39	.07	.05	.01
29	.02	.06	.09	.36	-	.60	3.38	2.48	.37	.07	.04	.01
30	.02	.06	.09	.17	-----	.80	3.52	2.34	.35	.07	.03	.01
31	.02	-----	.09	.25	-----	1.10	-----	2.51	-----	.06	.02	-----
Total	0.71	1.82	2.84	4.34	12.59	16.30	90.23	105.26	54.32	51.3	1.13	0.52
Mean	0.023	0.061	0.092	0.140	0.450	0.526	3.01	3.40	1.14	0.165	0.036	0.017
Max.	0.04	0.09	0.19	0.36	1.30	1.10	4.48	4.36	2.70	0.33	0.06	0.05
Min.	0.01	0.02	0.07	0.08	0.24	0.33	1.65	2.34	0.35	0.06	0.02	0.01
Ac-ft	1.4	3.6	5.6	8.6	25.0	32.3	179	209	68.1	10.2	2.2	1.0

Calendar year 1960 : Max 8.41 Min 0.01 Mean 1.11 Acre-feet 806
 Water year 1960-61 : Max 4.48 Min 0.01 Mean 0.754 Acre-feet 546

b Stage-discharge relation affected by ice.

SACRAMENTO RIVER BASIN

813

11-4261.2. Onion Creek tributary No. 5A near Soda Springs, Calif.

Location.--Lat 39°17'04", long 120°20'44", in SE 1/4 sec. 1, T.16 N., R.14 E., 1.1 miles upstream from Onion Creek Campground and 3.3 miles southeast of Soda Springs.

Drainage area.--0.39 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder and 120" sharp-edged V-notch weir. Altitude of gage is 6,520 ft (from topographic map).

Extremes.--Maximum discharge during year, 12.3 cfs Apr. 3 (gage height, 1.513 ft); no flow for many days.
1958-61: Maximum discharge, 16.9 cfs Feb. 8, 1960 (gage height, 1.72 ft); no flow for many days in each year.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. No regulation or diversion.

Cooperation.--Records of daily discharge furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0.19	0.24	0.42	0.72	2.68	2.39	2.81	0.14	0.02	0.01
2	0	0	.14	.22	.44	.65	5.26	2.40	1.95	.14	.02	.01
3	0	0	.12	.21	.45	.54	6.20	2.33	1.61	.15	.01	0
4	0	0	.12	.21	.41	.50	5.08	2.11	1.46	.14	.01	0
5	0	0	.11	.23	.56	.43	3.71	1.76	1.37	.13	.01	0
6	.01	.01	.11	.27	.52	.45	3.41	1.55	1.26	.12	.01	0
7	0	.02	.10	.27	.48	.44	2.83	1.92	1.14	.12	.01	0
8	0	.14	.10	.24	.44	.42	2.95	2.39	1.05	.11	.01	0
9	0	.08	.11	.24	4.20	.40	2.49	2.36	.90	.10	.01	0
10	0	.05	.12	.33	3.99	.38	2.39	2.34	.92	.09	.01	0
11	0	.04	.11	.44	1.63	.36	2.92	1.70	.77	.08	.01	0
12	0	.04	.13	.39	.98	.34	2.25	1.83	.73	.08	.01	0
13	0	.05	.17	.33	.77	.63	2.35	2.96	.69	.08	.01	0
14	0	.06	.16	.40	.75	.87	2.17	3.08	.61	.07	.01	0
15	0	.06	.15	.41	.69	.64	2.75	2.94	.55	.07	.01	0
16	.01	.14	.14	.39	.59	.50	3.16	2.85	.53	.06	0	.10
17	0	.23	.14	.40	.53	.45	3.10	2.95	.48	.06	0	.08
18	0	.16	.13	.40	.48	.55	2.26	2.94	.40	.05	0	.02
19	0	.12	.14	.42	.59	.51	1.87	2.33	.37	.05	0	.01
20	0	.14	.20	.39	.84	.53	1.59	2.54	.33	.05	0	.01
21	0	.14	.26	.39	1.21	1.09	1.38	2.46	.30	.04	0	.01
22	0	.13	.29	.39	.85	1.06	1.21	2.41	.27	.04	.01	0
23	0	.11	.37	.35	.68	.87	1.15	2.11	.25	.04	0	0
24	0	.10	.37	.39	.66	.70	1.02	2.20	.24	.04	0	0
25	0	.10	.34	.38	.64	.65	1.12	2.03	.22	.03	0	0
26	0	.09	.35	.38	.56	.61	1.49	1.61	.21	.03	0	0
27	0	.09	.30	.33	.53	.54	2.06	1.49	.20	.03	0	0
28	0	.09	.25	.30	.54	.52	2.73	1.26	.19	.03	0	0
29	0	.09	.23	.28	-	.66	2.64	1.19	.17	.03	0	0
30	0	.09	.26	.28	-	1.29	3.09	1.06	.16	.03	.01	0
31	0	-	.26	.42	-	1.82	1.70	1.70	1.70	.02	0	-
Total	0.02	2.37	5.97	10.32	25.43	20.13	79.31	67.19	22.14	2.25	0.19	0.25
Mean	0.0006	0.079	0.193	0.333	0.908	0.649	2.64	2.17	0.738	0.073	0.006	0.008
Max.	0.01	0.23	0.37	0.44	4.20	1.82	6.20	3.08	2.81	0.15	0.02	0.10
Min.	0	0	0.10	0.21	0.41	0.34	1.02	1.06	0.16	0.02	0	0
Ac-ft	0	4.7	11.8	20.5	50.4	39.9	157	133	43.9	4.5	0.4	0.5
Calendar year 1960:			Max	9.51	Min	0	Mean	0.812	Acres-feet	589		
Water year 1960-61:			Max	6.20	Min	0	Mean	0.645	Acres-feet	467		

Note.--No gage-height record Oct. 4-15, Feb. 2-6, Aug. 3-10.

SACRAMENTO RIVER BASIN

815

11-4261.4. Onion Creek tributary No. 1 near Soda Springs, Calif.

Location.--Lat 39°16'30", long 120°21'58", in SE $\frac{1}{4}$ sec. 2, T.16 N., R.14 E., 0.25 mile west of Onion Creek Campground and 3.4 miles southeast of Soda Springs.

Drainage area.--0.19 sq mi.

Records available.--October 1957 to September 1961.

Gage.--Water-stage recorder and 120° sharp-edged V-notch weir. Altitude of gage is 6,200 ft (from topographic map).

Extremes.--Maximum discharge during year, 2.14 cfs May 18 (gage height, 0.748 ft); no flow for many days.

1957-61: Maximum discharge, 10.2 cfs May 24, 1958 (gage height, 1.40 ft, present datum); no flow for many days in 1959-61.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. No regulation or diversion.

Cooperation.--Records of daily discharge furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0.09	0.02	0.10	0.08	0.41	1.05	0.68	0.03	0.01	0
2	0	0	.04	b.02	.08	.09	.79	.99	.74	.02	.01	0
3	0	0	.02	.02	.10	.09	1.18	1.11	.54	.03	.01	0
4	0	.01	.02	.01	.07	.08	1.15	1.09	.43	.02	.01	0
5	0	.01	.02	.02	.06	.08	.88	.90	.36	.02	a.01	0
6	.02	.02	b.02	.01	.06	.08	.85	.79	.31	.02	a.01	0
7	.01	.02	.02	.01	.05	.07	.73	.78	.27	.02	a.01	0
8	.01	.02	.02	.01	.05	.07	.68	1.00	.24	.02	a.01	0
9	.01	.02	.02	.01	.48	.07	.67	1.25	.20	.02	a.01	0
10	.01	.01	.02	.01	.45	.07	.65	1.53	.18	.02	a.01	0
11	.01	.02	.02	.01	.31	.07	.80	1.11	.17	.02	a.01	0
12	.01	.02	.01	.01	.17	.07	.79	.98	.15	.02	.01	0
13	.01	.02	.01	.01	.12	.07	.68	1.08	.13	a.02	.01	0
14	.01	.02	.01	.01	.12	.10	.71	1.23	.11	.02	.01	0
15	.01	.02	.01	.01	.13	.12	.90	1.30	.10	.01	.01	0
16	0	.02	.02	.01	.10	.10	1.23	1.34	.08	.01	.01	.01
17	0	.02	.05	.01	.09	.10	1.34	1.40	.07	.01	.01	.01
18	0	.03	.03	.01	.08	.10	1.08	1.55	.06	.01	.01	.01
19	0	.02	.02	.01	.08	.11	.86	1.46	.06	.01	.01	.01
20	0	.02	.02	.01	.07	.14	.70	1.28	.05	.01	.01	0
21	0	.02	.02	.01	.08	.18	.62	1.16	.04	.01	.01	0
22	0	.02	.02	.01	.10	.24	.54	1.10	.04	.01	0	0
23	0	.02	.02	.01	.09	.26	.48	.95	.04	.01	0	0
24	0	.02	.02	.02	.08	.20	.43	.86	.04	.01	.01	0
25	0	.02	.02	.02	.08	.17	.42	.80	.04	.01	.01	0
26	0	.02	.02	.04	.08	.15	.47	.69	.03	.01	.01	0
27	0	.02	.02	.04	.07	.14	.56	.58	.03	.01	.01	0
28	0	.02	.02	.03	.07	.13	.71	.51	.03	.01	.01	0
29	0	.02	.02	.03	-	.14	.90	.46	.03	.01	0	0
30	0	.02	.02	.03	-----	.20	1.07	.43	.03	.01	0	0
31	0	-----	.02	.11	-----	.30	-----	.54	-----	.01	0	-----
Total	0.11	0.52	0.71	0.59	3.42	3.87	23.28	31.30	5.28	0.47	0.26	0.04
Mean	0.004	0.017	0.023	0.019	0.122	0.125	0.776	1.01	0.176	0.015	0.008	0.001
Max.	0.02	0.03	0.09	0.11	0.48	0.30	1.34	1.55	0.74	0.03	0.01	0.01
Min.	0	0	0.01	0.01	0.05	0.07	0.41	0.43	0.03	0.01	0	0
Ac-ft	0.2	1.0	1.4	1.2	6.8	7.7	46.2	62.1	10.5	0.9	0.5	0.1
Calendar year 1960 :			Max	2.86	Min	0	Mean	0.294	Acra-feet		213	
Water year 1960-61 :			Max	1.55	Min	0	Mean	0.191	Acra-feet		139	

a No gage-height record.

b Stage-discharge relation affected by ice.

SACRAMENTO RIVER BASIN

11-4261.5. Onion Creek near Soda Springs, Calif.

Location.--Lat 39°16'00", long 120°21'50", in SE 1/4 sec. 11, T.16 N., R.14 E., on right bank 0.3 mile upstream from unnamed tributary 1 mile upstream from mouth, and 4.0 miles south of Soda Springs.

Drainage area.--3.58 sq mi.

Records available.--August 1959 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,900 ft (from topographic map).

Extremes.--Maximum discharge during year, 42 cfs Apr. 3 (gage height, 2.05 ft); minimum, 0.1 cfs for many days in August and September.

1959-61: Maximum discharge, 70 cfs Feb. 8, 1960; minimum, 0.1 cfs on some days in each year.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.25	0.1	1.6	5.9
1.3	.3	1.7	10
1.4	1.3	1.8	16
1.5	3.2	2.0	34

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.4	2.1	b1.3	3.0	3.2	1.2	2.0	1.3	1.1	0.2	0.2
2	.2	.4	1.8	b1.3	2.8	3.4	2.1	1.9	1.3	1.0	.2	.2
3	.2	.4	1.1	b1.6	3.0	3.0	2.7	2.0	1.1	1.0	.2	.2
4	.2	.5	1.0	b1.4	2.8	3.0	2.6	1.8	1.0	1.0	.2	.2
5	.2	.5	.9	b1.3	3.0	3.2	2.2	1.6	9.1	1.0	.1	.2
6	1.1	.6	2.3	1.3	* 2.8	3.9	2.1	1.6	8.3	.9	.1	.2
7	.5	.7	3.2	1.3	2.6	3.9	1.8	1.6	7.9	.9	.2	.2
8	.5	.8	2.1	1.3	2.3	3.0	1.8	1.8	7.1	.8	.2	.2
9	.4	.7	.9	1.3	1.1	b 2.8	1.7	1.9	* 6.7	.7	.1	.2
10	.5	.6	.9	1.4	1.4	2.8	1.6	2.2	6.7	.6	.1	.2
11	.5	.8	.9	1.6	8.7	2.8	1.8	1.8	5.9	.5	.1	.2
12	.5	1.0	.9	1.6	5.3	2.8	1.6	1.8	5.3	.5	.2	.2
13	.5	.9	1.1	1.6	4.1	3.2	1.6	2.1	5.0	* .6	.2	.2
14	.5	.9	1.0	1.6	3.0	4.4	1.6	2.1	4.4	.5	.1	.2
15	.4	.8	1.0	1.6	3.0	4.7	1.9	2.1	4.1	.5	.1	.2
16	.4	.8	1.0	1.6	3.2	3.7	2.2	2.1	3.7	.5	.1	.4
17	.4	1.0	1.8	1.6	3.2	3.9	2.2	2.1	3.4	.4	.1	.6
18	.4	1.3	1.3	1.6	2.8	3.9	1.9	2.2	3.2	.4	.1	.5
19	.4	1.1	1.1	1.6	2.8	3.7	1.6	2.1	2.8	.4	.2	.3
20	* .4	1.0	1.1	1.6	3.7	3.9	1.4	2.0	2.6	.4	.2	.3
21	.4	1.1	* 1.4	1.4	4.7	5.3	1.3	2.0	2.3	.4	.1	.3
22	.4	1.1	1.6	1.4	4.1	6.7	1.3	1.9	2.1	.3	.1	.2
23	.4	1.0	1.8	1.4	3.4	6.3	1.3	1.7	1.9	.3	.1	.2
24	.4	1.0	1.8	1.4	3.2	5.6	1.0	1.6	1.8	.2	.2	.2
25	.4	1.0	1.6	1.4	3.2	5.9	1.0	1.6	1.6	.2	.2	.2
26	.4	2.8	1.6	1.4	2.8	4.7	1.3	1.4	1.6	.2	.2	.2
27	.4	.9	1.4	1.4	2.8	4.7	1.6	1.4	1.6	.2	.2	.2
28	.4	1.0	1.3	1.3	2.8	* 4.4	1.9	1.2	1.6	.2	.4	.2
29	.4	.8	1.4	1.3	-	4.7	* 2.0	1.1	1.4	.2	.4	.2
30	.4	.8	1.3	1.3	-	6.7	2.2	1.0	1.3	.2	.2	.2
31	.4	-	1.3	2.6	-	8.7	-	1.2	-	.2	.2	-
Total	12.8	26.7	44.0	45.8	115.0	132.9	52.5	54.9	150.4	16.3	5.3	7.2
Mean	0.41	0.89	1.42	1.48	4.14	4.29	17.5	17.7	5.01	0.53	0.17	0.24
Max.	1.1	2.8	3.2	2.6	14	8.7	27	22	13	1.1	0.4	0.6
Min.	0.2	0.4	0.9	1.3	2.3	2.8	1.0	1.0	1.3	0.2	0.1	0.2
Ac-ft	25	53	87	91	230	264	1,040	1,090	298	32	11	14

Calendar year 1960: Max 46 Min 0.2 Mean 5.65 Acre-feet 4,090
 Water year 1960-61: Max 27 Min 0.1 Mean 4.47 Acre-feet 3,240

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement made on this day.

^b Stage-discharge relation affected by ice.

817

Location.--Lat 39°15'58", long 120°21'19", in NE 1/4 sec.12, T.16 N., R.14 E., 0.4 mile upstream from junction with Onion Creek, 0.6 mile southeast of Onion Creek Campground, and 4.1 miles southeast of Soda Springs.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder and 120° sharp-edged V-notch weir. Altitude of gage is 6,120 ft (from topographic map).

1958-61: Maximum discharge, 19.8 cfs Feb. 8, 1960 (gage height, 1.83 ft); no flow at times in each year.

Cooperation.--Records of daily discharge furnished by U. S. Forest Service and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.01	0.31	0.11	0.29	0.49	1.70	4.19	4.89	0.31	0.02	
2	0	.01	.13	.11	.30	.47	3.55	4.06	5.23	.28	.01	
3	0	.01	.08	.11	.32	.38	5.04	4.60	4.26	.31	.01	
4	0	.01	.07	.10	.29	.37	4.99	4.28	3.81	.27	a.01	
5	0	.01	.06	.11	.38	.34	3.81	3.57	3.42	.26	a.01	
6	0	.03	.06	.11	.33	.36	3.50	3.06	3.10	.24	a.01	
7	0	.05	.06	.12	.28	.36	3.00	3.29	2.82	.22	a.01	
8	0	.04	.06	.12	.27	.35	3.24	4.40	2.56	a.20	a.01	
9	0	.04	.06	.19	1.90	.34	3.11	5.25	2.28	a.18	.01	
10	0	.03	.06	.13	2.42	.33	2.95	6.02	2.10	a.16	.01	
11	0	.04	.06	.18	1.11	.32	3.72	4.17	1.90	a.14	0	
12	0	.08	.06	.16	.67	.31	3.01	3.66	1.71	a.13	0	
13	0	.06	.06	.15	.52	.42	2.72	4.66	1.58	a.12	0	
14	0	.05	.06	.16	.50	.53	2.79	5.64	1.42	.11	0	
15	0	.05	.06	.18	.51	.47	3.55	5.84	1.30	.10	0	
16	0	.05	.06	.16	.44	.36	4.85	6.33	1.17	.09	0	
17	.01	.06	.13	.17	.41	.36	5.27	7.03	1.06	.08	0	
18	.01	.08	.09	.18	.39	.39	4.04	7.58	.96	.07	0	
19	.01	.06	.08	.18	.42	.39	3.35	6.57	.90	.07	0	
20	.01	.05	.08	.18	.51	.44	2.87	6.77	.81	.06	.01	
21	.01	.05	.08	.17	.69	.69	2.50	6.67	.85	.05	0	
22	.01	.05	.10	.17	.55	.82	2.28	6.52	.73	.04	0	
23	.01	.04	.12	.17	.43	.78	1.99	5.82	.58	.04	.01	
24	.01	.04	.13	.17	.43	.65	1.74	5.55	.55	.03	.01	
25	.01	.05	.12	.18	.42	.65	1.74	5.35	.49	.03	0	
26	.01	.06	.12	.22	.38	.54	1.94	4.52	.46	.03	0	
27	.01	.05	.11	.19	.37	.51	2.38	4.03	.42	.02	.01	
28	.01	.05	.10	.18	.38	.48	3.32	3.49	.39	.02	.01	
29	.01	.05	.10	.17	-	.56	3.90	3.22	.37	.02	0	
30	.01	.05	.10	.20	-	.90	4.61	2.92	.36	.02	0	
31	.01	-	.11	.33	-	1.17	-	5.47	-	.02	0	
Total	0.15	1.31	2.88	5.06	15.91	15.53	97.46	152.53	52.48	3.72	0.16	0
Mean	0.005	0.044	0.093	0.163	0.568	0.501	3.25	4.92	1.75	0.120	0.005	0
Max.	0.01	0.08	0.31	0.33	2.42	1.17	5.27	7.58	5.23	0.31	0.02	0
Min.	0	0.01	0.06	0.10	0.27	0.31	1.70	2.92	0.36	0.02	0	0
Ac-ft	0.3	2.6	5.7	10.0	31.6	30.8	193	303	104	7.4	0.3	0
Calendar year 1960 :				Max	11.0	Min	0	Mean	1.29	Acres-foot	95	
Water year 1960-61 :				Max	7.58	Min	0	Mean	0.951	Acres-foot	68	

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4262. North Fork Forbes Creek near Dutch Flat, Calif.

Location.--Lat 39°08'37", long 120°45'30", in SE $\frac{1}{4}$ sec.17, T.15 N., R.11 E., on right bank 0.2 mile downstream from Big Reservoir and 6.0 miles southeast of Dutch Flat.

Drainage area.--1.68 sq mi.

Records available.--July 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,980 ft (from topographic map).

Average discharge.--5 years, 2.99 cfs (2,160 acre-feet per year).

Extremes.--Maximum discharge during year, 9.1 cfs Apr. 30 (gage height, 2.19 ft); minimum daily, 1.0 many days.

1956-61: Maximum discharge, 42 cfs Apr. 1, 1958 (gage height, 3.01 ft); minimum daily, 0.8 cfs Feb. 5, 6, Dec. 11-14, 1957.

Remarks.--Flow regulated by Big Reservoir.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	0.8
1.6	1.2
1.7	2.0
1.8	3.0
1.9	4.2
2.0	5.7

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.3	1.7	1.1	*1.3	1.3	2.0	5.7	2.4	2.1	1.9	1.5
2	1.4	1.3	1.6	1.1	1.3	1.3	2.0	4.4	2.4	2.1	1.9	1.5
3	1.4	1.3	1.3	1.1	1.3	1.3	2.1	3.5	2.4	2.1	1.8	1.4
4	1.4	1.3	1.2	1.1	1.3	1.3	2.1	3.1	2.3	2.1	1.8	1.4
5	1.4	1.3	1.1	1.1	1.2	1.3	*2.0	3.1	2.3	2.1	1.8	*1.4
6	1.5	1.3	1.1	1.1	1.2	1.3	2.0	4.8	2.3	2.1	1.8	1.3
7	*1.4	1.3	1.1	1.1	1.2	*1.3	2.0	5.0	2.2	2.1	1.8	1.3
8	1.4	1.3	1.1	1.1	1.2	1.4	2.0	4.2	2.1	2.1	1.8	1.3
9	1.3	1.3	1.1	1.1	1.5	1.5	2.1	3.0	2.1	2.1	1.8	1.3
10	1.3	1.3	1.1	1.1	1.4	1.4	2.1	2.3	2.3	2.1	1.8	1.3
11	1.3	1.4	1.2	1.0	1.7	1.4	2.3	2.4	2.6	2.1	1.8	1.3
12	1.3	1.4	1.2	1.0	1.6	1.3	2.9	2.2	2.6	2.1	1.8	1.3
13	1.3	1.6	1.2	1.0	1.4	1.3	3.5	2.2	2.5	2.1	1.8	1.3
14	1.3	1.6	*1.2	1.0	1.3	1.3	3.7	2.2	2.5	2.1	1.7	1.3
15	1.3	*1.4	1.1	1.0	1.3	1.5	4.0	2.3	2.5	2.0	1.7	1.3
16	1.3	1.3	1.2	1.0	1.3	1.5	3.8	2.4	2.5	2.0	1.7	1.3
17	1.3	1.3	1.3	1.0	1.3	1.6	3.5	2.7	2.5	2.0	1.7	1.3
18	1.3	1.6	1.2	1.0	1.3	1.6	2.7	2.4	2.5	2.0	1.7	1.3
19	1.3	1.3	1.2	*1.0	1.2	1.6	3.7	2.1	2.5	2.0	1.7	1.3
20	1.3	1.3	1.1	1.0	1.2	1.6	*3.8	2.2	2.5	2.0	1.7	1.3
21	1.3	1.2	1.1	1.0	1.2	1.6	3.5	2.2	2.5	2.0	1.6	1.2
22	1.3	1.2	1.1	1.1	1.2	1.6	3.6	2.2	2.4	2.0	1.6	1.2
23	1.3	1.2	1.1	1.1	1.2	1.7	4.2	*2.2	2.4	2.0	1.6	1.2
24	1.3	1.2	1.1	1.1	1.2	1.8	4.0	2.2	2.3	2.0	1.6	1.1
25	1.3	1.2	1.1	1.1	1.2	1.9	3.8	2.2	2.3	2.0	1.6	1.1
26	1.3	1.5	1.1	1.1	1.2	1.9	3.8	2.2	2.3	2.0	1.6	1.1
27	1.3	1.3	1.1	1.1	1.2	2.0	3.6	2.2	2.2	2.0	1.6	1.1
28	1.3	1.3	1.1	1.2	1.2	1.9	3.5	2.3	2.2	*1.9	1.6	1.1
29	1.3	1.3	1.1	1.2	-	1.8	3.2	2.3	*2.2	1.9	1.6	1.1
30	1.3	1.3	1.1	1.2	-----	1.9	4.8	2.3	2.1	1.9	1.5	1.1
31	1.3	-----	1.1	1.6	-----	1.9	-----	2.4	-----	1.9	1.5	-----
Total	41.2	39.8	36.4	33.8	36.1	48.1	92.3	86.9	70.9	63.0	52.9	38.0
Mean	1.33	1.33	1.17	1.09	1.29	1.55	3.08	2.80	2.36	2.03	1.71	1.27
Max.	1.5	1.6	1.7	1.6	1.7	2.0	4.8	5.7	2.6	2.1	1.9	1.5
Min.	1.3	1.2	1.1	1.0	1.2	1.3	2.0	2.1	2.1	1.9	1.5	1.1
Ac-ft	82	79	72	67	72	95	183	172	141	125	105	75
Calendar year 1960 :	Max 22			Min 1.1			Mean 2.27		Acre-feet 1,640			
Water year 1960-61 :	Max 5.7			Min 1.0			Mean 1.75		Acre-feet 1,270			

* Discharge measurement made on this day.

11-4264. North Shirltail Creek near Dutch Flat, Calif.

Location.--Lat 39°07'49", long 120°47'44", in SE $\frac{1}{4}$ sec.24, T.15 N., R.10 E., on right bank 200 ft downstream from Forbes Creek and 7.0 miles southeast of Dutch Flat.

Drainage area.--9.10 sq mi.

Records available.--July 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,500 ft (from topographic map).

Average discharge.--5 years, 14.1 cfs (10,210 acre-ft per year).

Extremes.--Maximum discharge during year, 151 cfs Dec. 1 (gage height, 3.06 ft); minimum daily, 0.2 cfs Oct. 1-5.

1956-61: Maximum discharge, 561 cfs Feb. 8, 1960 (gage height, 4.87 ft), from rating curve extended above 170 cfs; minimum daily, 0.2 cfs many days in 1959-60.

Remarks.--Flow slightly regulated by Big Reservoir.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.5	0.1	1.0	3.9
.6	.3	1.2	8.0
.7	.8	1.5	16
.8	1.5	1.8	30
.9	2.5	2.1	48

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.5	3.2	1.6	*8.5	5.5	2.7	1.8	1.1	2.5	1.0	0.5
2	.2	.5	2.7	1.5	1.1	6.2	2.6	1.5	1.1	2.4	1.0	.5
3	.2	.8	1.3	1.4	1.1	6.9	2.4	1.3	9.5	2.3	9	.5
4	.2	.7	8.5	1.4	8.5	5.3	2.1	1.3	9.0	2.3	9	.4
5	.2	.6	6.6	1.4	6.9	5.9	*1.9	1.2	8.3	2.3	9	*.4
6	.3	.8	5.2	1.4	5.7	7.5	1.7	1.7	7.5	2.3	1.0	.4
7	*.3	1.0	4.3	1.4	5.2	7.5	1.5	1.8	6.9	2.2	1.0	.3
8	.3	.7	3.3	1.3	4.6	7.8	1.5	1.5	6.6	2.1	9	.4
9	.3	.7	3.1	1.3	1.6	1.4	1.4	1.3	6.4	2.1	9	.4
10	.3	.7	2.9	1.3	1.8	1.1	1.3	1.5	6.2	2.0	9	.4
11	.3	2.0	2.9	1.2	3.3	1.1	1.3	1.6	5.7	1.9	9	.4
12	.3	2.9	2.8	1.2	2.5	1.1	1.5	1.8	5.5	1.9	9	.4
13	.3	6.6	2.6	1.2	1.7	9.8	1.4	1.6	5.3	1.9	9	.4
14	.3	6.4	*2.5	1.2	1.4	1.0	1.3	1.5	5.0	1.9	1.1	.4
15	.3	*3.6	2.5	1.2	1.4	2.5	1.3	1.5	4.8	1.9	1.2	.4
16	.3	2.3	2.6	1.2	1.3	2.3	1.2	1.4	4.6	1.8	9	.4
17	.3	2.1	5.7	1.1	1.2	2.7	1.1	1.4	4.4	1.8	.7	.5
18	.3	1.2	4.3	1.1	1.1	2.5	1.0	1.3	4.3	1.7	.5	.5
19	.3	5.0	3.9	*1.0	1.0	2.4	1.0	1.3	4.1	1.7	.5	.4
20	.3	3.1	3.3	1.0	9.3	3.1	*1.0	1.3	3.9	1.6	.5	.4
21	.4	2.6	3.2	1.0	8.9	3.0	1.1	1.2	3.8	1.5	.5	.4
22	.4	2.2	2.9	1.0	8.0	2.7	1.3	1.2	3.6	1.4	.5	.4
23	.4	2.0	2.6	1.0	7.5	3.5	1.3	*1.1	3.3	1.4	.5	.4
24	.4	1.8	2.5	1.0	7.1	3.9	1.4	1.1	3.2	1.4	.5	.4
25	.5	1.8	2.4	1.1	6.6	4.2	1.7	1.1	3.2	1.5	.5	.5
26	.5	8.0	2.3	1.4	6.6	3.9	1.9	1.1	2.9	1.5	.5	.4
27	.5	5.5	2.0	1.4	6.4	4.3	1.8	1.1	2.8	1.4	.5	.4
28	.5	4.1	1.9	1.4	5.9	3.9	1.6	1.0	2.8	*1.4	.5	.4
29	.5	3.5	1.8	1.6		3.4	1.5	9.8	*2.6	1.4	.5	.4
30	.5	3.5	1.8	2.4		3.1	1.5	1.0	2.5	1.0	.5	.4
31	.5		1.7	1.2		2.9		1.1		1.0	.5	.4
Total	10.8	88.0	164.1	50.7	310.6	662.4	46.3	415.8	160.7	55.5	24.2	12.5
Mean	0.35	2.93	5.29	1.64	11.1	21.4	15.4	13.4	5.36	1.79	0.78	0.42
Max.	0.6	12	32	12	33	43	27	18	11	2.5	1.2	0.5
Min.	0.2	0.5	1.7	1.0	4.6	5.3	1.0	9.8	2.5	1.0	0.5	0.3
Ac-ft	21	175	225	101	616	1,314	918	825	319	110	48	25

Calendar year 1960:

Max 355

Min 0.2

Mean 10.4

Ac-ft 7,580

Water year 1960-61:

Max 43

Min 0.2

Mean 6.63

Ac-ft 4,800

Peak discharge (base, 150 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4270. North Fork American River at North Fork Dam, Calif.

Location--Lat 38°56'15", long 121°01'25", in SW¹/₄ NW¹/₄ sec.31, T.13 N., R.9 E., on left bank 50 ft upstream from spillway of North Fork Dam, 2 miles upstream from Middle Fork, and 4 miles northeast of Auburn.

Drainage area--343 sq mi.

Records available--October 1941 to September 1961.

Gage--Water-stage recorder with thermograph attachment. Datum of gage is 715.0 ft above mean sea level (levels by Corps of Engineers).

Average discharge--20 years, 795 cfs (575,600 acre-ft per year).

Extremes--Maximum discharge during year, 2,510 cfs Feb. 10 (gage height, 2.69 ft); minimum, 20 cfs Sept. 2.

1941-61: Maximum discharge, 49,100 cfs Dec. 23, 1955 (gage height, 10.22 ft), from rating curve extended above 22,000 cfs on basis of computed flow over spillway of dam; no flow Aug. 27-30, Sept. 2-11, 1944, caused by operation of valves in North Fork Dam.

Remarks--Records good. Flow regulated by Lake Clementine (capacity, 12,800 acre-ft) formed by North Fork Dam. Storage in Big Reservoir and Lake Valley Reservoir (combined capacity, 10,300 acre-ft) above station. Lake Valley Canal diverts from North Fork of North Fork American River into Bear River basin for power development in Alta powerhouse of Pacific Gas and Electric Co. Combined storage and diversion have small effect on natural flow.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.18	20	0.8	325
.2	25	1.2	665
.3	55	1.6	1,080
.4	93	2.0	1,570
.6	194	2.5	2,220

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	37	236	101	*922	*237	915	*992	*566	106	46	31
2	31	37	1,050	97	521	244	1,070	926	722	97	*46	28
3	31	40	506	93	770	311	1,530	840	712	93	46	25
4	31	46	290	93	566	290	1,670	850	638	89	43	25
5	31	43	213	93	392	277	1,500	780	584	89	43	25
6	34	43	176	89	325	318	1,190	780	548	85	40	25
7	37	52	150	89	297	304	1,090	810	512	81	40	25
8	43	58	141	89	263	290	904	790	476	77	40	25
9	34	52	131	89	423	355	871	840	434	77	40	25
10	31	49	126	89	1,920	348	871	1,250	385	69	37	25
11	34	52	126	89	1,400	348	800	1,300	378	65	34	25
12	34	111	116	89	1,200	362	937	1,060	340	69	34	25
13	34	200	106	93	770	340	830	992	318	65	34	22
14	34	277	106	93	584	378	790	959	304	61	34	25
15	34	176	111	89	557	848	722	992	290	61	34	22
16	37	116	111	89	566	820	830	992	277	58	34	25
17	37	89	146	93	485	850	1,000	992	250	58	34	28
18	37	*141	263	93	426	760	1,010	1,060	225	58	34	31
19	37	237	206	93	378	665	820	1,260	206	55	34	34
20	37	145	170	93	355	810	665	1,080	188	52	34	34
21	37	111	150	93	348	904	611	1,020	176	52	37	31
22	37	101	145	93	355	840	684	948	165	52	37	28
23	37	93	150	93	348	1,100	694	948	155	52	34	28
24	37	89	145	93	311	1,130	620	860	150	52	31	28
25	37	85	136	93	290	1,320	593	830	141	52	31	28
26	40	387	131	106	284	1,070	638	810	131	52	31	28
27	40	289	121	126	263	1,050	722	656	126	49	31	28
28	40	160	121	136	250	981	820	611	116	49	31	28
29	37	131	*116	131	-	871	937	548	111	46	31	28
30	37	116	116	150	-----	840	959	512	*106	46	34	28
31	*37	-----	106	393	-----	*871	-----	503	-----	46	*34	-----
Total	1,105	3,563	5,917	3,343	15,569	20,132	27,293	27,791	9,730	20,13	1,123	813
Mean	35.6	119	191	108	556	649	910	896	324	64.9	36.2	27.1
Max.	43	387	1,050	393	1,920	1,320	1,670	1,300	722	106	46	34
Min.	31	37	106	89	250	237	593	503	106	46	31	22
Ac-ft	2,190	7,070	11,740	6,630	30,880	39,930	54,130	55,120	19,300	3,990	2,230	1,610

Calendar year 1960:

Max 17,800

Min 25

Mean 535

Acre-feet 388,300

Water year 1960-61:

Max 1,920

Min 22

Mean 324

Acre-feet 234,800

Peak discharge (base, 4,300 cfs)--No peak above base.

*Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

821

11-4270. North Fork American River at North Fork Dam, Calif.--Continued.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	68	68	59	59	51	51	44	44	47	47	49	48	52	51	58	56			75	74	77	76	78	78
2	68	68	59	59	51	51	44	44	48	47	50	49	54	52	58	57			77	74	77	77	78	78
3	68	68	59	59	51	50	44	44	49	48	50	50	55	54	58	57			77	76	77	77	78	76
4	68	68	59	59	50	49	44	44	49	49	50	50	55	54	58	58			76	74	78	77	76	75
5	67	67	59	59	49	49	44	44	50	49	50	49	55	53	58	58			75	73	78	77	75	75
6	67	67	59	58	49	49	44	43	51	50	49	49	55	53	58	57			74	73	79	77	76	75
7	67	67	58	58	49	49	43	43	50	50	49	49	54	53	57	57			74	73	78	78	75	75
8	67	67	58	58	49	49	43	43	50	50	50	49	54	54	58	56			74	73	79	78	75	74
9	67	66	58	58	49	49	44	43	50	50	49	49	54	54	58	58			75	73	79	78	74	73
10	66	65	58	57	49	48	44	44	50	49	50	49	54	54	58	58			75	74	80	79	73	73
11	65	65	57	57	48	48	44	44	49	49	50	50	54	54	58	55			75	74	80	80	73	73
12	65	65	57	57	48	48	44	44	49	49	50	50	54	54	55	55			75	75	80	80	73	73
13	65	64	57	57	48	48	44	44	49	49	51	50	54	53	56	54			78	75	80	79	73	73
14	64	64	57	56	48	47	44	44	49	49	52	50	53	53	58	56			78	76	80	79	73	72
15	63	63	56	56	47	47	44	44	49	49	51	50	54	53	58	58			78	76	79	79	72	72
16	62	62	56	55	46	46	44	44	49	48	51	51	55	54	60	58			78	77	79	79	72	71
17	62	62	55	54	46	46	44	44	48	48	51	51	56	55	61	59			78	77	79	79	71	71
18	62	62	55	55	47	46	44	44	48	47	51	51	57	55	62	60			78	77	79	79	71	70
19	62	62	55	54	47	46	44	44	47	47	52	51	55	55	62	60			78	77	79	79	70	70
20	62	61	54	54	46	46	44	44	47	47	52	51	55	55	60	60			78	77	79	79	70	70
21	61	61	54	54	46	46	45	44	47	47	51	51	55	53	60	57			78	77	79	79	70	70
22	61	61	54	53	46	46	45	45	48	47	53	51	53	52	62	57			79	78	79	79	70	70
23	61	61	53	53	46	45	45	45	48	48	54	53	52	52	60	60			79	78	79	79	70	70
24	61	60	53	53	45	45	45	45	48	48	54	53	52	52	61	60			79	78	79	79	70	70
25	60	60	53	53	45	45	45	45	48	48	53	51	52	51	62	60			79	78	79	79	70	69
26	59	59	53	52	45	45	46	45	48	48	51	51	52	51	62	60			79	78	79	79	69	68
27	59	59	52	52	45	45	46	46	48	48	51	50	53	52	62	62			79	78	79	78	68	68
28	59	59	52	51	45	44	46	46	48	48	51	50	55	53	63	60			79	78	78	78	68	68
29	59	59	51	51	44	44	46	46	-	-	51	50	57	55	62	60			79	78	78	78	68	68
30	59	59	51	51	44	44	46	46	-	-	51	50	57	56	62	61			78	77	78	78	68	68
31	59	59	-	-	44	44	47	46	-	-	51	51	-	-	62	61			78	77	78	78	-	-
Avg	63	63	56	55	47	47	45	44	49	48	51	50	54	53	60	58	-	-	77	76	79	78	72	72

11-4275. Middle Fork American River at French Meadows, Calif.

Location.--Lat 39°06'43", long 120°28'00", in NE¼ sec.36, T.15 N., R.13 E., on left bank at downstream end of French Meadows, 4.9 miles upstream from Chipmunk Creek, and 14 miles south of Cisco.

Drainage area.--46.7 sq mi.

Records available.--October 1951 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,050 ft (from Bureau of Reclamation reservoir map).

Average discharge.--10 years, 149 cfs (107,900 acre-ft per year).

Extremes.--Maximum discharge during year, 736 cfs probably Feb. 9 (gage height, 6.11 ft); minimum, 0.3 cfs Oct. 4, 5, 21-25.

1951-61: Maximum discharge, 16,300 cfs Dec. 23, 1955 (gage height, 14.95 ft), from rating curve extended above 1,400 cfs on basis of slope-area measurement of peak flow; minimum, that of Oct. 4, 5, 21-25, 1960.

Remarks.--Records good except those for period of no gage-height record, which are poor. No storage or diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 1-18)

Oct. 1 to Dec. 1

Dec. 2 to Sept. 30

1.5	0.3	1.5	0.5	3.0	32
1.6	.8	1.6	.8	3.3	50
1.8	2.1	1.8	1.7	3.6	75
2.0	4.2	2.0	3.4	4.0	118
2.2	7.3	2.2	5.9	4.5	189
2.4	12	2.4	9.4	5.0	294
2.7	21	2.7	18	5.5	460
3.0	35				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.5	22	8.6	60	55	168	284	184	17	2.8	0.8
2	.4	.6	42	8.3	80	60	286	244	231	16	2.6	.9
3	.4	.6	20	8.4	70	55	424	253	203	15	2.6	.8
4	.4	.6	14	8.4	55	55	460	242	198	16	2.5	.8
5	.4	.6	12	* 8.3	45	55	368	208	194	14	2.5	.7
6	.6	.9	9.9	8.5	40	55	*315	204	191	13	2.3	.7
7	.6	1.0	9.4	8.5	40	55	284	203	184	12	2.2	.7
8	.4	.8	9.6	8.5	50	55	244	217	176	11	2.1	*.7
9	.4	.8	8.8	8.5	450	50	251	250	158	10	1.9	.7
10	.4	.8	8.4	9	300	* 49	236	388	154	9.4	1.8	.7
11	.4	1.3	8.4	9	200	52	240	304	138	8.6	1.8	.6
12	.4	1.4	7.9	9	150	52	258	258	128	* 8.3	1.8	.6
13	.4	1.3	7.9	9	120	53	210	260	*128	7.5	1.7	.6
14	.4	1.2	8.1	9	100	71	212	279	127	7.3	1.6	.6
15	.4	1.2	7.9	9	100	93	216	289	118	7.0	1.4	.6
16	.4	1.2	8.3	9	90	73	282	*292	110	6.9	1.4	.7
17	.4	1.4	19	9	80	71	320	302	97	6.4	1.4	.7
18	.4	2.1	19	9	75	64	*279	335	85	6.1	1.3	.6
19	*.4	4.9	15	9	70	70	214	350	76	5.5	1.4	.6
20	.4	7.3	13	9	75	102	178	320	70	5.3	1.2	.6
21	.4	7.1	13	9	80	117	160	307	61	4.9	1.2	.6
22	.3	7.1	13	9	80	132	147	302	53	4.6	1.1	.6
23	.3	7.3	13	9	70	178	134	289	46	4.3	1.0	.6
24	.3	7.1	13	9	65	147	123	279	41	4.1	1.0	.6
25	.3	7.3	13	9	65	118	122	282	35	3.9	1.0	.5
26	.4	8.1	16	14	60	105	136	238	30	3.7	1.0	.5
27	.4	7.3	10	20	55	98	*160	204	28	3.4	1.0	.5
28	.4	8.1	10	15	55	87	206	189	23	3.3	.9	.5
29	.4	8.1	10	12	-	90	251	172	21	3.2	.9	.5
30	.4	7.9	11	20	-	106	264	158	19	3.1	.9	.5
31	.4	-	9.4	90	-	138	-	167	-	3.0	.8	-
Total	12.4	105.9	402.0	391.0	2780	2561	7148	8069	3307	243.8	49.1	19.1
Mean	0.40	3.53	13.0	12.6	99.3	82.6	238	260	110	7.86	1.58	0.64
Max.	0.6	8.1	42	90	450	178	460	388	231	17	2.8	0.9
Min.	0.3	0.5	7.9	8.3	40	49	122	158	19	3.0	0.8	0.5
Ac-ft	25	210	797	776	5,510	5,080	14,180	16,000	6,560	484	97	38

Calendar year 1960 :

Max 1,960

Min 0.3

Mean 115

Acra-feet 83,300

Water year 1960-61 :

Max 460

Min 0.3

Mean 68.7

Acra-feet 49,760

Peak discharge (base, 1,400 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 6 to Mar. 9.

11-4277. Duncan Creek near French Meadows, Calif.

Location.--Lat 39°08'10", long 122°28'39", in SW 1/4 sec. 24, T. 15 N., R. 13 E., on right bank 0.5 mile downstream from Little Duncan Creek, 2 miles northwest of French Meadows, and 20 miles northeast of Foresthill.

Drainage area.--9.94 sq mi.

Records available.--August 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 5,280 ft (from topographic map).

Extremes.--1960: Maximum discharge for period August to September, 0.7 cfs Sept. 3 (gage height, 1.78 ft); minimum, 0.2 cfs Sept. 19, 20, 27, 28.

1960-61: Maximum discharge during year, 260 cfs Feb. 9 (gage height, 4.42 ft), from rating curve extended above 87 cfs; minimum, 0.3 cfs Oct. 1-5, Sept. 6, 7, 11-15.

Remarks.--Records good except those for periods of ice effect, which are poor. No storage or diversion above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.6	0.1	2.3	6.8
1.7	.3	2.5	12
1.8	.8	2.7	19
1.9	1.4	3.0	36
2.0	2.3	3.4	74
2.1	3.5	3.8	125

Discharge, in cubic feet per second, 1960

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	0.4	6	-	0.4	11	-	0.4	16	-	0.3	21	-	0.3	26	0.5	0.3
2	-	.4	7	-	.4	12	-	.4	17	-	.3	22	-	.3	27	.5	.2
3	-	.6	8	-	.3	13	-	.3	18	-	.3	23	-	.3	28	.5	.2
4	-	.5	9	† 0.6	.4	14	-	.3	19	-	.3	24	*0.6	.3	29	.4	.3
5	-	.4	10	-	.5	15	-	.3	20	-	.3	25	.6	.3	30	.4	.3
															31	.4	-
Total																-	10.3
Mean																-	0.34
Max																-	0.6
Min																-	0.2
Runoff in acre-feet																	20

* Discharge measurement made on this day.

† Result of discharge measurement.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.8	3.0	b 4.4	2.2	1.2	3.8	6.0	3.2	3.1	0.6	0.4
2	.3	.8	1.3	b 4.4	2.8	1.4	6.6	5.8	3.4	2.9	.6	.4
3	.3	1.1	8.1	b 4.4	2.8	1.3	9.2	6.1	3.1	3.1	.5	.4
4	.3	1.1	b 7.0	b 4.4	1.8	1.3	10.2	5.9	2.8	2.9	.5	.4
5	.3	1.0	b 6.0	*b 4.4	1.5	b 1.3	9.1	5.3	2.6	2.6	.5	.4
6	3.2	2.1	b 5.5	b 4.5	1.4	b 1.3	8.0	5.3	2.3	2.6	.5	.4
7	2.0	4.1	b 5.5	b 4.5	1.3	1.3	7.1	5.5	2.0	2.3	.5	*.3
8	1.1	2.7	b 5.5	b 4.5	1.3	1.2	6.4	5.8	1.9	2.1	.5	.4
9	.9	2.0	b 5.0	4.7	9.5	1.2	6.3	6.3	1.7	2.0	.5	.4
10	1.1	1.7	b 5.0	4.9	8.0	*1.1	6.0	9.0	1.6	1.9	.5	.4
11	1.3	3.9	4.9	5.2	5.2	1.1	5.9	7.3	1.5	1.6	.5	.3
12	1.1	6.8	4.9	5.1	3.2	1.1	6.0	6.9	*1.4	*1.6	1.0	.3
13	1.1	4.1	5.2	b 4.7	2.5	1.3	5.6	6.9	1.2	1.5	1.1	.3
14	1.0	b 4.1	5.2	5.1	2.4	1.7	5.1	7.0	1.1	1.4	.6	.3
15	.9	4.1	4.9	b 5.1	2.4	1.7	5.5	7.1	1.0	1.3	.5	.3
16	.9	4.3	5.8	5.2	2.0	1.4	6.8	* 7.1	9.2	1.2	.5	.6
17	.9	4.7	1.7	b 4.9	1.9	1.4	* 7.6	7.3	8.3	1.1	*.5	1.4
18	.9	1.4	9.5	b 4.9	1.7	1.4	* 6.9	7.6	7.4	1.1	.4	.9
19	.9	6.5	7.6	b 4.9	1.5	1.6	5.8	7.5	7.0	1.0	.5	.7
20	*.8	5.4	7.2	b 5.1	1.6	2.6	4.8	6.9	6.5	.9	.5	.6
21	.8	5.4	7.6	5.2	1.7	2.6	4.3	6.5	5.9	.9	.5	.5
22	.7	4.9	8.1	5.1	1.7	2.9	4.0	6.4	5.4	.8	.4	.5
23	.7	4.1	7.6	5.1	1.5	3.7	3.6	5.8	5.1	.8	.4	.5
24	.8	4.1	7.6	5.2	1.4	2.9	3.3	5.3	4.7	.7	.4	.5
25	.8	4.0	7.4	5.8	1.4	2.6	3.3	5.1	4.6	.7	.4	.4
26	1.1	5.1	6.8	8.8	1.3	2.2	3.5	4.5	4.3	.7	.4	.4
27	1.1	4.3	b 6.5	7.9	1.2	2.0	* 4.2	3.8	4.0	.6	.4	.4
28	1.3	4.1	b 6.0	6.8	1.2	2.0	4.9	3.4	3.7	.6	.5	.5
29	.9	4.3	b 5.5	6.7	-	2.1	5.4	3.2	3.5	.6	.6	.5
30	.9	4.4	b 5.5	1.1	2.6	2.6	5.9	2.9	3.4	.6	.5	.4
31	.8	-	b 5.0	3.6	3.1	3.1	-	3.2	-	.5	.5	-
Total	29.5	120.0	236.4	198.9	68.4	56.6	1.751	1.827	391.0	45.8	16.3	14.2
Mean	0.95	4.00	7.63	6.42	24.4	18.3	58.4	58.9	13.0	1.48	0.53	0.47
Max.	3.2	14	30	36	95	37	102	90	34	3.1	1.1	1.4
Min.	0.3	0.8	4.9	4.4	12	11	33	29	3.4	0.6	0.4	0.3
Ac-ft	59	238	469	395	1,360	1,120	3,470	3,620	776	91	32	28

Calendar year 1960: Max - Min - Mean - Acre-feet -
 Water year 1960-61: Max 102 Min 0.3 Mean 16.1 Acre-feet 11,660

Peak discharge (base, 450 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

11-4280. Rubicon River at Rubicon Springs, near Meeks Bay, Calif.

Location--Lat 39°01'10", long 120°14'46", in SW 1/4 sec. 31, T.14 N., R.16 E., on right bank 200 ft downstream from Rubicon Springs, 0.7 mile upstream from Miller Creek, and 7 miles west of Meeks Bay.

Drainage area--31.4 sq mi.

Records available--February 1910 to March 1914 (published as "at Rubicon Springs"), October 1956 to September 1961.

Gage--Water-stage recorder. Datum of gage is 6,052.97 ft above mean sea level, datum of 1929. Feb. 1, 1910, to Mar. 31, 1914, staff gage or water-stage recorder at site 0.4 mile downstream at different datum.

Average discharge--8 years (1910-13, 1956-61), 105 cfs (76,020 acre-ft per year).

Extremes--Maximum discharge during year, 850 cfs Feb. 9 (gage height, 5.45 ft); minimum, 0.1 cfs for many days.

1910-14, 1956-61: Maximum discharge, 3,030 cfs May 18, 1957 (gage height 8.27 ft), from rating curve extended above 1,100 cfs; no flow at times in some years.

Flood of December 1955 reached a stage of 13.0 ft, from floodmarks, present site and datum (discharge unknown).

Remarks--Records good. Low summer flow, beginning in 1950, augmented by release from streamflow maintenance dams on Lakes Clyde, Lois, Middle Velma, and Schmidell (total controlled capacity, 555 acre-ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.3	0.1	2.0	13
1.4	.3	2.2	24
1.5	.7	2.6	58
1.6	1.8	3.0	106
1.7	3.4	3.5	184
1.8	5.4	4.0	298
1.9	8.3	4.5	442

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	4.7	9.1	5.9	3.3	12.7	22.4	26.2	3.8	1.5	0.4
2	.1	.1	5.2	8.3	6.3	5.1	21.1	17.1	31.1	3.8	1.5	.4
3	.1	.3	2.8	7.6	6.4	4.5	32.6	20.7	30.6	4.6	1.4	.4
4	.1	1.1	2.2	7.3	3.2	3.7	35.5	19.3	31.1	4.7	1.4	.4
5	.4	2.2	2.0	*7.0	2.4	3.0	25.8	14.4	33.2	3.5	1.4	1.2
6	1.9	3.4	1.6	6.7	2.5	2.8	23.0	12.8	35.8	2.8	1.3	.5
7	4.3	4.3	1.6	6.7	2.4	3.0	19.4	13.3	33.5	2.3	1.4	.2
8	4.1	3.4	1.5	6.7	2.3	3.1	16.4	17.6	32.1	2.2	1.4	.1
9	2.5	2.2	1.4	7.0	2.3	3.0	18.0	27.3	27.5	2.0	1.4	.1
10	1.9	1.5	1.3	7.0	4.0	*2.8	15.0	44.1	28.0	1.9	1.5	.1
11	1.5	1.5	1.2	8.3	2.3	3.0	18.7	21.7	25.5	1.8	1.7	.1
12	1.3	1.0	1.2	9.5	1.7	2.9	20.6	18.0	22.4	1.6	1.5	.1
13	1.2	9.5	1.2	9.1	7.5	3.3	14.7	16.4	24.6	1.6	1.4	.1
14	1.1	9.5	1.2	9.1	5.7	5.8	13.7	22.1	27.0	1.4	1.5	.1
15	.6	1.0	1.2	9.5	5.4	6.0	17.2	27.0	25.5	1.0	1.9	.1
16	.4	1.2	1.2	1.0	4.4	4.5	28.3	30.1	24.8	8.7	.7	2.8
17	.4	1.4	3.2	9.5	3.8	3.8	32.5	32.4	22.4	7.9	.4	6.1
18	.3	3.6	2.5	9.5	3.4	3.4	24.3	36.9	18.8	7.0	.4	1.5
19	.2	2.1	1.8	9.5	3.1	3.7	15.0	38.9	17.9	6.2	.4	7.0
20	.1	1.4	1.6	1.0	3.5	8.0	11.4	42.8	16.6	5.4	.4	4.7
21	*.2	1.6	1.6	1.0	4.6	8.8	9.3	41.6	15.0	4.7	.5	3.0
22	.2	1.3	1.8	9.5	5.7	10.7	7.9	41.9	13.6	4.5	.4	2.2
23	.1	9.5	1.6	1.0	4.1	14.7	8.5	38.8	13.4	4.1	.4	2.2
24	.1	8.7	1.6	1.1	3.6	8.5	7.7	39.4	11.7	*3.6	.4	2.1
25	.1	1.7	1.6	1.2	3.8	6.2	8.2	42.2	9.7	3.4	.3	1.8
26	.1	1.3	1.4	1.9	3.3	5.1	11.3	32.8	9.6	2.9	.3	1.8
27	.1	1.4	1.3	1.9	2.9	4.4	15.4	24.4	8.3	2.5	.4	1.7
28	.1	1.3	1.2	1.5	2.8	4.2	19.4	23.5	6.2	2.2	.4	2.2
29	.1	1.3	1.0	1.4	-	4.2	22.2	*21.1	4.7	2.1	.6	2.4
30	.1	1.3	9.5	1.5	-	5.7	21.0	18.2	3.9	1.8	2.6	2.4
31	.1	-	9.1	6.8	-	9.6	-	28.2	-	1.7	.8	-
Total	23.9	28.6	55.6	36.9	1.9	1.6	5.4	8.4	6.3	45.8	31.6	14.1
Mean	0.77	9.5	17.9	11.9	70.5	51.9	182	273	210	14.8	1.02	4.73
Max.	4.3	36	52	68	403	147	355	441	358	47	2.6	61
Min.	0.1	0.1	9.1	6.7	23	28	77	128	39	1.7	0.3	0.1
Ac-ft	47	568	1,100	734	3,920	3,190	10,850	16,810	12,510	910	63	281

Calendar year 1960: Max 1,680 Min 0 Mean 87.5 Acra-feet 63,490
 Water year 1960-61: Max 441 Min 0.1 Mean 70.4 Acra-feet 50,980

Peak discharge (base, 700 cfs)--Feb. 9 (10 p.m.) 850 cfs (5.45 ft).

* Discharge measurement made on this day.

11-4305. South Fork Rubicon River at mouth, near Georgetown, Calif.

Location.--Lat 38°58'05", long 120°27'55", in SE $\frac{1}{4}$, sec. 13, T. 13 N., R. 13 E., on left bank 0.2 mile upstream from mouth, 0.4 mile downstream from South Creek, and 21 miles east of Georgetown.

Drainage area.--56.9 sq mi.

Records available.--November 1909 to December 1911 (published as Little South Fork Rubicon River at mouth near Quintette), July 1956 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,600 ft (from topographic map). Nov. 29, 1909, to Dec. 7, 1911, staff gage at site 30 ft downstream at different datum.

Average discharge.--5 years (1956-61), 86.0 cfs (62,260 acre-ft per year).

Extremes.--Maximum discharge during year, 660 cfs Feb. 9 (gage height, 3.85 ft); minimum, 1.7 cfs Nov. 2, 3.

1909-11, 1956-61: Maximum discharge, 2,940 cfs Feb. 24, 1958 (gage height, 7.83 ft), from rating curve extended above 1,200 cfs on basis of slope-area measurement at gage height 19.2 ft for flood of Dec. 23, 1955; minimum, 0.8 cfs Dec. 6, 1959.

Flood of Dec. 23, 1955, reached a stage of 19.2 ft, from floodmarks, present site and datum (discharge, 11,700 cfs from slope-area measurement of peak flow).

Remarks.--Records good. Flow regulated, beginning in 1884, by Loon Lake (usable capacity, 8,000 acre-ft) on Gerle Creek where most of stored water is diverted out of watershed in Georgetown Divide ditch (see p. 827).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
0.4	1.3	1.2	46	0.6	4.4	2.0	127
.5	3.4	1.5	80	.7	7.5	2.5	212
.6	7.5	2.0	147	.8	12	3.0	332
.8	18	2.5	240	1.0	23	4.0	725
1.0	31			1.5	65		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	1.9	28	9.0	120	40	201	224	143	15	8.7	8.3
2	5.5	1.9	44	10	122	58	299	163	168	12	8.7	8.3
3	5.1	2.4	30	12	158	75	378	168	130	14	8.7	7.9
4	5.1	2.6	20	11	84	59	359	153	106	14	9.1	7.9
5	4.7	2.6	16	*9.5	63	52	273	119	94	14	9.1	7.9
6	12	2.9	12	14	57	47	232	116	86	12	9.1	7.9
7	14	3.2	12	12	53	46	218	138	70	11	9.1	7.9
8	11	2.9	10	10	48	49	166	156	61	11	9.1	7.9
9	10	2.6	10	10	177	52	173	*163	47	10	9.1	7.5
10	9.5	2.4	9.0	10	330	*53	165	293	46	10	9.5	7.5
11	9.5	2.9	9.0	10	189	58	153	245	45	10	10	7.5
12	9.0	10	8.5	10	119	57	188	218	40	9.5	10	7.1
13	8.5	12	9.0	10	83	58	147	254	37	9.1	11	7.1
14	8.0	9.0	9.0	12	69	90	156	234	35	9.5	10	7.1
15	7.0	6.5	9.0	10	83	123	145	201	32	9.5	9.5	7.1
16	6.5	5.1	9.0	12	69	88	186	177	32	9.1	9.5	9.5
17	6.0	4.7	18	11	62	80	201	168	30	9.1	9.5	13
18	*6.0	12	35	10	54	72	172	177	27	*8.7	9.1	9.1
19	6.5	13	25	11	48	80	123	170	24	8.3	9.1	*8.3
20	6.0	10	20	11	51	147	95	152	22	8.3	9.5	7.9
21	5.5	8.0	19	12	60	168	83	153	22	8.3	9.1	7.9
22	4.7	7.5	22	12	70	166	78	155	21	8.3	9.1	7.9
23	4.4	6.5	22	12	55	224	88	139	20	8.3	9.5	7.9
24	4.0	5.5	20	12	50	168	92	121	19	8.7	9.5	7.9
25	3.7	5.5	18	12	49	120	92	117	18	8.7	10	7.5
26	3.4	14	17	22	47	104	110	108	16	8.3	8.7	7.1
27	3.4	9.5	14	34	42	98	166	87	15	8.7	9.1	7.1
28	2.9	7.5	12	25	39	86	220	78	14	9.1	9.5	9.1
29	2.4	7.0	13	23	-	88	252	73	14	8.7	9.1	7.9
30	2.1	7.0	12	24	109	109	232	69	14	8.7	9.1	7.1
31	1.9		10	9.5	163	163		89		8.7		
Total	193.8	188.6	521.5	497.5	2,451	2,878	5,443	4,878	1,448	506.6	288.8	2,403
Mean	6.25	6.29	16.8	16.0	87.5	92.8	181	157	48.3	9.89	9.32	8.00
Max.	14	14	44	95	330	224	378	293	168	14	11	13
Min.	1.9	1.9	8.5	9.0	39	40	78	69	14	8.3	8.7	7.1
Ac-ft	384	374	1,030	987	4,860	5,710	10,800	9,680	2,870	608	573	476

Calendar year 1960 : Max 1,900 Min 1.9 Mean 110 Acre-feet 79,970
 Water year 1960-61 : Max 378 Min 1.9 Mean 53.0 Acre-feet 38,350

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4310. Rubicon River near Georgetown, Calif.

Location.--Lat 38°57'30", long 120°29'05", in SE¹ sec.23, T.13 N., R.13 E., on left bank 1.3 miles downstream from South Fork and 20 miles east of Georgetown.

Drainage area.--198 sq mi.

Records available.--November 1909 to June 1914 (published as "near Quintette"), May 1943 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 3,350 ft (from topographic map). Nov. 21, 1909, to June 8, 1914, at site 0.4 mile upstream at different datum.

Average discharge.--21 years (1910-13, 1943-61), 565 cfs (409,000 acre-ft per year); median of yearly mean discharges, 500 cfs (36,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,560 cfs Feb. 9 (gage height, 7.56 ft); minimum, 11 cfs Oct. 31, Nov. 1-3, Sept. 12-15. 1943-61: Maximum discharge, 51,000 cfs Dec. 23, 1955 (gage height, 18.76 ft in gage well, 21.5 ft (corrected) outside, from floodmarks), from rating curve extended above 11,000 cfs on basis of slope-area measurement at gage height 18.10 ft; minimum, 3.4 cfs Nov. 10-13, 1955.

Remarks.--Records good. Flow regulated, beginning in 1884, by Loon Lake (usable capacity, 8,000 acre-ft) on Gerle Creek, where most of stored water is diverted out of the watershed in Georgetown Divide ditch (see following page). Low summer flows augmented by release from streamflow maintenance dams built in 1950-56 on eight small headwater lakes (total controlled capacity, 1,295 acre-ft).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23 to Nov. 6)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30			
1.1	9.4	3.0	180	1.1	11	3.5	266
1.3	16	3.5	274	1.3	18	4.0	380
1.6	33	4.0	402	1.6	30	5.0	730
2.0	64	5.0	760	2.0	54	6.0	1,230
2.5	112			2.5	104	7.0	2,020
				3.0	176		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	11	220	46	400	165	674	1050	985	98	21	14
2	13	11	333	46	349	221	1040	830	1060	91	21	14
3	13	11	154	46	547	293	1520	860	975	91	20	13
4	13	12	107	44	272	233	1670	870	920	110	20	13
5	12	12	91	*40	193	206	1280	738	905	94	19	12
6	23	12	70	42	174	197	1020	682	925	80	19	13
7	32	15	68	39	163	192	1000	686	880	70	18	13
8	27	17	66	39	151	206	782	766	834	65	18	12
9	22	16	60	38	580	239	842	*975	754	59	18	12
10	19	17	55	37	1,670	*232	778	1,770	694	54	18	12
11	19	18	54	38	1,020	242	766	1,210	698	51	*18	12
12	20	48	50	42	626	244	980	960	578	47	18	11
13	19	79	51	44	410	230	714	950	578	45	22	11
14	18	62	52	44	321	310	726	1,000	600	43	19	11
15	17	48	51	43	355	461	706	1,090	582	40	17	11
16	16	43	50	45	306	348	1,020	1,110	544	38	16	13
17	15	46	142	45	266	348	1,230	1,190	508	35	16	19
18	*15	110	167	46	233	304	1,070	1,360	446	*34	15	53
19	15	124	112	46	199	306	778	1,420	395	31	15	*30
20	15	73	90	46	208	470	600	1,360	368	30	16	25
21	15	59	82	47	232	550	516	1,370	332	29	16	22
22	14	57	85	46	282	540	488	1,310	297	28	15	20
23	14	50	87	46	239	766	488	1,270	272	27	15	18
24	13	42	82	46	214	614	461	1,170	254	26	15	17
25	13	42	77	49	212	491	461	1,240	219	25	15	15
26	13	79	73	73	201	428	558	1,110	205	24	14	15
27	13	69	67	110	179	428	710	834	184	24	14	14
28	13	59	58	88	166	358	875	794	155	24	15	16
29	12	55	55	76		345	1,040	726	130	22	15	16
30	12	54	55	81		395	1,020	670	111	22	14	15
31	11		51	261		540		747		22	15	
Total	500	1,351	2,815	1,779	10,168	10,902	25,813	32,118	16,388	14,79	527	492
Mean	16.1	45.0	90.8	57.4	363	352	860	1,036	546	47.7	17.0	16.4
Max.	32	124	333	261	1,670	766	1,670	1,770	1,060	110	22	53
Min.	11	11	50	37	151	165	461	670	111	22	14	11
Ac-ft	992	2,680	5,580	3,730	20,170	21,620	51,200	63,710	32,510	2,930	1,050	976
Calendar year 1960 :				Max 5,500	Min 10		Mean 426		Acre-feet 309,000			
Water year 1960-61 :				Max 1,770	Min 11		Mean 286		Acre-feet 206,900			

Peak discharge (base, 3,500 cfs).--No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

827

11-4315. Georgetown Divide ditch above Pilot Creek, near Georgetown, Calif.

Location.--Lat 38°56'18", long 120°28'42", in SE $\frac{1}{4}$ sec.26, T.13 N., R.13 E., on left bank 0.7 mile northeast of Uncle Toms Cabin and 20 miles east of Georgetown.

Records available.--May 1910 to November 1913, May 1947 to September 1961. Irrigation seasons only prior to October 1949. Published as Little South Fork ditch at Sawmill, near Quintette 1910-13 and as Georgetown ditch above Pilot Creek near Georgetown 1947-54.

Gage.--Water-stage recorder and wooden control. Altitude of gage is 5,080 ft (from topographic map). Prior to June 10, 1949, staff gage at same site at different datum.

Average discharge.--12 years (1949-61), 6.57 cfs (4,760 acre-ft per year).

Extremes.--1947-61: Maximum daily discharge, 27 cfs Aug. 15-19, 1949, Sept. 30, 1950; no flow for several months in each year.

Remarks.--Records good except those for period of no gage-height record, which are fair. Ditch receives water from Loon Lake (capacity, 8,000 acre-ft) via Gerie Creek, Rubicon River basin, and at times from South Fork Rubicon River, and discharges into Pilot Creek. Flow is then diverted from Pilot Creek, about 8 miles downstream, for domestic and irrigation purposes in vicinity of Georgetown.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18						0	13	13	14	14	14
2	18						0	12	4.5	14	14	15
3	18					(*)	0	4.7	0	14	14	15
4	17						0	4.9	0	14	14	15
5	18						0	11	0	14	14	14
6	21						0	11	.4	14	14	14
7	17						0	12	8.2	14	14	14
8	16						0	12	a 13	15	14	14
9	a 16						0	11	13	15	14	14
10	a 14						0	13	13	15	15	14
11	a 14						0	14	12	15	15	14
12	a 13						0	14	11	14	15	14
13	a 12						0	14	10	15	16	14
14	a 11						0	13	*8.5	15	16	14
15	a 10						0	12	9.6	15	16	14
16	a 9						0	11	11	15	*16	15
17	a 8						0	11	11	*15	16	16
18	*6.9						0	10	11	15	16	15
19	6.4						0	9.8	11	15	15	15
20	8.6						3.1	9.6	11	15	16	*15
21	8.8						7.9	9.3	12	14	15	15
22	4.9						7.4	8.6	12	14	15	15
23	1.4						.3	9.1	12	14	15	15
24	0						0	11	13	14	15	15
25	0						0	11	13	13	15	15
26	0						*8.9	11	13	13	14	15
27	0						11	11	12	14	15	15
28	0						12	11	12	14	15	16
29	0						13	11	14	14	15	15
30	0						13	11	14	14	15	15
31	0							12		14	15	
Total	287.0	0	0	0	0	0	76.6	339.0	298.2	444	462	440
Mean	9.26	0	0	0	0	0	2.55	10.9	9.94	14.3	14.9	14.7
Max.	21	0	0	0	0	0	13	14	14	15	16	16
Min.	0	0	0	0	0	0	0	4.7	0	13	14	14
Ac-ft	569	0	0	0	0	0	152	672	591	881	916	873
Calendar year 1960 :			Max 21		Min 0		Mean 7.13		Acre-feet 5,170			
Water year 1960-61 :			Max 21		Min 0		Mean 6.43		Acre-feet 4,650			

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4318. Pilot Creek above Stumpy Meadows Reservoir, Calif.

Location.--Lat 38°53'41", long 120°34'02", in NE¼NW¼ sec.18, T.12 N., R.13 E., on right bank 2.1 miles upstream from Stumpy Meadows dam, and 12.5 miles east of Georgetown.

Drainage area.--11.7 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,280 ft (from topographic map).

Extremes.--Maximum discharge during year, 66 cfs Dec. 1 (gage height, 2.82 ft); minimum, 3.7 cfs Jan. 15.

Remarks.--Records good except those for periods of ice effect or no gage height record, which are fair. Some inflow above station (see Remarks for Georgetown Divide ditch above Pilot Creek near Georgetown (see preceding page)).

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.85	3.2
2.0	7.3
2.2	14
2.4	25
2.6	41

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	4	2.6	b 5.0	18	8.9	23	32	26	17	18	16
2	18	4.0	21	b 5.0	17	9.6	25	30	21	17	17	16
3	18	5.2	13	b 5.5	16	*9.9	*28	23	12	18	17	16
4	17	5.0	11	b 5.8	13	9.6	27	16	11	18	17	16
5	18	4.7	9.6	*b 5.5	11	9.9	24	24	11	18	16	16
6	22	5.8	8.2	6.1	10	9.6	22	28	11	18	16	16
7	17	6.7	7.9	5.5	9.9	9.6	20	29	14	18	16	16
8	16	5.5	8.2	5.2	*9.6	9.6	18	*28	20	18	16	16
9	16	5.2	7.6	5.2	15	11	16	25	23	18	16	16
10	16	5.2	7.0	5.2	21	11	16	31	22	18	16	16
11	15	6.7	7.0	5.2	21	11	15	36	21	18	16	16
12	15	12	7.0	5.2	18	11	16	38	21	18	16	15
13	15	11	6.7	b 5.2	15	12	15	39	19	18	16	15
14	14	9.9	6.7	5.2	14	13	14	36	*16	18	16	15
15	14	8.2	*6.7	5.2	14	17	13	34	16	18	16	16
16	13	7.6	6.7	5.0	13	16	12	31	18	18	*16	18
17	13	7.6	8.2	5.0	12	16	12	28	18	*18	16	20
18	12	13	8.2	b 5.0	12	16	12	26	18	18	17	18
19	12	9.9	7.9	b 5.0	11	16	11	26	18	18	17	18
20	11	7.9	7.6	b 5.0	11	22	11	25	17	18	16	17
21	10	7.3	7.3	b 5.0	11	23	17	24	18	18	16	16
22	9	7.0	7.3	5.0	11	23	20	23	18	18	16	16
23	8	6.7	7.0	4.7	9.9	27	14	22	18	18	16	16
24	7	6.7	7.0	4.7	9.9	27	12	23	18	18	16	16
25	6	7.0	6.7	5.0	9.6	25	13	24	18	17	16	16
26	5	11	6.7	9.2	9.6	24	*18	23	17	17	16	16
27	4	8.9	6.4	8.6	9.2	26	26	23	16	17	16	15
28	*4	7.9	6.1	7.0	8.9	23	30	22	16	17	16	17
29	4	7.6	b 5.8	7.3	-	23	32	22	17	17	16	16
30	4	7.3	b 5.5	9.2	-	23	32	22	18	17	*16	16
31	4	-	b 5.0	2.5	-	23	-	24	-	17	16	-
Total	375	222.5	263.0	195.7	360.6	515.7	564	837	527	549	503	488
Mean	12.1	7.42	8.48	6.31	12.9	16.6	18.8	27.0	17.6	17.7	16.2	16.3
Max.	22	13	26	25	21	27	32	39	26	18	18	20
Min.	4	4.0	6.1	4.7	8.9	8.9	11	16	11	17	16	15
Ac-ft	744	441	522	388	715	1,020	1,120	1,660	1,070	1,090	998	968

Calendar year 1960:

Max

-

Min

-

Mean

-

Acra-feet

-

Water year 1960-61:

Max

39

Min

4.0

Mean

14.8

Acra-feet

10,720

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Oct. 1 to Nov. 1.

SACRAMENTO RIVER BASIN

829

11-4331. Long Canyon Creek near French Meadows, Calif.

Location.--Lat 39°01'16", long 120°30'53", in SE 1/4 sec. 34, T.14 N., R.13 E., on right bank 75 ft downstream from North Fork Long Canyon, 6 1/2 miles south of French Meadows, and 18 miles east of Foresthill.

Drainage area.--18.0 sq mi.

Records available.--August 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 4,100 ft (from topographic map).

Extremes.--1960: Maximum discharge during period August to September, 0.7 cfs Sept. 10 (gage height, 2.02 ft); minimum, 0.3 cfs Sept. 18, 19, 20-30.

1960-61: Maximum discharge during water year, 102 cfs Feb. 9 (gage height, 4.29 ft), from rating curve extended above 46 cfs; minimum, 0.2 cfs Sept. 4, 5, 7.

Remarks.--Records good except those for period of ice effect, which are fair. No regulation or diversion above station.

Discharge, in cubic feet per second, 1960														
Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	0.4	6	-	0.4	11	-	0.6	16	-	0.4	21	-	0.3
2	-	.4	7	-	.4	12	-	.5	17	-	.4	22	†0.5	.3
3	-	.5	8	-	.4	13	-	.4	18	-	.4	23	-	.3
4	-	.5	9	-	.4	14	-	.4	19	-	.4	24	.6	.3
5	-	.5	10	-	.6	15	-	.4	20	-	.3	25	.6	.3
												30	.4	.3
												31	.4	-
Total.....														11.7
Mean.....														0.39
Max.....														0.6
Min.....														0.3
Runoff in acre-feet.....														23

* Discharge measurement made on this day.

† Result of discharge measurement.

Discharge, in cubic feet per second, water year October 1960 to September 1961													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	0.3	0.7	2.6	b 3.4	1.9	9.6	58	45	22	3.2	1.1	0.6	
2	.4	.7	18	b 3.4	2.2	12	72	41	23	3.1	1.1	.7	
3	.4	.9	8.7	b 3.3	2.7	13	78	38	20	3.2	1.0	.8	
4	.4	.9	6.5	b 3.3	1.6	12	74	34	18	3.1	.9	.5	
5	.4	.9	5.3	*b 3.2	1.2	11	60	32	17	3.0	.9	.3	
6	1.6	1.3	4.4	3.1	1.0	11	52	36	16	2.8	.9	.3	
7	1.5	2.0	4.2	3.1	9.1	11	*46	38	15	2.7	.8	*.4	
8	1.0	1.3	3.8	3.0	8.4	12	39	36	14	2.6	.8	.3	
9	.8	1.1	3.6	3.0	3.8	13	38	33	13	2.5	.7	.4	
10	.8	1.1	3.5	2.9	3.8	*14	36	56	12	2.4	.4	.4	
11	.9	1.8	3.4	2.9	3.1	16	32	56	11	*2.2	.4	.4	
12	.9	3.6	3.3	2.8	2.5	16	35	58	11	2.2	.4	.4	
13	.9	2.6	3.5	2.8	2.1	18	34	57	*9.8	2.1	.4	.4	
14	.8	2.1	3.5	2.8	1.9	25	33	50	8.9	2.1	.4	.4	
15	.7	1.6	3.5	2.8	2.2	34	30	45	8.4	2.0	.4	.4	
16	.7	1.6	3.6	2.8	2.0	28	30	*42	7.6	1.9	.4	.6	
17	.7	1.8	1.3	2.7	1.9	28	*30	38	7.0	1.8	*.5	.9	
18	.7	7.1	8.9	2.7	1.6	25	*28	36	6.5	1.8	.6	.8	
19	*.8	3.7	6.7	2.6	1.5	28	26	36	6.1	1.7	.6	.6	
20	.8	2.4	5.9	2.5	1.6	4.2	25	34	5.6	1.6	.6	.5	
21	.8	2.4	5.5	2.5	1.6	4.3	24	32	5.2	1.6	.6	.5	
22	.7	2.3	5.9	2.5	1.6	4.2	26	30	4.9	1.5	.5	.5	
23	.7	2.0	5.8	2.5	1.4	5.7	25	29	4.6	1.4	.6	.5	
24	.7	2.0	5.2	2.5	1.2	4.7	24	27	4.4	1.4	.6	.5	
25	.7	2.0	4.9	2.6	1.2	4.2	25	26	4.1	1.4	.6	.5	
26	.8	3.8	4.5	4.3	1.1	38	31	24	3.9	1.3	.6	.4	
27	.9	2.6	4.2	4.3	1.0	39	*38	23	3.8	1.2	.7	.4	
28	.9	2.4	3.9	4.7	9.8	36	45	21	3.5	1.2	.8	.6	
29	.8	2.2	3.8	3.8	-	38	47	20	3.4	1.1	.8	.5	
30	.8	2.2	3.7	4.3	-	45	43	19	3.3	1.1	.8	.6	
31	.8	-	3.5	2.3	-	53	-	21	-	1.1	.7	-	
Total	24.1	63.1	190.2	116.1	50.4	858.6	1184	1113	293.0	62.3	20.6	15.1	
Mean	0.78	2.10	6.14	3.75	18.0	27.7	39.5	35.9	9.77	2.01	0.66	0.50	
Max.	1.6	7.1	26	23	38	57	78	58	23	3.2	1.1	0.9	
Min.	0.3	0.7	3.3	2.5	8.4	9.6	24	19	3.3	1.1	0.4	0.3	
Ac-ft	48	125	377	230	1,000	1,700	2,350	2,210	581	124	41	30	

Calendar year 1960 :

Max

Min

Mean

Acres-feet

Acres-feet

Water year 1960-61 :

Max

Min

Mean

Acres-feet

Acres-feet

Peak discharge (base, 150 cfs).--No peak above base.

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

SACRAMENTO RIVER BASIN

11-4332. Rubicon River near Foresthill, Calif.

Location.--Lat 38°59'23", long 120°41'15", in NW 1/4 sec. 7, T.13 N., R.12 E., on right bank 150 ft downstream from Ralston Bridge, 400 ft downstream from Long Canyon, and 7.3 miles southeast of Foresthill.

Drainage area.--312 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,273.34 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 2,800 cfs Feb. 10 (gage height, 9.58 ft); minimum, 17 cfs Sept. 12-17.

1958-61: Maximum discharge, 16,500 cfs Feb. 8, 1960 (gage height, 15.55 ft), from rating curve extended above 3,800 cfs on basis of slope-area measurement of peak flow; minimum, 17 cfs Sept. 12, Dec. 8, 1959, Sept. 12-17, 1961.

Remarks.--Records good. Some regulation by Loon Lake (see Remarks for Rubicon River near Georgetown, p. 826).

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9

Feb. 10 to Sept. 30

3.7	22	3.6	16
4.0	42	4.0	36
4.4	80	4.4	70
4.8	144	4.8	134
5.4	300	5.4	280
6.0	510	6.0	485
7.0	950	7.0	910
		8.0	1,480
		9.0	2,280

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	24	167	67	562	182	784	1220	1080	a104	27	20
2	24	24	627	60	338	215	1.070	1.000	1.100	a100	26	20
3	23	27	279	63	706	325	*1.630	1.000	1.080	a100	26	22
4	22	29	180	68	379	271	1.840	1.020	995	a120	26	19
5	22	26	140	*61	258	245	1.540	874	965	a105	25	18
6	28	27	120	62	220	248	1.180	788	995	a95	24	18
7	42	35	100	63	208	238	1.190	802	960	a85	24	18
8	41	34	100	61	*190	245	930	*888	901	a75	24	18
9	38	34	96	60	328	295	995	1.040	838	a70	24	18
10	33	33	90	58	1.950	292	920	1.900	739	a65	23	18
11	33	38	86	58	1.250	292	834	1.480	744	*60	23	18
12	33	67	83	59	847	298	1.130	1.130	633	55	24	18
13	33	142	81	61	549	274	834	1.150	605	54	24	17
14	33	133	81	61	417	337	865	1.150	617	51	26	17
15	33	88	*83	61	424	597	757	1.220	617	49	25	17
16	31	71	81	61	396	517	1.020	1.230	573	46	23	17
17	30	67	110	62	344	493	1.330	1.290	533	44	23	19
18	29	92	220	62	301	442	1.280	1.390	469	42	22	*33
19	*28	190	154	61	256	414	896	1.550	406	39	22	48
20	28	111	120	62	245	557	694	1.400	375	38	22	35
21	28	85	105	62	262	726	597	1.530	337	36	22	30
22	27	77	100	62	310	*677	597	1.390	301	35	22	27
23	27	74	105	62	289	896	593	1.400	268	34	22	26
24	26	69	104	61	245	842	561	1.250	250	33	21	24
25	26	64	98	63	232	730	545	1.310	228	32	21	23
26	26	139	90	76	232	625	629	1.300	198	31	21	22
27	26	109	86	118	208	633	788	965	188	30	20	20
28	26	92	80	111	195	557	985	892	164	30	20	21
29	26	80	73	96	-	509	1.190	802	140	28	21	22
30	25	92	73	100	-----	525	1.180	752	117	28	21	22
31	24	-----	72	212	-----	665	-----	744	-----	27	21	-----
Total	895	2173	3984	2254	12141	14162	29384	35857	17416	1741	715	665
Mean	28.9	72.4	129	72.7	434	457	979	1,157	581	56.2	23.1	22.2
Max.	42	190	627	212	1,950	896	1,840	1,900	1,100	120	27	48
Min.	22	24	72	58	190	182	545	744	117	27	20	17
Ac-ft	1,780	4,310	7,900	4,470	24,080	28,090	58,280	71,320	34,540	3,450	1,420	1,320

Calendar year 1960: Max 10,100 Min 22 Mean 546 Ac-ft 396,000

Water year 1960-61: Max 1,950 Min 17 Mean 333 Ac-ft 240,800

Peak discharge (base, 5,000 cfs)--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

831

11-4333. Middle Fork American River near Foresthill, Calif.

Location.--Lat 38°59'58", long 120°47'27", near center sec.6, T.13 N., R.11 E., on right bank 800 ft downstream from Josephine Canyon and 2 miles southeast of Foresthill.

Drainage area.--539 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 940 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,560 cfs Feb. 10 (gage height, 11.47 ft); minimum, 37 cfs Sept. 16.

1958-1961: Maximum discharge, 39,000 cfs Feb. 8, 1960 (gage height, 20.12 ft), from rating curve extended above 4,400 cfs on basis of slope-area measurement of peak flow; minimum, that of Sept. 16, 1961.

Remarks.--Records good. Small storage and diversions above station. See Remarks for Rubicon River near Georgetown, p.826.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 9

Feb. 10 to Sept. 30

4.9	40	4.8	32	7.5	690
5.2	67	5.2	67	8.0	1,000
5.5	103	5.5	103	9.0	1,770
6.0	183	6.0	183	10.0	2,700
6.5	303	6.5	298	11.0	3,900
7.0	475	7.0	463		
8.0	970				
9.0	1,680				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	48	425	135	945	402	1540	1990	1530	198	61	46
2	44	48	1170	126	660	422	1960	*1.730	1580	183	60	45
3	45	52	596	124	1070	567	2830	1660	1540	178	59	44
4	44	60	379	126	720	512	*3.040	1680	1420	179	57	44
5	44	54	283	*123	528	493	2.750	1490	1380	191	55	42
6	52	56	235	120	451	*520	2.180	1420	1400	172	54	42
7	72	74	195	122	421	493	2.110	1420	1360	160	55	*41
8	72	*79	185	120	386	485	1.710	1460	1270	148	54	41
9	68	69	176	118	576	585	1.720	1640	1180	142	53	41
10	61	64	165	117	3.150	567	1.620	2.640	1.060	132	5	41
11	61	69	160	114	2.170	585	1.460	2.400	1.060	126	52	40
12	61	146	151	114	1.630	600	1.830	2.010	*0.12	120	52	40
13	61	281	145	114	1.110	562	1.450	2.000	870	114	52	39
14	60	303	143	116	864	657	1.470	1.950	882	109	52	39
15	59	187	145	117	864	1.130	1.300	2.010	864	104	54	39
16	56	140	145	114	816	1.030	1.590	2.000	810	99	51	39
17	54	126	207	116	720	1.020	2.020	*2.020	750	96	50	43
18	53	214	393	116	635	912	2.000	2.150	668	93	49	54
19	53	343	309	114	567	876	1.470	2.340	595	88	50	85
20	53	212	244	114	536	1.160	1.200	2.140	554	84	52	70
21	53	167	210	116	544	1.410	1.050	2.230	508	82	51	61
22	52	150	203	117	595	1.320	1.120	2.060	463	79	50	55
23	51	142	205	116	576	1.690	1.100	2.080	419	78	48	53
24	50	130	201	117	512	1.690	1.010	1.860	394	76	47	52
25	50	124	191	118	493	1.570	972	1.920	361	74	46	48
26	52	318	179	145	485	1.360	1.070	1.900	321	72	46	46
27	53	267	174	207	448	1.410	1.290	1.450	304	*69	46	45
28	52	183	162	207	419	1.260	1.610	1.340	271	67	49	44
29	52	160	151	178	-	1.160	1.910	1.220	239	65	50	46
30	51	155	145	193	-	1.180	1.910	1.150	217	63	49	47
31	49	-	143	472	-	1.360	-	1.150	-	62	48	-
Total	1,682	4,421	7,815	4,366	22,891	28,988	50,292	56,510	25,182	3,503	1,604	1,412
Mean	54.3	147	252	141	818	935	1,676	1,823	839	113	51.7	47.1
Max.	72	343	1,170	472	3,150	1,690	3,040	2,640	1,580	198	61	85
Min.	44	48	143	114	386	402	972	1,150	217	62	46	39
Ac-ft	3,340	8,770	15,500	8,660	45,400	57,500	99,750	112,100	49,950	6,950	3,180	2,800

Calendar year 1960 : Max 24,000 Min 42 Mean 918 Acra-feet 666,700

Water year 1960-61 : Max 3,150 Min 39 Mean 572 Acra-feet 413,900

Peak discharge (base, 6,000 cfs).--No peak above base.

* Discharge measurement made on this day.

11-4335. Middle Fork American River near Auburn, Calif.

Location.--Lat 38°55'05", long 121°00'20", in SE $\frac{1}{4}$ sec. 6, T.12 N., R.9 E., on left bank 0.5 mile upstream from Mountain Quarry Co. plant, 1.9 miles upstream from mouth, and 3.5 miles northeast of Auburn.

Drainage area.--619 sq mi.

Records available.--October 1911 to September 1961. Prior to October 1934, published as "near East Auburn."

Gage.--Water-stage recorder. Datum of gage is 568.5 ft above mean sea level (river-profile survey). Prior to December 1930, staff gages at site half a mile downstream at different datums.

Average discharge.--50 years, 1,347 cfs (975,200 acre-ft per year).

Extremes.--Maximum discharge during year, 4,220 cfs Feb. 10 (gage height, 9.73 ft); minimum, 36 cfs Sept. 15, 16.

1911-61: Maximum discharge, 79,000 cfs Dec. 23, 1955 (gage height, 33.9 ft), from rating curve extended above 32,000 cfs on basis of one float measurement at 68,200 cfs; minimum, 20 cfs Sept. 6, 1931, Sept. 19, 1934.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small storage and diversions above station. See Remarks for Rubicon River near Georgetown, p. 826.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used July 24 to Aug. 14)

0.4	36
1.0	101
2.0	244
3.0	454
5.0	1,140
7.0	2,070
9.0	3,510

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a 4.4	60	* 277	154	*1050	*414	1510	*1960	*1440	223	67	45
2	a 4.4	60	1340	146	728	416	1850	1790	1510	206	a 67	43
3	a 4.5	61	717	135	1060	554	2660	1620	1560	195	g 65	40
4	a 4.5	69	438	137	839	548	*3060	1680	1400	192	g 63	40
5	a 4.5	69	318	141	580	501	2800	1480	1340	201	a 62	41
6	a 5.5	66	273	131	483	554	2230	1350	1350	195	a 60	39
7	a 7.5	73	230	136	438	526	2130	1420	1320	181	a 59	38
8	a 7.5	87	209	135	406	498	1740	1430	1240	172	a 58	38
9	a 7.0	83	201	131	529	574	1660	1570	1170	160	g 56	38
10	a 6.5	77	190	130	2920	598	1600	2390	1060	148	g 54	38
11	*6.5	77	186	128	2330	583	1450	2480	1040	141	*53	38
12	6.6	114	174	127	1950	624	1740	2080	935	135	52	38
13	6.7	262	162	127	1220	583	1540	2020	870	131	52	38
14	6.6	399	160	127	916	627	1440	1940	874	126	*53	38
15	6.6	252	161	131	855	1110	1280	2000	862	120	54	37
16	6.5	174	161	131	893	1140	1530	1990	807	117	56	37
17	6.3	144	182	130	760	1120	1920	2000	756	113	53	40
18	6.2	189	334	131	680	1010	1970	2100	690	109	53	43
19	6.2	336	356	128	611	916	1510	2270	621	100	52	62
20	6.2	267	278	127	562	1080	1210	2180	574	96	54	84
21	6.1	198	244	128	562	1430	1050	2210	537	91	54	75
22	6.1	171	226	130	589	1330	1120	2060	490	89	54	62
23	6.1	158	225	130	618	1680	1140	2050	444	84	52	58
24	6.1	148	225	128	545	1800	1040	1880	409	82	50	54
25	6.1	143	217	132	506	1800	988	1880	385	78	50	53
26	6.3	396	202	148	501	1450	1040	1890	343	77	49	49
27	6.4	362	193	196	472	1470	1230	1480	318	75	49	46
28	6.4	236	182	241	436	1350	1530	1320	292	73	47	45
29	6.3	193	*175	215	—	1200	1860	1200	265	72	49	45
30	6.2	189	161	218	—	1170	1920	1140	*242	70	49	47
31	6.1	—	160	430	—	*1310	—	1110	—	67	*48	—
Total	1889	5113	8557	4759	24039	29966	49748	55970	25144	3919	1694	1389
Mean	60.9	170	276	154	859	967	1,658	1,805	838	126	54.6	46.3
Max.	75	399	1,340	430	2,920	1,800	3,060	2,480	1,560	223	67	84
Min.	44	60	160	127	406	414	988	1,110	242	67	48	37
Ac-ft	3,750	10,140	16,970	9,440	47,680	59,440	98,670	111,000	49,870	7,770	3,360	2,760

Calendar year 1960 : Max 25,300 Min 44 Mean 950 Acre-feet 689,900
 Water year 1960-61 : Max 3,060 Min 37 Mean 581 Acre-feet 420,800

Peak discharge (base 6,500 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

g Computed from once-daily staff-gage readings.

SACRAMENTO RIVER BASIN

833

11-4345. Echo Lake conduit near Phillips, Calif.

Location.--Lat 38°49'52", long 120°02'12", in NW¼ sec.6, T.11 N., R.18 E., on right bank in Berkeley Municipal Camp, 0.5 mile downstream from intake and 2.4 miles northeast of Phillips.

Records available.--August 1923 to November 1961 (diversion seasons only). Monthly discharge only for July 1933, published in WSP 1315-A. Published as Echo Lake flume near Wade prior to 1943 and as Echo Lake conduit near Wade for seasons 1944-53.

Gage.--Water-stage recorder. Altitude of gage is 7,420 ft (from topographic map). Prior to July 16, 1929, staff gage at site 0.4 mile upstream at different datum.

Extremes.--1923-61: Maximum daily discharge, 29 cfs Sept. 15, 17, 18, 1960; no flow most of each year.

Remarks.--Records good. No flow except during diversion season for which discharge is published. Conduit diverts from Echo Lake (capacity, 1,900 acre-ft) in Truckee River basin into basin of South Fork American River for power and irrigation.

Cooperation.--Water-stage-recorder graph and five discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, September to November 1960

								Sept.	Oct.	Nov.	
1								0	22	6.1	
2								0	20	5.9	
3								0	19	5.7	
4								0	17	5.4	
5								0	16	5.3	
6								0	14	4.9	
7								0	5.1	4.9	
8								0	3.8	4.6	
9								0	7.0	4.2	
10								0	9.2	4.1	
11								14	7.4	4.1	
12								28	6.7	4.1	
13								27	6.2	4.0	
14								* 27	6.1	3.6	
15								27	6.2	2.7	
16								27	5.7	2.2	
17								27	5.3	2.2	
18								27	5.9	2.0	
19								26	6.2	1.7	
20								26	4.2	.7	
21								* 24	3.9	0	
22								24	3.9	0	
23								24	2.3	0	
24								24	0	0	
25								24	0	0	
26								23	* 3.2	0	
27								23	8.0	0	
28								24	7.8	0	
29								23	7.4	0	
30								22	6.8	0	
31									6.3		
Total								491	242.6	78.4	
Mean								16.4	7.83	2.61	
Max.								28	22	6.1	
Min.								0	0	0	
Ac-ft								974	481	156	
Calendar year											
Water year											

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4350. Pyramid Creek near Phillips, Calif.

Location (revised).--Lat 38°50'55", long 120°07'40", in N $\frac{1}{2}$ sec. 32, T.12 N., R.17 E., on left bank 0.9 mile southeast of Lake Aloha dam, 1.6 miles east of Pyramid Peak, 3.4 miles northwest of Phillips, and 4.6 miles west of Echo Lake Resort.

Drainage area.--3.73 sq mi (revised).

Records available.--September 1922 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1952, published as Medley Lakes Outlet near Vade and October 1952 to September 1955 as Medley Lakes Outlet near Phillips.

Gage.--Water-stage recorder. Altitude of gage is 8,050 ft, revised (from topographic map).

Average discharge.--39 years, 17.5 cfs (12,670 acre-ft per year).

Extremes.--Maximum discharge during year, 60 cfs June 25 (gage height, 1.91 ft); no flow Oct. 17 to Nov. 3.

1922-61: Maximum discharge, 388 cfs Dec. 8, 1950 (gage height, 4.80 ft), from rating curve extended above 130 cfs; no flow at times in some years.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by Lake Aloha (capacity, 5,000 acre-ft); no contents Sept. 30, 1960, and 306 acre-ft Sept. 30, 1961.

Cooperation.--Water-stage-recorder graph and three discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.2	0	0.7	3.5
.3	.4	.8	5.2
.4	.8	1.0	9.6
.5	1.4	1.3	22
.6	2.2	1.8	51

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	*0	3.5	3.1	2.8	3.5	5.4	6.8	7.9	14	40	19
2	b	0	4.1	3.1	2.8		6.0	6.2	11	14	40	19
3	b	0	3.5	3.1	2.8		7.2	6.6	11	16	*39	19
4	4	1	3.3	2.9	2.7		7.9	6.4	11	17	39	19
5	3	1	3.3	2.9	2.7		6.8	5.8	12	14	39	19
6	3	2	3.3	2.9	2.6		6.0	5.6	14	11	39	19
7	4	3	3.3	b 2.8	2.6		5.6	5.4	14	9.6	38	19
8	3	2	3.3	b 2.8	2.6	b 3.5	5.2	6.6	13	18	37	19
9	2	2	3.3	b 2.8	6.7		5.0	8.1	11	21	37	19
10	2	2	3.3	b 2.8	13		4.8	8.1	11	28	37	19
11	2	5	3.3	b 2.7	7.4		5.6	6.4	10	34	37	18
12	2	1.3	3.3	b 2.6	5.4		6.2	5.6	9.1	34	37	18
13	2	2.2	3.3		4.3		5.0	5.8	9.4	33	37	18
14	2	2.6	3.3		4.0	3.8	4.8	7.6	9.1	37	36	18
15	1	2.6	3.3		3.8	4.4	5.6	8.6	9.1	45	36	17
16	1	2.5	3.3		4.0	4.1	6.8	9.1	8.9	45	36	22
17	0	2.5	3.5		3.8	b 4.0	7.6	* 10	8.4	46	31	20
18	0	3.1	3.2	b 2.5	3.8	b 4.2	6.6	11	11	45	22	18
19	0	2.8	3.2		3.8	4.3	5.0	12	21	44	22	17
20	0	2.7	3.2		3.8	4.4	4.4	14	29	48	21	* 16
21	0	2.7	3.2		3.7	4.1	4.4	13	29	45	21	9.1
22	0	2.7	3.2		3.8	4.4		14	29	45	21	15
23	0	2.6	3.2		3.7	b 4.4		13	32	44	21	16
24	0	2.6	3.2		3.5		b 4.5	13	33	44	20	16
25	0	2.6	3.2		3.7			12	32	43	20	16
26	0	b 3.0	3.1	2.7	3.5			11	49	41	20	15
27	0	b 3.0	3.1	2.7	3.5	b 4.5		9.1	42	40	20	15
28	0	2.9	3.1	2.7	3.5		b 6.0	9.1	25	40	20	15
29	0	2.8	3.1	2.7	-		6.4	8.6	18	40	19	15
30	0	2.8	3.1	2.7			6.8	7.6	* 15	40	19	15
31	0		3.1	2.8		b 5		8.1	40	19		
Total	4.9	51.8	101.7	83.3	114.3	124.1	168.1	274.2	544.9	1035.6	920	519.1
Mean	0.16	1.73	3.28	2.69	4.08	4.00	5.60	8.85	1.82	33.4	29.7	17.3
Max.	0.7	3.1	4.1	3.1	13	5	7.9	14	49	48	40	22
Min.	0	0	3.1	-	2.6	-	4.4	5.4	7.9	9.6	19	9.1
Ac-ft	9.7	103	202	165	227	246	333	544	1,080	2,050	1,820	1,030
Calendar year 1960:				Max 74	Min 0		Mean 13.6		Acra-feet 9,860			
Water year 1960-61:				Max 49	Min 0		Mean 10.8		Acra-feet 7,810			

* Discharge measurement or observation of no flow made on this day.

b Stage-discharge relation affected by ice.

11-4360. Silver Lake Outlet near Kirkwood, Calif.

Location--Lat 38°40'17", long 120°07'18", in SW_{1/4} sec.32, T.10 N., R.17 E., on right bank 1,000 ft downstream from Silver Lake Dam and 3.5 miles southwest of Kirkwood.

Drainage area--14.9 sq mi.

Records available--September 1922 to September 1961. Records for water year 1923 incomplete, yearly estimate published in WSP 1315-A.

Gage--Water-stage recorder. Altitude of gage is 7,200 ft (from topographic map).

Average discharge--39 years, 33.0 cfs (23,890 acre-ft per year).

Extremes--Maximum discharge during year, 177 cfs May 22 (gage height, 2.73 ft); minimum daily, 0.7 cfs Dec. 6, 7, Jan. 20, Apr. 9-14, Aug. 13.

1922-61: Maximum discharge, 676 cfs Nov. 21, 1950 (gage height, 6.03 ft), from rating curve extended above 200 cfs; no flow for many days in February, March 1948, Jan. 13, 14, 1954, Nov. 3, 1959, to Feb. 5, 1960.

Remarks--Records good except those for periods of no gage-height record or ice effect, which are fair. Flow regulated by Silver Lake (capacity, 3,840 acre-ft at spillway level and 8,590 acre-ft with 11 ft of flashboards); contents in Silver Lake, 2,620 acre-ft Sept. 30, 1960, and 1,450 acre-ft Sept. 30, 1961. Some water, in addition to that released through dam and over spillway, escapes from Silver Lake through porous rock formation.

Cooperation--Water-stage-recorder graph and six discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.5	0.2	1.0	14
.6	.9	1.5	52
.7	2.1	2.0	99
.8	4.4	3.0	210
.9	8.5		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	81	b 4.1	1.8	1.2	6.7	19	1.7	19	1.2	1.5	64
2	40	a 13	b 4.5	2.0	1.5	6.7	23	1.7	59	1.6	* 1.6	63
3	39	a 12	b 3.8	1.8	1.6	7.1	26	1.8	76	2.0	1.5	62
4	38	a 10	b 3.5	1.7	1.6	7.1	29	* 2.0	76	1.5	1.3	60
5	38	a 10	b 2.4	1.5	1.6	7.6	33	2.1	101	1.1	1.3	59
6	37	a 9	.7	1.5	1.6	8.1	35	2.1	105	.9	1.3	58
7	37	8.5	.7	1.3	1.6	8.5	37	2.4	97	.8	1.3	55
8	36	7.6	1.3	1.2	1.7	8.5	16	2.6	33	.8	1.6	54
9	34	6.7	2.1	1.2	2.0	8.1	.7	2.4	9.5	.8	1.6	53
10	33	6.2	4.4	1.1	3.0	8.1	.7	2.4	18	.9	1.5	52
11	33	6.2	5.1	1.1	b 3.0	8.1	.7	2.3	38	.9	1.5	50
12	32	6.7	4.4	1.1	b 4.5	8.1	.7	2.3	36	1.0	.8	48
13	30	7.6	3.5	1.1	5.4	8.1	.7	2.3	29	1.3	.7	47
14	29	8.1	3.0	1.1	5.4	b 8.1	.7	2.6	21	1.3	1.3	* 45
15	27	7.1	2.8	1.1	5.8	b 8.5	.8	3.3	9.5	1.2	2.2	44
16	26	6.7	2.6	1.1	6.2	9.5	.9	* 3.5	5.1	1.1	4.2	44
17	25	6.2	2.4	1.0	6.7	10	1.0	3.8	5.1	1.2	5.2	43
18	24	5.8	2.4	1.0	6.2	10	1.2	4.1	4.7	1.5	6.0	42
19	23	5.1	2.3	.8	6.2	10	1.3	5.4	4.4	1.6	6.0	41
20	* 22	5.1	2.1	.7	5.8	10	1.3	1.2	4.1	1.6	5.8	39
21	22	4.7	2.0	.9	5.8	11	1.2	6.8	3.5	1.6	6.4	38
22	21	4.1	2.0	.9	6.2	12	1.3	13.6	2.4	1.6	6.6	37
23	20	3.8	2.0	.9	6.7	15	1.2	13.3	* 2.0	1.6	6.6	36
24	20	3.5	1.8	.8	6.7	18	1.2	12.1	1.5	1.6	7.0	35
25	18	b 2.1	1.8	.8	6.7	18	1.2	11.7	1.3	1.5	7.5	34
26	17	b 2.0	1.8	.9	6.7	18	1.3	11.7	2.1	1.5	7.7	33
27	15	b 3.0	1.5	.9	6.7	18	1.5	10.7	2.4	* 1.5	7.5	32
28	14	b 4.4	1.3	.9	6.7	18	1.7	4.1	2.4	1.5	7.4	31
29	12	4.1	1.7	1.0	—	18	1.7	5.1	1.8	1.6	7.1	30
30	10	3.8	1.7	1.0	—	17	2.0	5.4	1.3	1.6	6.9	29
31	9.0	—	1.7	1.2	—	18	—	9.0	—	1.5	6.6	—
Total	822.0	191.2	77.4	35.4	124.8	347.9	243.0	922.3	771.1	41.4	1,085.8	1,358
Mean	26.5	6.37	2.50	1.14	4.46	11.2	8.10	29.8	25.7	1.34	35.0	45.3
Max.	41	13	5.1	2.0	6.7	18	37	136	105	2.0	7.7	64
Min.	9.0	2.0	0.7	0.7	1.2	6.7	0.7	1.7	1.3	0.8	0.7	29
Ac-ft	1,630	379	154	70	248	690	482	1,830	1,530	82	2,150	2,690

Calendar year 1960: Max 211 Min 0 Mean 17.5 Acre-feet 12,730
 Water year 1960-61: Max 136 Min 0.7 Mean 16.5 Acre-feet 11,940

* Discharge measurement made on this day.

a No gage-height record.

b Stage-discharge relation affected by ice.

SACRAMENTO RIVER BASIN

11-4370. Twin Lakes Outlet near Kirkwood, Calif.

Location.--Lat 38°42'29", long 120°03'00", in SW¼ sec.18, T.10 N., R.18 E., on right bank 500 ft downstream from main dam and outlet gate of Twin Lakes and 1.3 miles east of Kirkwood.

Drainage area.--12.4 sq mi.

Records available.--September 1922 to September 1961. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder and concrete control for outlet, and staff gage with once-daily readings for spillway. Altitude of gage is 7,700 ft (from topographic map).

Average discharge.--39 years, 35.1 cfs (25,410 acre-ft per year), including flow over Twin Lakes spillway.

Extremes.--Maximum combined daily discharge during year for outlet and spillway, 65 cfs Jan. 3; minimum daily, 2.7 cfs Mar. 21, 22.
1922-61: Maximum combined daily discharge for outlet and spillway, 405 cfs Dec. 8, 1950; minimum daily, 0.1 cfs Mar. 25-31, 1944, Nov. 27, 28, 1956.

Remarks.--Records excellent. No diversion. Flow regulated by Twin Lakes (capacity, 19,750 acre-ft at spillway level, 21,580 acre-ft with 3 ft of flashboards), contents of which were 11,200 acre-ft on Sept. 30, 1960, and 13,500 acre-ft on Sept. 30, 1961. No flow over Twin Lakes spillway during the year.

Cooperation.--Water-stage-recorder graph and six discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	45	20	40	14	3.1	3.1	3.4	3.1	17	4.1	13
2	37	44	14	47	14	3.1	3.4	3.1	3.1	30	*4.1	21
3	40	42	15	65	7.5	3.1	3.4	3.1	3.1	35	4.1	21
4	42	39	26	51	3.1	3.1	3.4	3.1	3.1	35	4.1	21
5	42	39	39	40	3.1	3.1	3.4	3.1	3.1	23	4.1	21
6	42	39	39	40	3.1	3.1	3.4	+3.1	3.1	14	4.1	24
7	42	39	39	40	3.1	3.1	3.4	3.1	3.1	14	4.3	26
8	42	39	39	40	3.1	3.1	3.4	3.1	3.1	14	4.4	28
9	42	32	45	40	3.1	3.1	3.4	3.1	3.1	19	4.1	28
10	42	27	55	40	3.1	3.1	3.4	3.1	3.1	31	4.3	28
11	42	28	55	30	3.1	3.1	3.4	3.1	3.1	31	4.5	14
12	41	28	42	24	3.1	3.1	3.4	3.1	3.1	31	4.5	5.7
13	37	28	35	24	3.1	3.1	3.4	3.1	3.1	24	4.5	10
14	35	28	35	24	3.1	3.1	3.4	3.1	3.4	20	4.5	*9.2
15	34	28	35	24	3.1	3.1	3.8	3.4	3.8	20	19	7.5
16	34	28	29	24	3.1	3.1	3.8	+3.4	3.1	20	3.8	8.3
17	37	28	27	24	3.1	3.1	3.8	3.4	3.1	20	3.8	8.3
18	44	28	27	24	3.1	3.1	3.8	3.4	3.1	16	3.4	5.1
19	44	28	27	24	3.1	3.1	3.8	3.4	3.1	12	3.4	3.4
20	*4.7	28	27	24	3.1	3.1	3.8	3.4	3.1	12	3.4	3.4
21	46	26	27	24	3.1	2.7	3.8	3.4	3.1	12	3.4	3.4
22	44	24	27	24	3.1	2.7	3.1	3.4	3.1	12	3.4	6.2
23	44	24	27	24	3.1	3.1	3.1	3.4	*3.1	17	3.4	7.5
24	44	28	27	24	3.1	3.1	3.1	3.4	3.1	25	3.4	7.5
25	44	28	27	19	3.1	3.1	3.1	3.4	3.1	25	5.5	12
26	44	28	27	14	3.1	3.1	3.1	3.4	3.1	28	7.5	19
27	44	28	27	14	3.1	3.1	3.1	3.4	3.1	*3.5	7.5	21
28	42	42	35	14	3.1	3.1	3.4	3.1	3.1	42	7.5	21
29	38	38	40	14	—	3.1	3.8	3.1	3.1	46	7.5	21
30	39	28	40	14	—	3.1	3.8	3.1	4.1	46	7.5	21
31	42	—	40	14	—	3.1	—	3.1	—	44	7.5	—
Total	1,274	959	1,014	888	1,130	953	1,035	1,003	950	770	697.9	445.5
Mean	41.1	32.0	32.7	28.6	4.04	3.07	3.45	3.24	3.17	24.8	22.5	14.9
Max.	47	45	55	65	14	3.1	3.8	3.4	4.1	46	45	28
Min.	34	24	14	14	3.1	2.7	3.1	3.1	3.1	12	3.4	3.4
Ac-ft	2,530	1,900	2,010	1,760	224	189	205	199	188	1,530	1,380	884

Calendar year 1960: Max 96 Min 1.8 Mean 21.3 Acre-feet 15,440
Water year 1960-61: Max 65 Min 2.7 Mean 18.0 Acre-feet 13,000

* Discharge measurement made on this day.

11-4395. South Fork American River near Kyburs, Calif.

Location---Lat 38°45'49", long 120°19'39", in SW¹/₄SW¹/₄ sec.29, T.11 N., R.15 E., on right bank beside U. S. Highway 50, 0.8 mile downstream from Silver Fork of South Fork and 1.9 miles southwest of Kyburs.

Drainage area---196 sq mi.

Records available---August to December 1907, October 1922 to September 1961. Prior to October 1956, records for river and El Dorado Canal published separately.

Gage---Water-stage recorder. Altitude of gage is 3,840 ft (from topographic map).

Average discharge---39 years (1922-61), 389 cfs (281,600 acre-ft per year) combined flow of South Fork American River near Kyburs and El Dorado Canal.

Extremes (river only)---Maximum discharge during year, 935 cfs May 22 (gage height, 3.85 ft); minimum daily, 4.7 cfs Feb. 24, Sept.

20, 21.

1907, 1922-61: Maximum discharge, 14,500 cfs Nov. 21, 1950 (gage height, 9.40 ft), from rating curve extended above 6,500 cfs on basis of contracted-opening measurement of peak flow; minimum daily, 0.3 cfs Nov. 9-11, 1928.

Remarks---Records good except those for periods of ice effect, which are fair. Flow at low and medium stages greatly regulated by four reservoirs since beginning of record (total usable capacity, 37,100 acre-ft). Echo Lake conduit (see p.833) imports up to 2,000 acre-ft each year from Truckee River basin. Records given herein, except extremes, include flow of El Dorado Canal, which diverts 0.5 mile above station, from left bank of South Fork American River in sec.29, T.11 N., R.15 E., for power and irrigation; water is returned to river 20 miles below station.

Cooperation---Water-stage-recorder graph and 12 discharge measurements for river and water-stage-recorder graph and 11 discharge measurements for canal furnished by the Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	113	60	96	64	73	76	240	501	393	105	115	108
2	112	60	112	64	80	88	320	407	489	109	114	114
3	111	67	67	88	108	97	538	438	525	129	112	116
4	114	60	56	103	71	89	582	441	524	145	*112	115
5	111	60	65	79	58	86	501	*356	543	130	111	114
6	118	62	70	82	57	80	477	332	569	112	111	113
7	108	64	73	68	56	82	446	341	552	101	110	114
8	102	60	78	67	55	88	339	419	496	97	114	113
9	102	58	72	66	71	90	352	538	408	98	113	114
10	102	47	82	66	283	88	385	738	387	105	108	114
11	100	54	88	65	250	90	309	561	393	119	114	112
12	97	72	85	*84	173	88	418	482	351	119	115	107
13	93	66	67	82	128	83	297	456	332	122	118	110
14	88	64	65	61	*107	104	302	538	318	110	113	114
15	81	*60	64	80	114	128	328	616	296	112	113	110
16	76	61	64	82	95	114	460	621	271	116	110	150
17	72	60	68	50	91	113	547	648	250	*113	107	181
18	77	72	67	51	87	107	*502	693	233	113	116	129
19	79	68	61	50	b77	112	366	718	216	106	107	*113
20	*79	60	*58	51	83	128	293	819	209	104	106	107
21	*83	60	58	51	88	b157	259	803	198	104	100	99
22	74	54	61	50	104	190	234	889	158	100	109	92
23	72	50	60	81	88	263	238	847	171	98	107	98
24	68	51	60	81	91	213	226	817	164	104	108	99
25	70	56	58	81	87	178	223	828	154	108	111	97
26	69	65	58	58	82	163	260	762	176	105	116	100
27	66	58	54	56	76	155	317	639	154	107	119	105
28	65	54	44	48	75	149	393	574	132	113	124	111
29	59	84	65	47	-	140	480	458	*118	120	124	105
30	56	59	72	47	-	*158	462	414	106	121	116	102
31	55	-	64	59	-	203	-	405	-	119	115	-
Total	2,672	1,826	2,112	1,832	2,808	3,902	11,014	18,099	9,886	3,466	3,488	3,376
Mean	86.2	60.9	68.1	59.1	100	126	367	584	310	112	113	113
Max.	114	84	112	103	283	263	582	889	569	145	124	181
Min.	55	47	44	47	55	76	223	332	106	97	100	92
Ac-ft	5,300	3,620	4,190	3,630	5,570	7,740	21,840	35,900	18,420	6,870	6,920	6,700

Calendar year 1960: Max 1,080 Min 32 Mean 231 Acra-feet 168,000
 Water year 1960-61: Max 889 Min 44 Mean 175 Acra-feet 126,700

Peak discharge (base, 2,000 cfs)---No peak above base.

- * Discharge measurement of river made on this day.
- b Stage-discharge relation affected by ice at river station.
- c Stage-discharge relation indefinite at canal station.

SACRAMENTO RIVER BASIN

11-4400. Alder Creek near White Hall, Calif.

Location.--Lat 38°45'19", long 120°22'17", in NE 1/4 sec. 35, T.11 N., R.14 E., on right bank 0.9 mile upstream from mouth and 2.2 miles southeast of White Hall.

Drainage area.--22.8 sq mi.

Records available.--October 1922 to September 1961 (include diversions by pipeline). Published as "near Whitehall" prior to October 1953.

Gage.--Water-stage recorder. Altitude of gage is 3,840 ft (from topographic map). Prior to July 23, 1924, staff gage at same site and datum.

Average discharge.--39 years, 36.3 cfs (26,280 acre-ft per year), including diversions by pipeline.

Extremes (creek only).--Maximum discharge during year, 42 cfs Apr. 3 (gage height, 1.72 ft); no flow many days.

1922-61: Maximum discharge, 5,500 cfs Dec. 23, 1955 (gage height, 8.40 ft, from floodmarks), from rating curve extended above 500 cfs; no flow at times in several years.

Remarks.--Records fair except those for periods of no gage-height record or ice effect, which are poor. Records, except extremes, include computed flow in feeder pipeline that diverted 1,000 ft above station into El Dorado Canal Oct. 2 to June 14.

Cooperation.--Water-stage-recorder graph, nine discharge measurements on Alder Creek, and readings of head on diversion dam and valve opening to feeder pipeline furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.5	1.5	1.0	1.3		3.4	3.5	1.0	1.7	0.3	0.5
2	.2	.5	9.4	1.0	1.2		4.0	3.4	1.1	1.7	.3	.4
3	.3	.5	7	1.0	1.1	9	5.0	3.1	1.0	1.9	.3	.3
4	.4	.6	5	1.2	1.1		5.4	3.1	1.0	2.1	.3	.3
5	*.4	.6	4	1.5	1.1		4.7	2.7	9	1.9	.3	.3
6	.9	.6	3	1.3	1.0		4.5	3.0	9	1.5	.3	.3
7		.7	2.5	1.1	1.0		4.0	3.1	8.5	1.4	.3	.3
8	.7	.7	2	1.0	1.0	10	3.4	3.2	7.9	1.4	.3	.3
9	.6	.7	1.8	1.0	1.0		3.1	*2.9	7.7	1.2	.3	.3
10	.5	.7	1.5	1.0	1.2		2.8	4.5	7.4	1.0	.3	.3
11		.9		1.0	1.6		2.6	5.2	6.8	1.0	.3	.3
12		1.1		1.0	1.3	11	2.8	5.5	6.2	1.0	.4	.2
13		1.4	1.5	1.0	1.2	11	2.6	5.3	5.5	1.0	.4	.2
14		1.0		1.0	1.1	11	2.6	4.7	4.5	.8	.3	.2
15		*.9		1.0		12	2.5	4.3	4.0	.7	.3	.2
16		.8		1.0		17	2.6	3.8	3.7	.6	.3	.7
17		.8	2.0	1.0	10	20	2.6	3.3	3.4	*.6	.3	1.9
18		.9	2.0	1.0		20	*2.6	3.1	3.4	.5	.3	1.4
19		1.0	1.6	1.0		20	2.3	3.0	3.2	.5	.3	1.0
20	.5	.9	*1.4	1.0		2.5	2.2	2.9	2.9	.5	.3	.8
21		.8	1.3	1.0		3.1	2.0	2.7	2.9	.4	.3	*.7
22		.7	1.2	1.0		3.2	2.1	2.4	2.7	.4	.3	.6
23		.7	1.1	1.0		4.1	2.0	2.3	2.5	.4	.3	.6
24		.8	1.1	1.0	9	3.9	2.1	2.0	2.3	.4	.3	.5
25		.9	1.1	1.0		3.3	2.0	1.5	2.3	.3	.2	.5
26		1.3	1.1	7.0		2.9	2.1	1.3	2.1	.3	.2	.5
27		1.1	1.1	*1.2		2.8	2.6	1.2	2.1	.3	.2	.5
28		1.0	1.1	1.1		2.6	3.1	1.0	1.9	.3	.2	.6
29		1.0	1.0	1.0		2.6	3.4	1.0	*1.9	.3	.4	.6
30		2.1	1.0	9		*3.0	3.3	9	1.9	.3	.8	.6
31			1.0	1.4		3.3		9		.3	.8	
Total	15.6	26.2	79.3	89.1	29.4	59.9	90.4	90.8	156.7	26.7	10.1	15.9
Mean	0.50	0.87	2.56	2.87	10.5	19.3	30.1	29.3	5.22	0.86	0.33	0.53
Max.	0.9	2.1	15	14	16	41	54	55	11	2.1	0.8	1.9
Min.	0.2	0.5	1.0	1.0			20	9	1.9	0.3	0.2	0.2
Ac-ft	31	52	157	177	583	1,190	1,790	1,800	311	53	20	32

Calendar year 1960: Max 501 Min 0.2 Mean 23.6 Acre-feet 17,130
 Water year 1960-61: Max 55 Min 0.2 Mean 8.57 Acre-feet 6,200

Peak discharge (base, 120 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record on creek Oct. 28 to Nov. 1, Nov. 13-25, Dec. 1, 3-25, Jan. 8-31, Mar. 16-19, May 24-31, June 12, 13 and on pipeline Oct. 2-5, Oct. 8 to Nov. 10, Nov. 15-17, 21-24, 30, Dec. 4-22, Jan. 28-31, Feb. 1, 3-9, Feb. 14 to Mar. 15, Mar. 17, 18, May 13 to June 7, June 14. Stage-discharge relation on creek affected by ice Dec. 26 to Jan. 7.

11-4411. Ice House Reservoir near Kyburz, Calif.

Location.--Lat 38°49'26", long 120°21'34", in SE 1/4 sec. 1, T.11 N., R.14 E., on left bank at Ice House Dam on South Fork Silver Creek, 0.5 mile upstream from Peavine Creek and 4.75 miles northwest of Kyburz.

Drainage area.--27.2 sq mi.

Records available.--October 1959 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (datum of Sacramento Municipal Utility District).

Extremes.--Maximum contents during year, 46,100 acre-ft, for several days in May and June (elevation, 5,450.24 ft, from high-water marks); minimum, 16,700 acre-ft Sept. 30 (elevation, 5,398.06 ft).

1959-61: Maximum contents, that of May and June 1961; minimum since appreciable storage was first obtained, that of Sept. 30, 1961.

Remarks.--Records fair. Reservoir is formed by earth-fill dam. Storage began December 15, 1959. Usable capacity, 45,800 acre-ft between elevations 5,327.5 (centerline of fish water outlet) and 5,450.0 ft (top of spillway gates). Dead storage, 160 acre-ft. Records show total contents at 12 p.m.

Note.--Records of contents for 1959-60 have been found in error. Revised records available in files of district office and will be published in a future water-supply paper.

Capacity table (elevation, in feet, and contents, in acre-ft)

5,390	13,500	5,430	32,900
5,400	17,600	5,440	39,200
5,410	22,400	5,450	46,000
5,420	27,400	5,450.3	46,200

Contents, in acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30.200	29.500	29.700	29.900	30.000	31.500	a33.700	39.700	a45.600	45.700	33.700	23.300
2	30.200	29.500	29.800	29.900	30.000	31.500	a33.900	40.100	a45.700	45.200	33.400	23.000
3	30.100	29.400	29.800	29.900	30.100	31.500	a34.000	40.400	a45.800	44.600	33.000	22.600
4	30.100	29.400	29.800	29.900	30.100	31.600	a34.200	40.400	a45.900	44.100	32.600	22.200
5	30.100	29.400	29.800	29.900	30.100	31.600	a34.400	40.600	a46.000	43.700	32.200	21.900
6	30.100	29.400	29.900	29.900	30.200	31.700	34.500	40.700	a46.000	43.400	31.800	21.700
7	30.100	29.400	29.900	29.900	30.200	31.700	34.700	a41.000	a46.000	43.200	31.500	21.400
8	30.000	29.400	29.900	29.900	30.200	31.800	35.000	a41.300	a46.000	42.800	31.200	21.200
9	30.000	29.500	29.900	29.900	30.300	31.800	35.200	a41.600	a46.100	42.500	30.800	20.900
10	30.000	29.500	29.900	29.900	30.600	31.900	35.500	a41.900	a46.100	42.200	30.400	20.600
11	30.000	29.500	29.900	29.900	30.800	31.900	35.600	42.200	a46.100	41.900	a30.100	20.300
12	29.900	29.500	29.900	29.900	30.900	32.000	35.900	42.400	a46.100	41.600	a29.700	20.100
13	29.900	29.500	29.900	29.900	30.900	32.000	36.100	42.600	a46.100	41.300	a29.400	19.800
14	29.900	29.500	29.900	29.900	31.000	32.100	36.300	43.000	a46.100	40.900	a29.000	19.600
15	29.900	29.500	29.900	29.900	31.000	32.100	36.600	43.500	a46.100	40.500	28.700	19.300
16	29.900	29.500	29.900	29.900	31.100	32.100	36.900	43.700	a46.100	40.100	28.300	19.200
17	29.800	29.500	29.900	29.900	31.100	32.200	37.200	44.100	a46.100	39.800	28.000	19.000
18	29.800	29.500	29.900	29.900	31.200	32.200	37.500	44.500	a46.100	39.400	27.800	18.800
19	29.800	29.600	29.900	29.900	31.200	32.300	37.700	44.900	a46.100	39.000	27.500	18.700
20	29.800	29.600	29.900	29.900	31.200	32.300	37.800	45.300	a46.100	38.600	27.200	18.500
21	29.700	29.600	29.900	29.900	31.200	32.400	38.000	a45.800	a46.100	38.200	26.900	18.400
22	29.700	29.600	29.900	29.900	31.300	32.500	38.100	a46.100	a46.100	37.800	26.700	18.400
23	29.700	29.600	29.900	29.900	31.300	32.600	38.300	a46.100	a46.100	37.400	26.500	18.400
24	29.700	29.600	29.900	29.900	31.300	32.600	38.400	a46.000	a46.100	37.000	26.200	18.200
25	29.600	29.600	29.900	29.900	31.400	a32.700	38.500	a45.900	a46.100	36.600	25.900	17.900
26	29.600	29.600	29.900	29.900	31.400	a32.800	38.600	a45.800	a46.100	36.200	25.600	17.600
27	29.600	29.600	29.900	29.900	31.400	a32.900	38.800	a45.700	a46.100	35.800	25.200	17.300
28	29.600	29.700	29.900	29.900	31.400	a33.100	39.000	a45.600	a46.000	35.300	24.900	17.100
29	29.500	29.700	29.900	29.900	-	a33.300	39.200	a45.500	a46.000	34.800	24.400	16.900
30	29.500	29.700	29.900	30.000	-	a33.400	39.500	a45.400	a46.000	34.500	24.100	16.700
31	29.500	-	29.900	30.000	-	a33.600	-	45.500	-	34.100	23.700	-
(†)	5,423.97	5,424.39	5,424.71	5,424.92	5,427.53	-	5,440.38	5,449.40	5,450.09	5,431.97	5,412.55	5,398.06
(‡)	-700	+200	+200	+100	+1,400	+2,200	+5,900	+6,000	+500	-11,900	-10,400	-7,000

Calendar year 1960.....+29,700

Water year 1960-61.....-13,500

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4415. South Fork Silver Creek near Ice House, Calif.

Location.--Lat 38°49'08", long 120°21'51", in NW 1/4 sec. 12, T. 11 N., R. 14 E., on right bank 300 ft upstream from Peavine Creek, 0.4 mile downstream from Ice House Dam, and 4.8 miles northwest of town of Kyburz.

Drainage area.--27.5 sq mi.

Records available.--October 1924 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,290 ft (from topographic map). Prior to Oct. 1, 1959, at site 0.3 mile upstream at different datum.

Average discharge.--37 years, 72.7 cfs (52,630 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 568 cfs May 23 (gage height, 4.42 ft); minimum 3.6 cfs Nov. 1.

1924-61: Maximum discharge, 3,940 cfs Dec. 23, 1955 (gage height, 6.71 ft, site and datum then in use), from rating curve extended above 540 cfs on basis of slope-area measurement at gage height 6.69 ft; no flow Oct. 31 to Nov. 9, 1958.

Remarks.--Records good except those for period of no gage-height record, which are poor. Flow regulated by Ice House Reservoir beginning in December 1959 (see preceding page).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 11-21, 27-31, Sept. 1, 4, 5)

2.3	4.0	3.0	43
2.4	6.4	3.3	79
2.5	9.6	3.6	140
2.6	14	4.0	290
2.8	26		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	7.4	6.7	5.3	5.6	5.6	5.8		65	170	184	157
2	1.0	5.6	6.1	5.3	5.8	5.6	5.8		65	241	184	149
3	1.0	5.1	5.8	5.3	5.8	5.6	5.6		65	258	184	149
4	1.0	5.1	5.6	5.3	5.6	5.6	5.6		101	213	184	180
5	1.0	5.3	5.6	5.3	5.6	5.6	5.6	a 8	128	180	184	152
6	1.1	5.6	5.6	5.3	5.6	5.6	*5.6		128	139	184	111
7	1.1	5.6	5.3	5.3	5.6	5.6	5.6		122	142	180	111
8	1.1	5.3	5.3	5.3	5.6	5.6	5.6		122	155	177	111
9	1.1	5.3	5.3	*5.3	6.1	5.6	5.6		120	155	177	120
10	1.1	5.3	5.3	5.3	5.8	5.6	5.6		113	152	177	146
11	1.1	5.8	5.1	5.3	5.8	5.6	5.6	*a 8	105	155	174	125
12	1.1	5.6	5.1	5.3	5.8	5.6	5.6	a 7	99	161	174	109
13	1.1	5.6	5.1	5.3	5.6	5.6	5.8	a 7	72	161	174	109
14	1.1	5.6	5.1	5.3	5.6	5.8	5.6	a 6	55	174	174	109
15	1.1	5.3	5.1	5.3	5.8	5.8	5.6	a 6	35	180	*174	109
16	1.1	5.3	5.1	5.3	5.6	5.6	5.6	*5.6	47	180	170	99
17	*1.1	5.3	5.3	5.3	5.6	5.6	5.6	5.8	52	180	170	87
18	1.1	5.8	5.3	5.3	5.6	5.8	5.6	5.8	60	*180	170	85
19	1.1	5.6	5.3	5.3	5.6	5.8	5.6	6.1	60	184	170	85
20	1.1	5.6	5.1	5.3	5.6	6.1	5.6	12	58	188	167	*85
21	1.1	5.6	5.1	5.3	5.6	6.1	5.6	15	55	188	122	41
22	1.1	5.3	5.1	5.3	5.6	5.8	5.6	41	*40	188	49	14
23	1.1	5.3	5.1	5.3	5.6	6.1	5.6	*214	22	184	100	14
24	1.1	5.3	5.1	5.3	5.6	5.8	5.6	245	22	188	155	93
25	1.1	5.6	5.3	5.3	5.6	5.8	5.8	245	23	188	155	140
26	1.1	5.8	5.3	5.6	5.6	5.8	a 45	241	23	188	152	140
27	1.1	5.6	5.3	5.6	5.6	5.8	a 10	221	24	188	170	138
28	1.1	5.6	5.3	5.3	5.6	5.8	a 9	191	23	*188	177	113
29	1.1	5.6	5.3	5.3	-	6.1	a 9	164	21	188	177	79
30	1.1	5.6	5.3	5.3	-	6.4	a 8	110	52	188	202	79
31	1.1	-	5.3	5.6	-	5.8	-	65	-	188	217	-
Total	335.6	166.4	165.7	165.2	158.5	178.6	221.8	1901.3	1977	5612	5208	1239
Mean	10.8	5.55	5.35	5.33	5.66	5.76	7.39	61.3	65.9	181	168	108
Max.	11	7.4	6.7	5.6	6.1	6.4	45	245	128	258	217	180
Min.	9.6	5.1	5.1	5.3	5.6	5.6	5.6	5.6	21	139	49	14
Ac-ft	666	330	329	328	314	354	440	3,770	3,920	11,130	10,330	6,420
Meant	-0.55	8.91	8.60	6.96	30.8	41.5	107	159	74.3	-12.5	-1.14	-9.75
Ac-ft†	-34	530	529	428	1,710	2,550	6,340	9,770	4,420	-770	-70	-580
Calendar year 1960 :	Max	21	Min	1.2	Mean	7.25	Ac-ft	5,260	Meant	48.9	Ac-ft†	35,520
Water year 1960-61 :	Max	258	Min	5.1	Mean	53.0	Ac-ft	38,330	Meant	34.3	Ac-ft†	24,820

* Discharge measurement made on this day.

† Adjusted for change in contents in Ice House Reservoir.

a No gage-height record.

Note.--When inflow to Ice House Reservoir is small and other quantities are large, negative figures of adjusted runoff may appear.

SACRAMENTO RIVER BASIN

841

11-4419. Silver Creek below Camino diversion dam, Calif.

Location--Lat 38°49'26", long 120°32'18", on line between secs. 4 and 5, T.11 N., R.13 E., on right bank 300 feet downstream from Round Tent Canyon, 0.4 mile downstream from diversion dam and 5 miles northeast of Pollock Pines.

Drainage area--171 sq mi.

Records available--October 1960 to September 1961.

Gage--Water-stage recorder. Datum of gage is 2,754.06 ft above mean sea level (Bechtel Engineering Co. bench mark).

Extremes--Maximum discharge during year, 1,950 cfs May 23 (gage height, 6.23 ft), from rating curve extended above 710 cfs; minimum, 7.5 cfs June 12.

Remarks--Records fair. Flow regulated by Ice House Reservoir (see p. 839), Junction Reservoir (capacity, 3,250 acre-ft) and one powerplant.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.0	12	4.0	265
2.3	24	4.5	465
2.6	40	5.0	745
3.0	72	5.5	1,140
3.5	138		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	39	110	12	140	140	402	662	656	65	305	177
2	36	36	135	12	149	142	495	638	571	44	287	61
3	36	37	114	13	149	155	712	582	166	173	286	39
4	35	38	105	12	140	140	773	686	158	207	259	95
5	35	35	101	*12	138	142	712	600	483	432	64	170
6	52	36	95	19	120	148	*620	112	650	338	44	170
7	52	48	*92	113	36	149	576	217	647	324	186	178
8	44	46	90	123	34	153	434	468	472	66	278	179
9	41	41	86	122	84	157	442	693	422	48	250	61
10	41	39	84	121	385	*151	402	605	93	214	279	38
11	42	42	82	119	500	166	371	*566	58	308	250	92
12	42	82	73	118	321	184	510	669	324	292	63	169
13	41	95	60	99	220	161	375	394	644	247	42	170
14	41	79	60	38	168	155	*388	712	435	310	226	171
15	40	63	29	37	200	184	359	700	218	67	*220	166
16	39	56	20	37	172	187	465	*693	215	48	254	60
17	39	56	23	37	164	235	535	693	26	243	281	40
18	39	102	21	36	153	211	530	587	25	319	268	83
19	*39	98	21	37	148	220	398	526	223	*314	63	164
20	39	23	18	37	144	290	300	215	196	301	41	161
21	39	15	18	38	144	339	262	204	220	295	186	170
22	39	43	25	38	146	355	259	680	*216	64	281	171
23	39	58	24	38	151	452	256	675	167	45	263	59
24	39	74	25	38	142	429	238	668	22	217	258	39
25	39	71	28	41	140	359	250	758	22	286	283	89
26	40	93	29	73	140	324	322	717	168	305	62	164
27	41	77	27	125	138	347	*460	663	117	315	41	167
28	40	72	22	124	138	304	498	662	97	311	179	166
29	39	70	22	125	-	293	457	662	104	64	274	166
30	39	68	19	125	-	300	520	662	98	45	266	59
31	39	-	12	*149	-	355	-	638	-	212	277	-
Total	1,242	1,732	1,670	2,068	4,704	7,327	13,321	18,007	7,913	6,519	6,316	3,694
Mean	40	57.7	53.9	66.7	168	236	444	581	264	210	204	123
Max.	52	102	135	149	500	452	773	758	656	432	305	179
Min.	35	15	12	12	34	140	238	112	22	44	41	38
Ac-ft	2,460	3,440	3,310	4,100	9,330	14,530	26,420	35,720	15,700	12,930	12,530	7,330

Calendar year 1960:

Max -

Min -

Mean -

Acres-feet -

Water year 1960-61:

Max 773

Min 12

Mean 204

Acres-feet 147,800

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4420. Silver Creek near Placerville, Calif.

Location.--Lat 38°47'30", long 120°35'15", in NE¼ sec.24, T.11 N., R.12 E., on right bank 0.2 mile upstream from mouth and 12 miles northeast of Placerville.

Drainage area.--177 sq mi.

Records available.--October 1921 to September 1961 (discontinued). Records for water year 1922 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder. Altitude of gage is 2,070 ft (from topographic map). Prior to Oct. 19, 1930, at site 400 ft downstream at different datum.

Average discharge.--40 years, 404 cfs (292,500 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 1,850 cfs May 23 (gage height, 5.96 ft); minimum, 15 cfs Jan. 2, 3.
1921-61: Maximum discharge, 27,500 cfs Dec. 23, 1955 (gage height, 14.50 ft), from rating curve extended above 3,900 cfs on basis of slope-area measurement at gage height 14.25 ft; minimum, 5.5 cfs Sept. 18, 1934.

Remarks.--Records good except those for period of doubtful gage-height record, which are fair. Partly regulated by Ice House Reservoir (see p. 839).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	15	3.0	200
1.8	33	3.5	324
2.2	71	4.0	500
2.6	126	4.5	745

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	33	101	17	134	139	383	650	634	60	286	182
2	32	32	137	17	142	142	455	615	556	44	271	61
3	32	31	102	18	144	158	665	559	186	130	265	43
4	32	*33	90	18	132	142	718	665	147	198	243	91
5	32	30	86	*16	128	142	665	633	420	413	61	167
6	46	31	81	21	116	153	572	76	595	326	45	174
7	47	40	78	86	39	153	532	206	602	304	177	175
8	39	41	76	115	33	158	411	426	458	63	255	176
9	37	35	73	112	62	166	433	670	401	46	233	62
10	36	33	69	109	343	*155	383	575	94	102	276	43
11	36	36	69	107	475	172	364	598	55	288	229	86
12	38	67	64	104	324	186	480	596	275	286	58	168
13	36	86	51	99	209	170	360	375	595	236	43	173
14	35	72	49	39	174	160	370	685	436	288	201	177
15	35	55	29	34	194	194	348	670	201	67	227	171
16	34	48	27	34	176	194	444	670	200	46	247	61
17	34	46	25	34	166	251	518	675	30	91	268	45
18	34	78	22	32	151	224	514	579	24	292	259	80
19	34	95	22	34	140	229	390	491	201	301	58	174
20	34	30	20	34	139	288	302	262	183	286	42	171
21	34	18	20	35	139	336	270	132	204	288	170	174
22	34	31	24	35	137	342	275	670	201	68	277	177
23	34	43	23	35	153	429	265	615	160	46	* 252	60
24	34	60	24	36	140	407	248	659	28	182	255	43
25	34	59	26	36	139	357	263	707	22	274	271	87
26	35	84	26	61	139	324	316	695	*152	288	62	171
27	35	68	24	118	137	345	432	631	115	298	43	173
28	35	60	22	113	137	302	490	620	110	298	85	176
29	34	58	22	115	-	288	474	620	96	62	272	171
30	33	57	21	116	-	296	509	620	89	46	274	62
31	33	-	19	140	-	342	-	613	-	200	276	-
Total	1,090	1,490	1,522	1,920	4,542	7,344	12,849	17,258	7,470	5,917	5,981	3,774
Mean	35.2	49.7	49.1	61.9	162	237	428	557	249	191	193	126
Max.	47	95	137	140	475	429	718	707	634	413	286	182
Min.	32	18	19	16	33	139	248	76	22	44	42	43
Ac-ft	2,160	2,960	3,020	3,810	9,010	14,570	25,420	34,230	14,820	11,740	11,860	7,490

Calendar year 1960 :

Max 4,580

Min 18

Mean 243

Acre-feet 176.6

Water year 1960-61 :

Max 718

Min 16

Mean 195

Acre-feet 141,200

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Dec. 18-30.

SACRAMENTO RIVER BASIN

843

11-4435. South Fork American River near Camino, Calif.

Location.--Lat 38°46'20", long 120°42'05", in SE 1/4 sec. 25, T.11 N., R.11 E., on right bank 400 ft upstream from Iowa Canyon Creek, 1.1 miles downstream from intake of American River flume, and 2.8 miles northwest of Camino.

Drainage area.--497 sq mi.

Records available.--October 1922 to September 1961. Monthly discharge only for October 1922, published in WSP 1315-A. Prior to October 1956 records for river and American River flume published separately.

Gage.--Water-stage recorder. Altitude of gage is 1,630 ft (from topographic map). Nov. 1, 1950, to Dec. 5, 1951, staff gage at same site and datum.

Average discharge.--37 years (1922-59, prior to regulation by Ice House Reservoir), 961 cfs (695,700 acre-ft per year), combined flow of South Fork American River near Camino and American River flume.

Extremes (river only).--Maximum discharge during year, 2,320 cfs May 23 (gage height, 7.51 ft); minimum daily, 6.7 cfs Sept. 4. 1922-61: Maximum discharge, 49,800 cfs Dec. 23, 1955 (gage height, 32.6 ft, from floodmarks), from rating curve extended above 24,000 cfs on basis of computation of peak flow over dam; minimum daily, 1.3 cfs Aug. 24, 1931.

Remarks.--Records good. Records of daily discharge given herein include flow of American River flume which diverts 1.1 miles above station, from right bank of South Fork American River in sec. 24, T.11 N., R.11 E., for power development; water is returned to river at Rock Creek powerhouse 5.4 miles below station. Flow partly regulated by five reservoirs (total usable capacity, 82,900 acre-ft). See records for Ice House Reservoir, page 839. Echo Lake conduit (see p. 833) imports up to 2,000 acre-ft each year from Truckee River basin. Water diverted by El Dorado Canal used for power and returned to river above station except for a variable amount up to 40 cfs, May to October, and about 7 cfs for remainder of year, which is used for irrigation and domestic use in vicinity of Placerville.

Cooperation.--Water-stage-recorder graph and eight discharge measurements for river and water-stage-recorder graph and seven discharge measurements for the flume furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission Project.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	94	251	86	316	253	741	1240	1130	196	385	299
2	127	98	600	76	304	265	924	1200	1100	164	398	208
3	127	103	326	81	382	303	1370	1080	779	149	382	140
4	127	108	227	117	296	266	1570	1260	724	368	334	114
5	129	103	202	121	265	274	1480	1130	1040	553	217	235
6	150	101	196	103	249	312	1260	518	1320	464	158	265
7	183	109	187	148	*168	300	1150	640	1310	423	166	279
8	157	114	190	231	123	305	1330	871	1110	241	353	256
9	144	129	205	229	138	358	1370	*1250	918	132	351	221
10	125	118	175	222	646	329	1460	1450	549	178	373	150
11	126	94	203	217	1040	339	748	1430	547	381	355	108
12	127	134	189	210	787	352	996	1210	625	407	215	222
13	123	257	163	192	522	341	813	987	1050	392	146	270
14	118	247	144	131	*411	329	758	1320	898	354	177	273
15	114	182	133	100	386	466	731	1370	564	251	379	* 270
16	112	150	112	100	400	464	915	1390	570	157	338	215
17	103	140	107	100	357	526	1160	1410	335	177	357	181
18	102	181	117	99	331	476	*1130	1340	272	432	379	188
19	117	246	*107	96	290	461	869	1330	415	414	229	279
20	117	145	99	99	299	*572	681	1120	487	404	133	276
21	124	96	94	101	297	657	592	930	439	393	137	266
22	134	97	98	100	307	697	611	1620	423	207	382	268
23	128	109	105	93	312	880	580	1600	369	132	354	219
24	116	130	100	103	292	908	545	1510	251	134	354	135
25	104	137	100	103	278	854	552	1670	183	394	361	103
26	105	275	101	136	277	727	607	1630	400	358	238	211
27	115	212	99	220	265	766	817	1410	305	418	144	274
28	122	*171	90	209	263	697	935	1360	257	406	171	284
29	123	159	79	198	—	618	1120	1170	*386	230	392	284
30	112	169	105	234	—	615	1100	1130	210	160	384	232
31	102	—	102	286	—	689	—	1120	—	189	380	—
Total	3835	4408	5006	4541	10001	15399	28915	38696	19666	9258	9122	6725
Mean	124	147	161	146	357	497	964	1248	632	299	294	224
Max.	183	275	600	286	1,040	908	1,570	1,670	1,320	553	398	299
Min.	102	94	79	76	123	253	545	518	183	132	133	103
Ac-ft	7,610	8,740	9,439	9,010	19,840	30,540	57,350	76,750	37,620	18,360	18,090	13,340

Calendar year 1960: Max 7,340 Min 52 Mean 585 Acre-feet 424,900
 Water year 1960-61: Max 1,670 Min 76 Mean 424 Acre-feet 307,200

* Discharge measurement of river made on this day.

SACRAMENTO RIVER BASIN

11-4455. South Fork American River near Lotus, Calif.

Location.---Lat 38°49'05", long 120°56'45", in SW¹/₄ sec.11, T.11 N., R.9 E., on left bank 0.4 mile downstream from Greenwood Creek, 2.4 miles northwest of Lotus, and 3.3 miles northwest of Colusa.

Drainage area.---678 sq mi.

Records available.---May 1951 to September 1961.

Gage.---Water-stage recorder and thermograph attachment. Altitude of gage is 635 ft (from topographic map).

Extremes.---Maximum discharge during year, 2,190 cfs May 23 (gage height, 7.08 ft); minimum, 102 cfs Dec. 30.

1951-61: Maximum discharge, 71,800 cfs Dec. 23, 1955 (gage height, 21.37 ft); minimum, 75 cfs Jan. 2, 1960.

Maximum stage known since 1862 and prior to beginning of record in May 1951, 20.4 ft Nov. 21, 1950, from floodmarks (discharge, 64,500 cfs, from rating developed in 1955-56).

Remarks.---Records excellent. Flow partly regulated (see Remarks for station near Camino on p. 843). Diversions above station for power, irrigation, and domestic use.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.0	95	5.0	385
4.1	110	5.5	655
4.3	155	6.0	1,030
4.6	240	7.0	2,090

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	122	272	130	475	292	790	1200	1100	204	254	357
2	128	114	827	114	416	292	886	1290	1170	183	369	264
3	130	124	541	107	486	320	1240	1080	886	158	349	180
4	130	132	331	122	398	320	1520	1240	748	259	349	142
5	130	130	268	158	338	303	1440	1170	862	361	324	145
6	132	128	250	135	310	345	1270	727	1260	430	170	247
7	*178	132	*231	135	282	345	1170	700	1240	412	152	261
8	180	135	225	204	192	324	998	714	1060	377	213	268
9	165	150	225	231	274	390	910	1270	902	170	338	258
10	148	150	237	234	582	373	862	1470	681	138	317	183
11	142	132	231	231	1300	357	790	1430	524	244	345	140
12	148	155	237	225	1180	373	934	1280	465	369	331	148
13	142	286	219	216	707	385	966	1220	982	369	186	247
14	138	334	189	198	530	342	776	1140	918	328	142	261
15	132	278	186	142	*455	595	769	1400	535	369	244	268
16	128	201	162	132	577	613	910	1410	496	175	314	261
17	126	180	160	132	445	688	1100	1420	474	158	331	195
18	110	219	168	130	403	631	1140	1420	264	275	345	192
19	126	303	162	126	369	541	942	1230	264	373	345	219
20	128	231	155	126	342	637	734	1300	412	373	183	275
21	130	150	142	130	338	707	643	990	394	*349	135	268
22	142	132	138	130	338	734	720	1410	385	345	210	268
23	148	140	142	126	353	934	762	1560	365	160	345	258
24	140	145	142	126	334	1050	688	1530	328	138	324	175
25	126	165	138	135	320	1230	637	1630	198	216	334	128
26	128	463	138	158	314	934	649	1580	180	345	349	140
27	135	382	138	213	303	942	806	1410	282	361	189	244
28	145	240	132	261	296	902	966	1390	275	365	145	268
29	142	207	120	240	—	741	1160	*1220	240	373	231	275
30	145	216	120	250	—	707	1010	1150	213	180	361	272
31	130	—	145	424	—	*720	—	1100	—	160	349	—
Total	4,268	5,876	6,771	5,421	12,657	18,067	28,188	39,081	18,103	8,717	8,573	6,807
Mean	138	196	218	175	452	583	940	1,261	603	281	277	227
Max.	180	463	827	424	1,300	1,230	1,520	1,630	1,260	430	369	357
Min.	110	114	120	107	192	292	637	700	180	138	135	128
Ac-ft	8,470	11,650	13,430	10,750	25,100	35,840	55,910	77,520	35,910	17,290	17,000	13,500
Calendar year 1960:				Max 7,000	Min 80	Mean 624		Acra-feet 453,200				
Water year 1960-61:				Max 1,630	Min 107	Mean 445		Acra-feet 322,300				

Peak discharge (base, 5,600 cfs).---No peak above base.

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

845

11-4455. South Fork American River near Lotus, Calif.

Temperature (°F) of water, water year October 1960 to September 1961																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	69	66	54	54	46	43	37	36	45	44	46	45	52	50	54	53	56	55	77	72	75	71	71	68
2	69	66	54	54	46	46	36	35	45	45	46	46	54	51	53	51	56	55	78	73	74	71	71	69
3	68	66	54	54	46	45	35	35	46	45	46	46	55	53	54	51	59	56	78	75	74	71	70	67
4	68	66	54	54	45	43	35	35	46	45	46	46	55	54	54	53	63	59	76	72	75	72	71	67
5	68	66	54	54	43	42	35	35	45	44	46	45	55	53	54	51	63	62	74	70	75	72	71	67
6	68	67	54	54	42	39	35	35	44	44	45	45	54	52	52	52	63	61	71	67	80	75	71	68
7	68	65	54	54	39	38	35	35	45	44	46	45	55	53	54	51	63	61	70	65	82	77	69	67
8	67	65	54	53	38	38	35	35	45	45	46	45	54	51	56	53	63	61	71	67	80	77	67	66
9	65	62	53	52	38	38	36	35	46	45	47	45	53	51	55	53	65	61	76	69	80	77	67	66
10	62	60	52	52	38	38	37	36	46	46	47	47	54	51	55	54	66	62	80	72	79	74	69	66
11	60	59	52	52	38	38	37	37	46	46	47	47	54	51	54	52	66	65	78	73	75	71	71	66
12	60	59	52	52	38	38	37	37	46	45	47	47	54	52	52	50	67	64	78	75	75	71	71	66
13	59	57	52	51	38	38	37	37	45	44	48	47	52	49	52	50	67	65	76	73	77	73	70	67
14	57	55	51	50	38	38	37	37	44	44	49	48	52	50	55	51	67	64	76	73	79	73	68	65
15	57	56	50	48	38	38	37	37	44	44	50	49	54	51	55	54	70	66	76	72	76	71	66	65
16	57	54	48	47	40	38	38	37	44	44	50	48	56	53	56	55	73	70	79	73	74	71	66	65
17	57	56	47	46	42	40	39	38	44	44	48	47	56	55	57	55	73	72	80	73	73	68	65	63
18	58	56	46	46	42	42	39	39	44	43	48	47	56	55	58	56	74	71	79	74	70	67	65	63
19	58	56	46	45	42	42	39	38	43	42	47	47	55	53	58	57	76	72	78	75	70	68	66	63
20	58	56	45	45	42	42	39	37	44	42	48	47	53	50	58	56	77	73	76	72	73	67	65	63
21	58	57	46	45	42	42	38	38	45	43	48	47	51	51	57	54	78	73	75	71	79	71	64	64
22	58	57	46	46	42	42	38	38	45	44	49	48	51	47	57	56	77	75	75	72	76	72	64	63
23	57	56	46	45	42	42	39	38	45	44	50	49	47	47	56	55	76	73	79	73	75	72	64	63
24	57	56	45	45	42	42	40	39	45	45	50	49	47	45	57	55	78	75	80	73	73	70	65	63
25	58	56	46	45	42	41	40	40	45	45	49	47	50	47	58	56	78	76	78	73	72	69	67	63
26	57	57	46	46	41	41	41	40	45	44	48	47	52	49	57	57	82	76	77	74	71	67	66	63
27	57	56	46	45	41	41	43	41	46	45	47	46	52	50	57	55	80	76	76	71	71	69	66	63
28	56	54	45	43	41	40	43	43	46	45	46	45	53	51	57	56	77	73	74	70	75	69	65	64
29	54	54	43	43	40	38	43	43	-----	-----	48	45	53	52	57	56	74	70	74	69	73	70	64	63
30	54	54	43	43	38	37	43	43	-----	-----	50	47	54	52	58	57	75	70	75	70	72	70	63	62
31	54	54	-----	-----	37	37	44	43	-----	-----	51	50	-----	-----	57	56	-----	-----	76	70	72	68	-----	-----
Avg	60	59	49	49	41	40	38	38	45	44	48	47	53	51	56	54	70	67	76	72	75	71	67	65

SACRAMENTO RIVER BASIN

11-4462. Folsom Lake near Folsom, Calif.

Location.--Lat 38°42'29", long 121°09'22", in NW¹/₄NE¹/₄ sec.24, T.10 N., R.7 E., 0.7 mile downstream from South Fork American River and 2.3 miles northeast of Folsom.

Drainage area.--1,875 sq mi.

Records available.--February 1955 to September 1961. Prior to October 1959, published as Folsom Reservoir near Folsom.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum contents during year, 930,100 acre-ft June 15 (elevation, 458.87 ft); minimum, 338,000 acre-ft Jan. 30 (elevation, 391.64 ft).

1955-61: Maximum contents, 1,020,500 acre-ft June 3, 1960 (elevation, 466.89 ft); minimum, 156,600 acre-ft Nov. 10, 1955 (elevation, 352.70 ft).

Remarks.--Reservoir is formed by concrete gravity-type dam with rolled-earth wing dams, auxiliary dams, and dikes, completed May 14, 1956; storage began Feb. 25, 1955. Spillway gates installed July 31, 1955; control valves installed July 23, 1956. Usable capacity, 1,000,000 acre-ft between elevations 205.5 (invert of lower tier of river outlets) and 466.0 ft (gross pool elevation) above mean sea-level, practically all of which is available for release. Spillway design flood pool elevation, 475.4 ft (capacity, 1,120,000 acre-ft). Figures given herein represent usable contents. Folsom Lake is one of the storage units in the Central Valley project.

Cooperation.--Record of contents furnished by Bureau of Reclamation.

Capacity table (elevation in feet, and contents, in acre-feet)

390	327,800	430	637,300
400	393,300	440	732,900
410	466,800	450	834,700
420	548,300	460	942,600

Contents, in thousands of acre-ft, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	517.5	501.3	490.4	428.7	343.6	417.9	535.0	707.9	899.5	864.9	635.2	443.6
2	516.5	499.9	495.2	424.9	346.4	419.0	541.5	714.1	903.6	859.1	628.1	440.8
3	515.6	498.7	497.0	421.0	350.1	420.6	551.5	719.6	907.3	852.9	621.6	438.6
4	514.7	497.4	497.3	417.2	352.9	422.3	563.2	725.6	910.2	847.2	614.7	435.6
5	513.9	496.2	496.9	413.4	354.3	423.7	573.8	731.0	913.0	841.6	607.8	432.4
6	513.2	495.0	496.0	409.5	355.0	425.5	582.0	735.4	916.5	836.4	600.5	430.5
7	512.5	494.0	495.1	405.8	355.5	427.2	589.6	739.8	919.7	831.1	592.2	428.6
8	512.0	492.9	494.1	402.1	355.7	428.8	595.9	743.5	922.7	825.1	584.7	426.8
9	511.4	491.8	493.0	398.4	356.8	430.8	601.6	749.0	925.0	818.5	577.5	425.1
10	510.6	490.5	492.0	394.7	366.4	432.9	607.0	757.2	926.5	811.8	569.9	423.3
11	509.9	489.9	490.2	390.8	376.0	434.6	611.8	766.4	927.4	805.1	562.6	421.3
12	509.3	489.5	488.0	387.1	384.6	436.5	617.9	773.5	927.8	798.8	555.3	419.3
13	508.7	490.2	486.0	383.4	389.4	438.2	623.9	780.6	928.8	791.2	547.7	417.4
14	508.1	491.1	483.3	379.6	392.6	440.3	629.6	786.9	929.9	783.5	539.7	415.8
15	507.2	491.1	480.9	375.9	395.4	446.0	633.1	794.1	930.1	775.3	531.8	414.1
16	506.5	490.7	478.4	372.0	398.5	451.5	638.4	801.3	930.0	766.8	526.2	412.5
17	505.8	489.9	475.9	367.9	400.7	457.1	645.2	808.8	929.6	758.1	520.7	410.8
18	505.4	489.9	473.9	363.8	403.0	462.0	652.2	816.3	928.5	749.7	515.4	409.0
19	505.1	490.3	472.0	359.6	405.0	465.8	657.2	824.2	927.4	742.0	509.9	407.3
20	504.8	490.3	470.5	355.3	406.6	469.9	660.8	831.8	925.5	733.3	504.5	405.8
21	504.5	489.8	467.5	353.1	408.1	475.2	663.9	838.9	922.9	724.1	498.8	404.2
22	504.3	489.1	464.4	351.1	409.7	480.3	667.8	845.7	917.7	715.7	493.3	402.6
23	504.0	488.3	461.0	348.8	411.3	486.8	671.6	853.2	911.7	706.6	488.0	401.0
24	503.6	487.6	457.6	346.9	412.6	494.0	675.0	859.9	906.0	697.0	482.6	399.4
25	503.4	488.0	454.1	345.0	413.8	501.6	677.8	867.0	900.1	687.6	477.1	397.5
26	503.2	490.1	450.5	343.5	414.8	507.2	680.7	873.5	894.1	679.7	471.8	395.6
27	502.9	491.2	446.9	341.9	415.9	512.9	684.6	879.3	888.2	672.4	466.4	393.8
28	502.7	491.2	443.2	340.3	416.8	517.9	689.6	884.1	882.2	664.6	460.7	392.2
29	502.6	490.9	439.6	339.3	—	521.9	695.7	888.2	876.4	657.2	456.0	390.6
30	502.4	490.4	435.9	338.0	—	525.8	701.4	892.1	870.7	649.9	451.6	389.0
31	502.2	—	432.3	339.3	—	530.1	—	895.8	—	642.3	447.1	—
(†)	414.46	413.00	405.43	391.84	403.32	417.85	436.78	455.73	453.40	430.54	407.42	399.37
(‡)	-16,200	-11,800	-58,100	-93,000	+77,500	+113,300	+171,300	+194,400	-25,100	-228,400	-195,200	-58,100
(††)	2,760	850	480	230	810	1,580	3,370	4,790	7,450	8,200	5,580	3,640

Calendar year 1960..... * +168,300

Water year 1960-61..... * -129,400

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation, in acre-feet, furnished by Bureau of Reclamation.

11-4465. American River at Fair Oaks, Calif.

Location.--Lat 38°38'08", long 121°13'36", in SE 1/4 sec. 17, T.9 N., R.7 E., on right bank 2,100 ft downstream from Nimbus Dam, 2.4 miles east of Fair Oaks, 8.1 miles downstream from South Fork, and at mile 19.3.

Drainage area.--1,889 sq mi.

Records available.--November 1904 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 77.53 ft above mean sea level. Prior to Nov. 7, 1930, staff gages or water-stage recorders at several sites 2 1/4 miles downstream all at datum 11.74 ft lower. Nov. 7, 1930 to Dec. 31, 1957, at site 2.2 miles downstream at datum 12.74 ft lower.

Average discharge.--57 years, 3,709 cfs (2,685,000 acre-ft per year), adjusted for change in storage, diversions, and evaporation from Folsom Lake since 1955.

Extremes.--Maximum discharge during year, 4,720 cfs July 19 (gage height, 3.83 ft); minimum, 308 cfs June 14.

1904-52 (Prior to regulation by Folsom Lake): Maximum discharge, 180,000 cfs Nov. 21, 1950 (gage height, 31.85 ft, site and datum then in use); minimum, 3.6 cfs Aug. 16, 1924.

1952-61: Maximum discharge, 71,500 cfs (fully regulated) Dec. 24, 1955 (gage height, 20.35 ft, site and datum then in use); minimum, 86 cfs Apr. 7, 1955.

Remarks.--Records good. Flow regulated by Folsom Lake beginning Feb. 25, 1955. Some minor regulation of high flows by temporary pondage during period of construction January 1953 to February 1955. Diurnal fluctuations from Folsom powerplant re-regulated by Nimbus Reservoir (capacity, 2,800 acre-ft between normal operating elevations 118.5 and 125.0 ft) and powerplant. Many diversions above station for irrigation, municipal, and domestic water supply. Diversions of San Juan Suburban Water District, Natomas Water Co., and State of California are made at Folsom Dam. Some inflow from Bear and Yuba River basins.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	524	* 716	1,620	2,660	1,070	* 559	946	* 1,030	1,500	3,170	* 3,630	* 1,980
2	545	964	* 1,620	2,640	* 1,070	559	955	1,040	1,470	3,170	3,650	1,470
3	552	1,040	1,620	* 2,640	* 1,060	566	946	1,040	1,470	* 3,140	3,650	* 1,080
4	559	1,050	1,620	2,640	1,060	566	946	1,040	1,460	2,980	3,650	1,440
5	* 559	1,050	1,620	2,640	1,090	559	955	1,030	1,480	3,010	3,650	1,400
6	552	1,110	1,600	2,640	1,110	531	955	1,030	1,470	3,010	3,770	991
7	552	1,100	1,600	2,640	1,110	559	955	1,050	1,470	3,060	3,770	1,040
8	552	1,100	1,600	2,680	1,110	573	946	1,040	1,470	3,460	3,670	1,020
9	538	1,100	1,590	2,640	1,080	573	946	1,030	1,460	3,430	3,670	1,000
10	524	1,090	1,620	2,640	1,000	573	946	1,030	1,450	3,430	3,670	1,000
11	531	1,090	2,150	2,610	1,000	644	946	1,030	1,460	3,430	3,680	1,000
12	538	1,090	2,150	2,600	1,000	660	946	1,030	1,480	3,460	3,680	982
13	538	1,090	2,170	2,630	1,000	660	946	1,020	1,480	3,940	3,720	982
14	545	* 1,090	2,200	2,660	1,000	660	946	1,020	1,460	3,950	3,760	991
15	545	1,100	2,230	2,640	1,000	668	946	1,030	1,460	4,210	3,720	991
16	531	1,100	2,200	2,610	1,020	660	964	1,040	1,470	4,130	2,760	982
17	531	1,100	2,150	2,610	1,000	660	982	1,070	1,460	4,170	2,770	1,010
18	517	1,110	2,160	2,660	865	660	1,030	1,040	1,460	4,170	* 2,770	991
19	517	1,110	2,170	2,640	748	660	1,050	1,040	1,560	4,210	2,770	973
20	517	1,120	1,910	2,580	756	652	1,050	1,020	2,060	4,420	2,770	982
21	510	1,120	2,580	1,520	* 748	644	1,020	1,040	2,550	4,460	2,790	982
22	510	1,130	2,660	1,510	740	644	1,010	1,050	3,110	4,540	* 2,790	982
23	510	1,130	2,610	1,520	740	644	1,020	1,020	3,460	4,500	* 2,770	982
24	531	1,130	2,660	1,510	740	652	1,030	1,020	3,460	4,420	2,770	973
25	552	1,140	2,660	1,520	732	856	1,030	1,020	3,380	4,380	2,820	964
26	531	1,150	2,660	1,510	700	937	1,020	1,020	3,360	3,860	2,820	964
27	524	1,150	2,660	1,480	636	937	1,020	1,020	3,350	3,860	2,820	964
28	524	1,150	2,640	1,470	668	946	1,020	1,010	3,190	3,860	2,790	964
29	524	1,160	2,660	1,520	-	946	1,010	1,020	3,190	3,590	2,510	973
30	531	1,170	2,680	1,470	-	937	1,010	1,020	3,190	3,630	2,540	973
31	517	-	2,680	1,450	-	937	-	* 1,010	-	3,590	2,450	-
Total	16,531	32,750	66,750	69,180	25,853	21,282	29,492	31,950	62,290	116,640	99,050	32,026
Mean	533	1,092	2,153	2,232	923	687	983	1,031	2,076	3,763	3,195	1,068
Max.	559	1,170	2,680	2,680	1,110	946	1,050	1,070	3,460	4,540	3,770	1,980
Min.	510	716	1,590	1,450	636	531	946	1,010	1,450	2,980	2,450	964
Ac-ft	32,790	64,960	132,400	137,200	51,280	42,210	58,500	63,370	123,600	231,400	196,500	63,520
(†)	5,280	2,770	2,410	2,770	2,550	2,420	3,840	5,320	6,940	8,280	7,390	6,660
Mean‡	401	954	1,255	768	2,380	2,592	3,983	4,357	1,897	317	232	264
Ac-ft§	24,630	56,780	77,190	47,200	132,200	159,400	237,000	267,900	112,900	19,480	14,270	15,720
Calendar year 1960: Max	5,170	Min	510	Mean	2,144	Mean‡	2,515	Ac-ft	1,556,000	Ac-ft§	1,826,000	
Water year 1960-61: Max	4,540	Min	510	Mean	1,654	Mean‡	1,609	Ac-ft	1,198,000	Ac-ft§	1,165,000	

* Discharge measurement made on this day.

† Diversion, in acre-feet, to Natomas Water Co., San Juan Suburban Water District, and to State of California; furnished by Bureau of Reclamation.

‡ Adjusted for change in storage, diversions and evaporation from Folsom Lake.

SACRAMENTO RIVER BASIN

11-4475. Sacramento River at Sacramento, Calif.

Location.--Lat 38°35'20", long 121°30'15", on left bank 1,000 ft upstream from I Street Bridge, in city of Sacramento, and 0.5 mile downstream from American River.

Records available.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to September 1961. Gage heights collected in this vicinity November 1879 to May 1888, December 1890 to September 1961 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is at mean sea level. Prior to Oct. 15, 1912, staff gage in vicinity of I Street Bridge. Oct. 15, 1912 to Nov. 16, 1956, water-stage recorder at various sites in vicinity of I Street Bridge. Prior to Nov. 16, 1956, datum of gages at low-water mark of Oct. 23, 1856, 0.12 ft above mean sea level, and 3.10 ft above datum of Corps of Engineers. Auxiliary water-stage recorder on right bank 10.8 miles downstream, near Freeport.

Average discharge.--13 years (1948-61), 23,020 cfs (16,670,000 acre-ft per year).

Extremes.--Maximum discharge during year, 49,800 cfs Feb. 14 (gage height, 15.89 ft); minimum daily, 6,780 cfs Oct. 23; minimum gage height, 1.64 ft Oct. 15.

1948-61: Maximum discharge, 104,000 cfs Nov. 21, 1950 (gage height 30.14 ft, site and datum then in use); minimum daily, 5,590 cfs July 20, 1949.

Maximum discharge known prior to Nov. 21, 1950, 103,000 cfs Jan. 17, 1909 (gage height, 29.6 ft), from reports of California Department of Water Resources.

Remarks.--Records excellent except those for period of inadequate fall data, which are good. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas. A portion of the flow bypasses station during flood periods through Yolo bypass (see p. 862).

Cooperation.--Records collected and prepared in cooperation with the California Department of Water Resources.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,970	7,930	15,400	12,600	31,700	24,300	26,500	10,100	12,600	9,980	10,900	10,600
2	8,170	8,200	17,300	12,300	40,600	23,900	25,200	10,600	13,700	9,870	11,200	9,810
3	7,890	8,300	28,100	12,300	*43,100	23,300	24,600	*11,400	14,500	9,890	11,200	9,790
4	8,170	8,400	32,600	12,500	*44,900	22,300	24,800	*11,600	15,300	9,640	11,300	9,430
5	7,970	8,400	*31,700	12,700	46,600	21,900	25,200	11,600	15,800	9,560	11,300	9,170
6	*8,010	8,500	27,700	12,900	46,300	21,600	25,500	11,300	14,900	9,640	11,700	9,040
7	*7,970	8,500	23,500	12,700	41,600	21,900	24,800	11,000	14,100	9,600	11,500	9,320
8	8,090	8,600	20,800	12,700	35,500	21,900	23,700	11,700	13,000	9,830	11,600	9,220
9	8,380	8,700	19,300	12,700	30,500	21,900	22,000	11,700	12,100	9,890	11,600	9,500
10	8,050	8,800	17,100	13,300	30,500	22,400	20,900	11,600	11,500	10,100	11,800	9,950
11	8,170	9,000	17,000	13,700	39,800	23,700	19,900	12,000	10,800	10,100	11,900	9,870
12	8,050	9,100	15,100	13,700	45,100	23,700	18,300	13,900	10,600	10,100	11,900	10,100
13	7,930	9,600	*14,500	13,700	48,500	23,200	16,100	14,800	9,870	10,400	12,000	10,300
14	7,720	11,000	*14,000	13,400	*49,500	23,500	17,400	14,800	9,680	10,300	12,300	10,100
15	7,440	13,000	*13,400	13,200	49,100	23,000	16,000	14,700	9,260	10,500	12,300	10,100
16	7,520	15,000	12,900	13,100	49,000	28,000	14,800	13,800	8,750	10,600	11,600	9,980
17	7,400	14,500	12,800	12,800	46,900	32,000	13,800	14,100	8,660	10,700	11,500	10,300
18	7,440	12,500	14,600	12,900	45,400	34,500	13,400	14,000	9,040	10,600	11,400	10,400
19	7,110	12,000	20,500	12,700	42,900	35,400	12,800	14,400	8,390	10,700	11,200	10,100
20	7,110	12,000	23,400	12,600	39,600	34,800	12,300	15,500	8,500	11,000	11,100	10,200
21	7,070	12,500	22,200	11,600	*36,400	34,500	11,300	*15,600	*8,720	11,000	11,100	9,920
22	7,400	12,000	20,700	11,200	34,000	34,300	10,700	15,700	*8,980	11,400	11,400	9,570
23	5,780	11,500	19,800	11,100	31,800	33,500	11,400	15,000	9,440	11,500	*11,300	9,410
24	7,400	10,900	17,700	11,000	30,300	33,600	12,100	14,500	9,620	11,500	*11,200	9,350
25	7,110	10,700	16,800	11,000	28,400	34,700	12,000	14,100	9,830	11,400	*11,300	9,290
26	7,680	11,400	15,900	11,200	26,600	36,400	11,900	13,900	10,100	11,200	11,300	9,220
27	7,440	17,800	15,300	11,800	25,700	36,700	11,000	13,700	10,100	11,300	11,300	9,450
28	7,640	23,900	14,800	12,400	25,100	35,700	10,100	13,100	10,100	11,200	11,300	9,120
29	7,800	*21,000	14,200	14,000	-	34,700	9,980	12,500	10,000	11,200	11,100	8,920
30	7,760	17,300	13,400	14,100	-	32,100	9,460	11,900	10,100	11,100	11,100	9,020
31	7,760	-	12,900	23,100	-	29,000	-	11,800	-	11,100	11,100	-
Total	238,400	351,030	573,400	401,000	1,084,400	824,000	507,940	406,400	328,040	326,900	354,800	290,550
Mean	7,690	11,700	18,500	12,940	38,730	28,460	16,930	13,110	10,930	10,550	11,450	9,685
Max.	8,380	23,900	32,600	23,100	49,500	36,700	26,500	15,700	15,800	11,500	12,300	10,600
Min.	6,780	7,930	12,800	11,000	25,100	21,600	9,460	10,100	8,390	9,560	10,900	8,920
Acyft	472,900	696,300	1,137,000	795,400	2,151,000	1,750,000	1,007,000	806,100	650,700	648,400	703,700	576,300
Calendar year 1960:				Max 69,100	Min 6,780	Mean 16,110	Acre-feet 11,700,000					
Water year 1960-61:				Max 49,500	Min 6,780	Mean 15,740	Acre-feet 11,390,000					

* Discharge measurement made on this day.

Note.--Inadequate fall data Nov. 2-23.

SACRAMENTO RIVER BASIN

849

11-4476. Morrison Creek near Sacramento, Calif.

Location.--Lat 38°29'57", long 121°27'04", in NW 1/4 sec. 32, T.8 N., R.5 E., on right bank 1,100 ft upstream from Florin Road, 1.7 miles upstream from Elder Creek, and 2 miles south of Sacramento city limits.

Drainage area.--40.6 sq mi.

Records available.--July 1959 to September 1961.

Gage.--Water-stage recorder and concrete control since July 10, 1961. Prior to June 29, 1960, at site 1,000 ft downstream at different datum.

Extremes.--Maximum discharge during year, 168 cfs Jan. 31 (gage height, 2.57 ft); minimum, 1.0 cfs Sept. 5.

1959-61: Maximum discharge, 405 cfs Sept. 18, 1959 (gage height, 5.17 ft, site and datum then in use); no flow July 12-16, 1960.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 14, 15, July 10 to Sept. 30)
(Backwater from dam Dec. 1, 2)

1.1	1.1	1.6	32
1.2	3.4	1.8	55
1.3	7.6	2.0	80
1.4	14		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	4.1	3.0	3.7	4.3	4.1	5.7	4.5	6.6	4.5	3.4	*4.1
2	7.1	3.7	2.0	2.3	6.0	4.5	6.1	4.9	7.1	4.5	3.4	3.7
3	5.7	*1.5	1.4	4.5	4.5	4.9	7.1	3.7	7.6	4.5	3.4	3.7
4	7.6	a.7	7.1	6.1	1.8	4.5	6.6	3.7	6.6	a.4	3.4	4.1
5	7.1	a.10	4.9	6.1	1.1	6.1	5.3	3.4	5.3	a.4	3.4	1.8
6	6.6	a.10	4.1	6.6	9.4	6.6	4.5	5.7	4.9	a.4	4.5	3.4
7	6.6	a.7	3.4	6.1	7.6	5.7	5.3	4.9	5.7	a.4	4.0	3.4
8	5.7	a.5	3.7	6.1	6.6	6.1	5.3	4.1	4.9	a.4	7.1	2.8
9	5.3	a.5	4.1	6.6	1.2	6.6	5.3	4.1	4.5	a.4	1.2	2.8
10	4.1	a.5	6.6	6.6	1.1	5.7	4.5	4.1	5.3	*4.5	1.1	3.7
11	3.7	a.10	7.1	6.1	1.2	4.1	4.1	4.9	5.3	4.9	4.9	3.4
12	2.0	a.15	1.1	6.1	1.2	5.3	4.9	3.7	4.5	6.1	4.5	4.9
13	5.5	*a.5.4	5.3	6.1	1.3	5.3	5.3	5.7	5.7	6.6	4.9	4.9
14	4.9	*a.5.2	4.5	6.1	1.1	7.6	5.3	3.7	6.6	5.3	6.1	3.7
15	5.7	1.6	7.1	5.7	9.4	*7.6	4.9	5.3	7.1	5.3	4.9	4.9
16	5.7	9.4	4.9	5.7	8.8	1.7	4.9	4.9	6.6	4.9	4.1	4.5
17	4.5	6.6	6.1	5.3	8.8	2.9	4.1	4.1	6.1	4.1	*3.7	5.3
18	4.1	1.3	5.7	5.3	7.6	1.3	4.9	5.3	5.3	3.7	3.7	4.5
19	4.5	8.8	4.9	4.9	7.1	9.4	4.9	4.1	5.3	4.5	4.1	*3.7
20	5.7	6.1	3.4	5.3	6.6	8.8	5.3	6.1	7.1	4.9	4.1	3.4
21	7.1	a.5	3.4	5.3	6.1	7.6	5.3	4.9	1.0	4.9	4.5	2.8
22	6.1	a.5	*2.8	5.7	3.1	8.8	1.1	*5.3	5.7	5.3	4.5	3.4
23	6.1	a.5	4.5	5.7	*4.5	1.1	1.2	4.9	*2.8	4.5	4.1	3.7
24	4.5	a.5	5.3	8.8	5.7	1.2	7.6	4.1	4.1	4.1	4.1	3.1
25	4.5	a.5.0	3.1	*2.0	5.3	1.1	*3.4	3.4	4.9	4.1	4.1	2.5
26	4.9	a.3.0	4.5	*6.9	4.5	7.6	2.5	3.7	4.1	3.7	3.7	3.1
27	4.5	a.1.0	6.6	*3.6	4.1	1.4	3.1	4.1	4.1	4.5	4.1	4.1
28	4.9	a.6	7.6	1.1	4.5	3.6	4.1	7.1	4.1	4.5	4.5	2.8
29	5.7	a.6	6.6	3.9	-	1.8	2.8	4.9	3.7	3.7	4.9	2.8
30	5.3	*6.1	5.7	5.2	-	1.4	2.8	3.4	4.1	3.7	5.7	3.7
31	4.5	-	5.7	8.0	-	4.9	-	4.1	-	3.7	4.1	-
Total	165.9	390.8	213.7	443.8	357.7	375.2	158.9	140.8	165.7	139.0	149.8	108.7
Mean	5.35	13.0	6.89	14.3	12.8	12.1	5.30	4.54	5.52	4.48	4.83	3.62
Max.	7.6	5.4	3.0	8.0	6.0	7.6	1.2	7.1	1.0	6.6	1.2	5.3
Min.	2.0	3.7	2.8	2.3	3.1	4.1	2.5	3.4	2.8	3.7	3.4	1.8
Ac-ft	329	775	424	889	709	744	315	271	329	276	297	216
Calendar year 1960:				Max 197	Min 0		Mean 9.55		Acres-feet 6,930			
Water year 1960-61:				Max 80	Min 1.8		Mean 7.70		Acres-feet 5,560			

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

11-4485. Adobe Creek near Kelseyville, Calif.

Location.--Lat 38°55'40", long 122°52'45", in SE½ sec.5, T.12 N., R.9 W., on left bank 2.5 miles upstream from Highland Creek and 4.2 miles south of Kelseyville.

Drainage area.--6.39 sq mi.

Records available.--October 1954 to September 1961.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,478.1 ft above mean sea level (levels by Topographic Division).

Average discharge.--7 years, 11.4 cfs (8,250 acre-ft per year).

Extremes.--Maximum discharge during year, 765 cfs Dec. 1 (gage height, 7.40 ft); no flow for several months.
1954-61: Maximum discharge, 1,250 cfs Dec. 21, 1955 (gage height, 8.72 ft); no flow at times in each year.

Remarks.--Records fair above 10 cfs and poor below. Some storage and diversions for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.86	0	4.3	11	5.0	96
3.9	.1	4.4	19	5.5	194
4.0	.6	4.5	29	6.0	320
4.1	2.4	4.7	52	6.5	470
4.2	5.4				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	34.1	2.1	6.1	4.2	5.4	2.8	0.6			
2		0	6.5	1.8	4.0	3.9	5.0	2.6	.6			
3		0	5.9	1.6	2.6	3.9	4.6	2.4	.5			
4		0	0	1.6	1.8	3.9	3.9	2.1	.5			
5		0	0	1.4	1.5	5.0	3.6	2.1	.4			
6		0	0	1.4	1.2	5.4	3.6	2.1	*.5			
7		0	0	1.4	1.0	4.2	3.4	1.8	.5			
8		0	0	1.8	8.5	1.9	3.1	1.6	.4			
9		0	0	1.8	2.7	1.5	3.1	1.8	.4			
10		0	1.7	1.6	2.2	1.2	2.8	2.4	.4			
11		2	0	1.4	1.78	9.5	2.6	2.6	.4			
12		1.5	0	1.2	6.1	7.7	2.6	2.1	.3			
13		2.2	0	1.1	3.7	6.2	2.4	1.6	.2			
14		1.5	0	1.1	2.5	5.9	2.4	1.4	.1			
15		* 1.5	4.8	.5	3.7	9.2	2.1	1.4	0			
16		1.5	7.6	.8	2.6	7.2	1.8	1.2	0			
17		1.5	7.7	.7	2.0	7.4	1.8	1.1	0			
18	(*)	1.5	3.7	.7	1.6	4.5	*1.8	1.1	0			
19		1.5	1.9	.6	1.3	3.2	1.6	1.0	0		(*)	
20		1.5	1.2	.6	1.1	2.3	1.6	1.0	0			
21		1.5	8.3	.5	9.5	1.8	8.8	.5	0			
22		1.5	5.8	.5	8.3	1.5	1.5	.5	0			
23		1.5	4.6	1.4	7.2	1.3	1.3	.8	0			
24		1.5	3.9	.9	6.2	1.3	5.8	.8	0			
25		1.7	3.4	3.8	5.8	1.2	4.2	.8	0			
26		1.2	3.4	3.8	5.4	1.3	3.4	.8	0			
27		1.5	2.8	1.2	5.0	1.2	3.1	.7	0			
28		1.5	2.8	6.7	4.6	8.9	2.8	.7	0			
29		1.5	* 2.6	6.6	—	7.7	3.1	.7	0		(*)	
30		1.7	2.6	9.3	—	7.2	2.8	.7	0			
31		—	2.4	2.60	—	6.2	—	.7	—			
Total	0	55.5	725.2	508.4	715.9	622.9	121.2	44.7	5.8	0	0	0
Mean	0	1.86	23.4	16.4	25.6	20.1	4.04	1.44	0.19	0	0	0
Max.	0	17	34.1	260	178	92	15	2.8	0.6	0	0	0
Min.	0	0	0	0.5	4.6	3.9	1.6	0.7	0	0	0	0
Ac-ft	0	111	1,440	1,010	1,420	1,240	240	82	12	0	0	0

Calendar year 1960:

Max 429

Min 0

Mean 8.14

Acre-feet 5,910

Water year 1960-61:

Max 341

Min 0

Mean 7.67

Acre-feet 5,560

Peak discharge (base, 250 cfs)

* Discharge measurement or observation of no flow made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12- 1	5 a.m.	7.40	765	3-14	8 p.m.	5.87	286
1-31	5 a.m.	7.03	636	3-16	10 p.m.	5.83	276
2-11	5 a.m.	6.11	353				

11-4490. Highland Creek near Kelseyville, Calif.

Location--Lat 38°56'10", long 122°54'25", in NW¹ sec.31, T.13 N., R.9 W., on downstream side of middle pier of Highland Springs Road bridge at Highland Springs, 1.6 miles upstream from mouth, and 4.8 miles southwest of Kelseyville.

Drainage area--12.7 sq mi.

Records available--October 1954 to September 1961.

Gage--Water-stage recorder. Datum of gage is 1,444.46 ft above mean sea level (levels by Topographic Division).

Average discharge--7 years, 20.2 cfs (14,620 acre-ft per year).

Extremes--Maximum discharge during year, 1,800 cfs Dec. 1 (gage height, 10.85 ft); no flow at times.

1954-61: Maximum discharge, 2,280 cfs Feb. 24, 1958 (gage height, 12.19 ft); no flow for many days in each year except 1958.

Remarks--Records fair. No regulation or diversion.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 29-31, Feb. 19 to Mar. 14)

2.0	0	2.5	5.6	5.0	175
2.1	.2	2.7	12	6.0	330
2.2	1.0	3.0	23	7.0	536
2.3	2.2	4.0	75	8.0	830

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.9	5.97	4.1	7.9	8.7	13	5.8	2.1	0.1		
2	0	.9	10.6	3.7	6.2	8.4	12	5.2	2.1	.1		
3	0	.9	3.1	3.5	4.1	8.0	11	4.8	1.8	.1		
4	0	.9	1.6	3.5	3.1	7.8	10	4.7	1.8	.1		
5	0	1.1	10	3.4	2.6	8.0	9.4	4.5	1.8	.1		
6	0	1.4	6.8	3.4	2.4	*11	9.1	4.5	*1.8	.2		
7	0	1.4	5.2	3.5	2.2	8.0	8.7	4.3	1.6	.2		
8	0	1.6	4.7	3.7	2.2	21	7.5	3.7	1.5	.2		
9	0	1.6	3.9	3.5	2.9	17	7.3	4.1	1.4	.1		
10	0	1.6	7.4	3.4	2.8	14	6.3	4.3	1.2	.1		
11	0	2.1	5.4	3.2	2.39	13	6.1	5.0	1.2	.1		
12	0	3.5	4.3	3.1	8.2	11	6.3	4.1	1.2	.1		
13	0	1.4	3.9	3.1	5.4	10	6.1	3.7	1.1	.1		
14	0	2.6	3.7	2.9	3.9	9.5	5.2	3.5	.8	.1		
15	1	*1.4	7.3	2.9	5.4	12.4	5.0	3.5	.7	0		
16	1	1.0	12.0	2.8	3.9	10.0	4.7	3.2	.6	0		
17	1	.9	7.4	2.8	3.1	11.9	4.3	3.1	.4	0	1	
18	*1	1.4	3.7	2.8	2.5	6.2	4.3	2.9	.4	0		
19	1	1.1	2.3	2.6	2.0	4.7	*4.5	2.8	.5	*0		
20	1	1.0	1.8	2.6	1.7	3.5	4.3	2.9	.4	0		
21	2	.9	1.4	2.6	1.5	2.7	1.4	2.9	.4	0		
22	2	.9	1.2	2.6	1.4	2.4	3.1	2.8	.3	0		
23	3	.9	9.4	3.5	1.4	2.2	2.9	2.6	.2	0		
24	4	1.2	8.0	2.9	1.2	2.1	1.3	2.6	.2	0		
25	6	4.2	7.0	6.5	1.1	2.0	9.1	2.5	.2	0		
26	8	3.2	6.3	5.3	1.0	2.0	7.5	2.5	.1	0		
27	.9	7.5	5.8	2.1	9.4	1.9	6.3	2.5	.1	0		
28	.9	4.5	5.2	1.4	9.4	1.7	5.6	2.3	.1	0		
29	.9	4.8	*4.8	7.1	—	1.6	6.3	2.3	.1	0		
30	.9	5.8	4.5	*10.6	—	1.5	5.6	2.3	.1	0		
31	.9	—	4.3	3.18	—	1.4	—	2.1	.1	0		
Total	7.6	194.0	1,231.6	665.6	1,058.8	942.9	272.5	108.0	26.2	1.8	0	0
Mean	0.25	6.47	39.7	21.5	37.8	30.4	9.09	3.48	0.87	0.06	0	0
Max.	0.9	5.8	597	318	239	124	31	5.8	2.1	0.2	0	0
Min.	0	0.9	3.7	2.6	9.4	7.8	4.3	2.1	0.1	0	0	0
Ac-ft	1.5	185	2,440	1,320	2,100	1,870	540	214	52	3.6	0	0

Calendar year 1960: Max 611 Min 0 Mean 14.5 Acres-feet 10,510
Water year 1960-61: Max 597 Min 0 Mean 12.4 Acres-feet 8,940

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	5a.m.	10.85	1,800	3-14	8p.m.	6.81	488
1-31	5a.m.	7.92	806	3-16	10p.m.	6.61	442
2-11	5a.m.	7.22	596				

* Discharge measurement or observation of no flow made on this day.

SACRAMENTO RIVER BASIN

11-4491. Scotts Creek near Lakeport, Calif.

Location.--Lat 39°03'45", long 122°56'50", in SW $\frac{1}{4}$ sec.14, T.14 N., R.10 W., 100 ft downstream from bridge on Hartley Cemetery Road and 0.8 mile northwest of Lakeport.

Drainage area.--52.3 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,420 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,940 cfs Dec. 1 (gage height, 9.43 ft); no flow for several months.

Remarks.--Records good. Small diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	1640	11	331	35	68	20	3.8			
2		0	* 455	10	359	33	60	20	3.6			
3		0	164	9.3	253	31	55	17	3.3			
4		0	66	8.9	174	31	50	15	3.1			
5		0	33	8.7	123	34	46	13	2.9			
6		0	19	8.8	98	71	40	12	2.6			
7		0	14	8.6	77	55	36	13	* 2.5			
8		0	10	10	69	108	33	* 12	2.0			
9		0	7.1	10	325	133	31	10	2.2			
10		0	14	10	220	120	28	11	2.0			
11		0	13	8.4	870	114	26	27	1.8			
12		0	7.8	7.6	429	97	* 27	22	1.3			
13		0	5.5	7.4	300	86	26	17	.9			
14		0	4.4	6.8	* 245	* 304	21	14	.6			
15		0	154	6.5	275	637	19	13	.4			
16		0	491	* 6.0	221	462	18	13	.2			
17		0	435	5.4	175	615	16	12	.1			
18		0	228	4.9	137	363	16	10	.1			
19		0	136	4.5	107	257	16	9.6	0			
20		0	86	3.2	89	192	15	8.8	0			
21		0	64	2.1	75	146	30	8.6	0			
22		0	50	1.9	65	122	59	8.5	0			
23		0	38	3.2	58	110	75	7.7	0			
24		0	33	3.9	52	126	37	6.9	0			
25		0	27	4.2	48	129	28	6.3	0			
26		0	24	139	44	129	21	6.0	0			
27		0	21	60	39	* 122	18	5.7	0			
28		0	* 17	33	37	105	15	5.5	0			
29		0	16	208	-	95	19	4.8	0			
30		1.9	14	254	-	82	21	4.4	0			
31		-	12	891	-	74	-	4.2	-			
Total	0	1.9	4,298.8	1,756.3	5,295	5,018	970	3,580	33.4	0	0	0
Mean	0	0.06	139	56.7	189	162	32.3	11.5	1.11	0	0	0
Max.	0	1.9	1,640	891	870	637	75	27	3.8	0	0	0
Min.	0	0	4.4	1.9	37	31	15	4.2	0	0	0	0
Ac-ft	0	3.8	8,530	3,480	10,500	9,950	1,920	710	66	0	0	0
Calendar year 1960:				Max	-	Min	-	Acres-feet		-		
Water year 1960-61:				Max	1,640	Min	0	Acres-feet		35,160		

* Discharge measurement made on this day.

11-4495. Kelsey Creek near Kelseyville, Calif.

Location.--Lat 38°55'45", long 122°50'35", in SE 1/4 sec. 34, T.13 N., R.9 W., on left bank 1.6 miles downstream from Widow Creek and 3.5 miles south of Kelseyville.

Drainage area.--37.2 sq mi.

Records available.--October 1946 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,475.1 ft above mean sea level (levels by Topographic Division). Prior to July 16, 1955, at site 600 ft upstream at different datum.

Average discharge.--15 years, 68.9 cfs (49,880 acre-ft per year).

Extremes.--Maximum discharge during year, 5,200 cfs Dec. 1 (gage height, 10.89 ft); minimum, 1.9 cfs Sept. 8, 9, 12, 13.

1946-61: Maximum discharge, 8,800 cfs Dec. 21, 1955 (gage height, 12.80 ft), from rating curve extended above 2,600 cfs on basis of computation of peak flow over dam; minimum, 0.5 cfs Sept. 1, 1950, but may have been less during August 1950.

Remarks.--Records good. No storage or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 11, Dec. 9, 12-14, Dec. 27 to Jan. 25, July 2 to Sept. 30)

2.1	1.2	3.4	22	6.0	418
2.3	2.3	4.0	55	7.0	810
2.6	4.4	4.5	96	8.0	1,420
2.8	6.0	5.0	165	9.0	2,350
3.1	11	5.5	276		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.2	4.3	2,070	23	271	38	50	35	14	4.8	2.7	2.4
2	2.1	4.4	454	23	185	36	47	33	15	4.6	2.7	2.3
3	2.2	4.6	144	22	129	35	44	31	14	4.2	2.5	2.2
4	2.4	4.6	90	21	100	34	42	29	13	4.2	2.3	2.2
5	2.9	4.8	66	20	83	39	40	28	13	4.5	2.2	2.1
6	6.0	5.0	52	19	73	*39	38	28	*13	4.5	2.4	2.1
7	5.8	5.4	43	19	65	34	36	28	13	4.2	2.3	2.1
8	5.1	5.3	38	20	61	57	34	26	12	4.1	2.2	2.0
9	4.3	5.4	34	20	107	67	33	25	12	3.8	2.4	2.0
10	4.1	5.4	39	19	95	58	32	27	11	3.6	2.4	2.1
11	3.9	5.8	36	18	667	50	30	30	11	3.4	2.2	2.1
12	4.1	10	30	17	246	44	31	26	10	3.1	2.3	2.0
13	4.1	55	28	16	165	41	30	23	9.6	2.9	2.5	1.9
14	4.0	24	26	16	129	245	28	22	8.8	3.0	2.5	2.1
15	4.0	*13	139	15	145	410	24	21	8.4	2.9	2.6	2.3
16	3.7	11	371	15	120	206	25	21	7.5	2.8	2.5	2.8
17	3.7	9.4	240	14	102	343	24	19	6.8	2.9	2.2	3.5
18	*3.8	11	138	14	88	165	*24	19	6.5	2.7	2.2	3.2
19	4.1	10	98	13	78	133	24	18	6.3	*2.4	2.4	3.1
20	4.1	9.2	77	13	70	113	23	18	6.2	2.4	2.6	3.1
21	4.2	8.6	64	12	64	94	38	18	6.1	2.4	2.6	2.9
22	4.3	8.2	55	12	59	86	110	17	5.0	2.4	2.3	3.1
23	4.2	8.0	47	17	54	80	122	17	5.8	2.5	2.1	3.1
24	4.2	8.4	41	15	50	77	116	16	5.6	2.5	2.1	3.0
25	4.6	120	38	16	47	74	60	16	5.2	2.2	2.1	2.8
26	4.6	167	35	171	44	77	49	16	5.1	2.2	2.3	2.6
27	4.3	44	33	71	41	75	43	15	4.9	2.4	2.6	2.4
28	4.5	26	30	48	40	67	39	15	4.9	2.2	*2.9	2.4
29	4.5	21	*29	180	-----	63	38	14	5.0	2.1	2.9	2.3
30	4.4	130	26	*244	-----	59	38	15	5.1	2.3	2.6	2.2
31	4.3	-----	25	1,070	-----	54	-----	15	-----	2.7	2.5	-----
TOTAL	124.7	748.8	4,636	2,213	3,378	2,993	1,332	681	264.8	97.0	75.1	74.4
MEAN	4.02	25.0	150	71.4	121	96.5	44.4	22.0	8.83	3.13	2.42	2.48
MAX	6.0	167	2,070	1,070	667	410	122	35	15	4.9	2.9	3.5
MIN	2.1	4.3	25	12	40	34	23	14	4.9	2.1	2.1	1.9
AC-FT	247	1,490	9,200	4,390	6,700	5,940	2,640	1,338	128	192	149	148

Calendar year 1960:

Max 2,560

Min 1.4

Mean 58.9

Acre-feet 42,780

Water year 1960-61:

Max 2,070

Min 1.9

Mean 45.5

Acre-feet 32,970

Peak discharge (base, 1,600 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	6a.m.	10.89	5,200	1-31	6a.m.	8.92	2,260

SACRAMENTO RIVER BASIN

11-4500. Clear Lake at Lakeport, Calif.

Location.--Lat 39°02'40", long 122°54'45", in SE₄ sec.24, T.14 N., R.10 W., on private pier at foot of Fourth Street in Lakeport.

Drainage area.--528 sq mi.

Records available.--1874-1900 (incomplete), January 1913 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,318.59 ft above mean sea level, datum of 1929. Prior to July 8, 1947, staff gage and July 8, 1947, to Mar. 17, 1949, water-stage recorder, at municipal wharf at foot of Third Street in Lakeport at same datum.

Extremes.--Maximum daily gage height during year, 7.22 ft Apr. 10; minimum, 1.51 ft Nov. 7-10.

1913-61: Maximum gage height observed, 11.12 ft Jan. 28, 1914; minimum observed, -3.50 ft Sept. 24-27, 1920.

Remarks.--This natural lake is regulated by a concrete overflow at outlet, completed in 1915. Capacity between gage heights 0.00 and 7.56 ft (limits stipulated by court decree of 1920), about 319,000 acre-ft. Water is released down natural channel of Cache Creek from which it is diverted for irrigation (see Cache Creek near Lower Lake, p. 856).

Cooperation.--Daily mean gage-height record furnished by Clear Lake Water Co.

Mean gage height, in feet, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.96	1.57	2.34	3.25	4.13	5.72	7.14	7.13	6.53	5.47	4.16	3.04
2	1.95	1.56	2.48	3.25	4.28	5.72	7.16	7.11	6.51	5.42	4.12	3.02
3	1.92	1.55	2.52	3.25	4.35	5.73	7.18	7.07	6.49	5.38	4.08	2.90
4	1.90	1.54	2.56	3.25	4.41	5.74	7.19	7.06	6.47	5.30	4.05	2.96
5	1.89	1.53	2.59	3.25	4.45	5.75	7.10	7.05	6.42	5.26	4.02	2.94
6	1.87	1.52	2.59	3.26	4.48	5.78	7.19	7.05	6.40	5.22	4.00	2.91
7	1.85	1.51	2.60	3.26	4.51	5.84	7.20	7.05	6.38	5.20	3.98	2.89
8	1.82	1.51	2.62	3.27	4.61	5.86	7.21	7.03	6.34	5.17	3.95	2.86
9	1.80	1.51	2.62	3.28	4.72	5.89	7.20	7.02	6.32	5.14	3.91	2.82
10	1.79	1.51	2.63	3.28	4.79	5.92	7.22	7.00	6.29	5.11	3.87	2.80
11	1.77	1.56	2.63	3.28	5.02	5.95	7.20	6.98	6.26	5.06	3.83	2.78
12	1.76	1.62	2.62	3.29	5.14	5.97	7.20	6.97	6.23	5.02	3.79	2.75
13	1.75	1.65	2.63	3.29	5.25	5.99	7.20	6.95	6.22	4.98	3.74	2.72
14	1.74	1.66	2.68	3.29	5.33	6.10	7.20	6.93	6.19	4.94	3.70	2.69
15	1.74	1.66	2.71	3.30	5.42	6.23	7.20	6.92	6.15	4.89	3.66	2.66
16	1.70	1.66	2.84	3.30	5.47	6.37	7.18	6.90	6.12	4.84	3.62	2.64
17	1.70	1.66	2.96	3.31	5.53	6.52	7.14	6.89	6.08	4.80	3.59	2.63
18	1.69	1.66	3.04	3.31	5.57	6.62	7.10	6.87	6.03	4.76	3.55	2.62
19	1.69	1.66	3.09	3.31	5.60	6.70	7.10	6.85	6.00	4.70	3.53	2.60
20	1.68	1.65	3.13	3.32	5.63	6.75	7.10	6.84	5.97	4.65	3.50	2.57
21	1.68	1.64	3.16	3.32	5.64	6.79	7.11	6.81	5.93	4.62	3.46	2.55
22	1.67	1.64	3.18	3.33	5.66	6.82	7.16	6.78	5.90	4.58	3.42	2.53
23	1.66	1.64	3.20	3.33	5.68	6.85	7.17	6.75	5.86	4.55	3.37	2.52
24	1.66	1.65	3.21	3.33	5.69	6.90	7.18	6.72	5.82	4.50	3.34	2.50
25	1.65	1.76	3.21	3.41	5.70	6.93	7.17	6.69	5.77	4.47	3.29	2.49
26	1.64	1.76	3.23	3.46	5.71	6.98	7.17	6.65	5.72	4.43	3.26	2.48
27	1.62	1.78	3.24	3.49	5.71	7.05	7.16	6.63	5.65	4.39	3.23	2.46
28	1.60	1.79	3.24	3.52	5.72	7.06	7.15	6.60	5.59	4.35	3.20	2.43
29	1.59	1.85	3.24	3.59	-	7.08	7.14	6.58	5.54	4.30	3.17	2.43
30	1.58	1.85	3.24	3.77	-	7.10	7.13	6.56	5.50	4.25	3.14	2.41
31	1.58	-	3.25	3.99	-	7.12	-	6.55	-	4.20	3.09	-

SACRAMENTO RIVER BASIN

855

11-4506. Copsey Creek near Lower Lake, Calif.

Location.--Lat 38°53'21", long 122°35'47", in NE 1/4 sec. 14, T. 12 N., R. 7 W., on left bank 1.7 miles southeast of Lower Lake and 2.5 miles upstream from mouth.

Drainage area.--13.2 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,400 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,260 cfs Jan. 31 (gage height, 9.34 ft); no flow for many days.

Remarks.--Minor diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	21.7	0.7	4.7	4.8	4.9	2.1	0.7	0.2		
2	0	2	* 3.3	.7	* 3.8	4.8	4.8	1.7	.6	.1		
3	0	3	7.1	.7	2.5	4.6	4.3	1.5	.6	0		
4	0	.5	2.0	.7	1.7	3.9	4.0	1.4	.6	0		
5	0	3	.9	.6	1.3	4.3	3.6	1.3	.6	0		
6	0	.5	.6	.6	1.1	4.2	3.3	1.4	.6	* 0		
7	0	.4	.7	.8	9.1	3.6	3.4	1.3	* .5	0		
8	0	3	.6	.8	8.4	7.7	3.0	* 1.2	.5	0		
9	0	3	.6	1.0	2.0	7.5	3.1	1.2	.5	0		
10	0	.4	1.0	1.0	1.7	4.9	2.9	1.2	.5	0		
11	0	.5	1.0	.9	7.4	4.1	2.4	1.2	.3	0		
12	0	.9	.8	.9	3.1	3.6	2.5	1.2	.4	0		
13	0.2	1.4	.8	.9	2.1	3.6	2.8	1.1	.4	0		
14	3	* 4	.8	.8	1.6	* 2.8	2.6	1.0	.4	0		
15	2	3	2.0	.8	3.4	4.1	2.4	1.0	.4	0		
16	2	3	4.9	* .7	2.0	3.7	2.3	.9	.3	0		
17	1	3	3.0	.6	1.5	5.8	2.2	.9	.3	0		
18	1	3	1.0	.6	1.2	2.3	1.8	.8	.3	0		
19	2	3	5.1	.7	1.0	1.8	2.0	.8	.4	0		
20	3	3	3.2	.7	8.7	1.4	1.9	.8	.2	0		
21	3	.4	2.3	.7	7.9	1.2	3.1	.8	.2	0		
22	3	.5	1.5	.7	7.4	1.0	5.3	.8	.2	0		
23	3	.5	1.2	1.0	6.4	9.0	5.9	.7	.1	0		
24	2	.8	1.1	.9	5.7	8.7	6.0	.7	.2	0		
25	2	2.1	1.1	1.4	5.5	7.8	4.6	.7	.2	0		
26	2	4.0	.8	8.0	5.4	8.5	2.9	.7	.2	0		
27	3	.4	.7	2.0	4.8	* 8.2	2.6	.7	.1	0		
28	2	3	.9	9.6	4.6	6.7	2.2	.6	.1	0		
29	2	3	.8	9.6	-	6.2	2.3	.6	.1	0		
30	2	5.7	.7	12.3	-	6.0	2.4	.6	.3	0		
31	2	-	.7	33.6	-	5.1	-	.7	-	0		
Total	4.2	23.4	396.0	697.1	494.9	368.8	97.5	31.6	10.8	0.3	0	0
Mean	0.14	0.78	12.8	22.5	17.7	11.9	3.25	1.02	0.36	0.01	0	0
Max.	0.3	5.7	21.7	33.6	7.4	5.8	6.0	2.1	0.7	0.2	0	0
Min.	0	0.2	0.6	0.6	4.6	3.6	1.8	0.6	0.1	0	0	0
Ac-ft	8.3	46	785	1,380	982	732	193	63	21	0.6	0	0
Calendar year 1960: Max - Min												
Water year 1960-61: Max 33.6 Min 0												
Mean - Acre-feet												
Mean 5.82 Acre-feet 4,210												

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

11-4510. Cache Creek near Lower Lake, Calif.

Location.--Lat 38°55'27", long 122°33'53", in sec.6, T.12 N., R.6 W., on left bank 500 ft downstream from Clear Lake Dam, 1.9 miles downstream from Copsey Creek, and 2.5 miles northeast of Lower Lake. .

Drainage area.--528 sq mi.

Records available.--May 1944 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,280.3 ft above mean sea level (river-profile survey).

Average discharge.--17 years, 305 cfs (220,800 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 528 cfs July 16-18 (gage height, 3.82 ft); minimum, 1.5 cfs Dec. 30 to Jan. 1. 1944-61: Maximum discharge, 8,000 cfs Feb. 24, 1958 (gage height, 9.40 ft); minimum recorded, 0.2 cfs Mar. 15-23, 1950.

Remarks.--Records good. Flow completely regulated by Clear Lake (see p. 854).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.4	1.3	1.0	15	2.5	170
.5	2.4	1.2	25	3.0	270
.6	3.8	1.5	44	3.5	410
.8	8.4	2.0	96	4.0	600

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	109	2.4	1.1	1.6	1.6	2.6	3.8	236	270	413	398	216
2	108	2.4	2.0	1.6	1.6	2.8	3.7	236	262	383	395	212
3	98	2.1	2.0	1.6	1.8	2.8	3.7	236	246	395	389	200
4	84	1.9	1.9	1.6	1.7	3.0	3.7	236	240	413	359	196
5	78	1.9	1.8	1.6	1.7	3.0	3.6	236	240	425	320	210
6	73	2.0	1.7	1.6	1.7	3.1	3.7	236	254	425	292	236
7	70	2.0	*1.7	1.6	1.7	*3.1	3.6	236	*282	419	312	240
8	70	2.6	1.8	1.6	1.7	3.0	3.6	240	288	419	371	216
9	61	3.1	1.8	1.6	1.9	3.1	3.4	258	260	416	434	172
10	55	3.0	1.8	1.6	1.9	3.1	3.2	275	246	419	444	152
11	46	3.0	1.8	1.6	2.1	3.1	5.1	332	282	428	398	152
12	40	3.0	1.8	1.6	2.0	3.2	7.6	338	341	431	353	152
13	40	3.0	1.7	1.7	2.0	3.2	7.7	264	371	428	341	152
14	30	*3.0	1.7	1.7	2.0	3.4	156	248	410	456	356	152
15	23	3.0	1.6	1.6	2.2	3.4	156	254	431	484	371	152
16	23	2.8	1.6	1.6	2.2	3.6	156	278	422	500	380	152
17	23	2.6	1.6	1.6	2.2	3.6	*156	292	416	528	356	150
18	23	2.6	1.6	1.6	2.2	3.6	157	290	434	512	323	130
19	23	2.6	1.7	1.6	2.2	3.7	156	288	480	484	300	115
20	13	2.6	1.7	1.6	2.2	3.7	194	288	500	*460	282	114
21	2.6	2.6	1.7	1.6	2.4	3.8	236	278	488	431	278	114
22	2.5	2.6	1.7	1.6	2.4	3.8	238	275	472	410	300	114
23	2.5	2.6	1.7	1.7	2.5	4.0	238	282	472	416	323	114
24	2.5	2.6	1.8	1.7	2.5	4.0	238	315	472	419	310	114
25	2.5	2.8	1.8	1.7	2.5	4.0	238	332	468	416	288	94
26	2.5	2.6	1.8	1.8	2.5	4.0	238	344	460	416	282	72
27	2.4	2.6	1.8	1.7	2.6	4.2	238	344	464	398	280	71
28	2.4	2.5	1.7	1.7	2.6	4.0	236	320	460	386	*270	71
29	2.4	2.5	1.6	1.7	-	4.0	238	300	456	386	262	71
30	2.2	2.6	*1.5	1.8	-	4.0	236	266	444	389	236	62
31	2.4	-	1.5	*2.1	-	4.0	-	260	-	395	216	-
Total	1116.9	77.6	62.9	51.3	58.6	107.9	3630.7	8.613	11331	11300	10219	4368
Mean	36.0	2.59	2.03	1.65	2.09	3.48	121	278	378	429	330	146
Max.	109	3.1	1.1	2.1	2.6	4.2	238	344	500	528	444	240
Min.	2.2	1.9	1.5	1.6	1.6	2.6	3.2	236	240	383	216	62
Ac-ft	2,220	154	125	102	116	214	7,200	17,080	22,470	26,380	20,270	8,660
Calendar year 1960:			Max	532	Min	1.0	Mean	139	Acra-feet	101,200		
Water year 1960-61:			Max	528	Min	1.5	Mean	145	Acra-feet	105,000		

* Discharge measurement made on this day.

SACRAMENTO RIVER BASIN

857

11-4515. North Fork Cache Creek near Lower Lake, Calif.

Location.--Lat 39°01', long 122°33', in NE $\frac{1}{4}$ sec.31, T.14 N., R.6 W., on right bank 500 ft upstream from Sweet Hollow Creek, 5 miles upstream from mouth, and 7 miles northeast of Lower Lake.

Drainage area.--198 sq mi.

Records available.--July 1930 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 1,035.60 ft above mean sea level, preliminary adjustment of 1929. Prior to June 15, 1939, at datum 1.00 ft higher.

Average discharge.--31 years, 186 cfs (134,700 acre-ft per year); median of yearly mean discharges, 130 cfs (94,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,100 cfs Dec. 1 (gage height, 8.51 ft); minimum, 0.4 cfs Oct. 1.

1930-61: Maximum discharge, 20,300 cfs Dec. 11, 1937 (gage height, 13.98 ft, present datum, from floodmarks), from rating curve extended above 7,200 cfs on basis of slope-area measurement at gage height 13.9 ft for peak of Feb. 28, 1940; no flow at times in 1930-36, 1949-50, 1956-57.

Remarks.--Records good. Several small diversions above station.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	2.0	2 010	51	655	121	176	87	39	6.7	2.0	1.2
2	.7	2.2	443	46	680	116	165	87	38	6.4	2.0	1.1
3	.9	2.5	200	41	515	113	156	83	38	6.2	1.8	1.2
4	1.1	2.7	130	36	390	113	146	77	36	6.4	1.8	1.2
5	1.6	2.3	103	34	322	113	138	74	33	6.4	1.9	1.1
6	1.8	2.7	87	33	272	121	130	73	32	5.9	2.0	1.1
7	2.0	2.7	*79	32	231	*123	123	73	*31	5.2	1.9	1.4
8	2.0	2.5	69	32	208	120	120	70	30	5.7	2.2	1.0
9	1.6	2.5	60	33	533	212	114	68	28	4.0	2.0	1.0
10	1.4	2.5	54	30	478	172	113	69	27	7.0	1.8	.9
11	1.8	3.6	59	28	732	167	108	76	26	4.7	1.9	.8
12	2.0	5.0	48	25	640	158	105	83	24	4.0	2.0	.8
13	2.0	8.9	40	23	505	148	103	77	23	4.5	1.9	1.0
14	2.2	*5.4	36	22	466	150	98	73	21	4.5	1.9	1.2
15	1.8	4.4	36	21	466	471	94	71	19	4.2	1.9	1.4
16	1.4	3.8	197	21	418	366	90	*69	18	4.2	2.0	1.8
17	*1.6	3.8	518	20	366	630	86	63	16	4.2	1.6	2.0
18	1.8	4.6	305	20	310	478	*84	59	15	4.0	1.6	1.9
19	1.8	3.6	192	19	269	402	84	57	14	*4.0	1.9	1.6
20	1.8	4.0	142	18	234	378	81	55	14	3.8	1.9	1.5
21	1.8	5.9	119	18	210	322	84	53	13	3.5	1.6	1.6
22	1.8	6.4	104	18	190	283	127	50	11	3.3	1.5	1.6
23	1.8	6.6	95	22	172	262	132	48	11	2.9	1.5	1.7
24	2.0	7.2	89	22	161	252	123	46	11	3.1	1.5	1.7
25	1.8	12	83	29	150	246	121	44	9.6	2.8	1.5	1.6
26	1.6	109	76	160	140	262	113	41	8.9	2.8	1.6	1.5
27	1.4	47	74	130	132	266	105	40	8.2	2.4	1.9	1.5
28	1.6	28	68	95	125	240	98	40	8.2	2.2	1.8	1.5
29	1.6	23	64	356	-	220	92	40	7.9	2.3	*1.5	1.4
30	1.6	34	*59	436	-	205	92	40	7.6	2.2	1.5	1.4
31	1.8	-	56	*1600	-	186	-	41	-	2.2	1.5	-
Total	50.6	350.8	5695	3471	9970	7416	3401	1927	618.4	131.7	55.4	40.7
Mean	1.63	11.7	184	112	356	239	113	62.2	20.6	4.25	1.79	1.36
Max.	22	109	2,010	1,600	732	630	176	87	39	7.0	2.0	2.0
Min.	0.5	2.0	36	18	125	113	81	40	7.6	2.2	1.5	0.8
Ac-ft	100	696	11,300	6,840	19,780	14,710	6,750	3,820	1,230	261	110	81

Calendar year 1960 :

Max 6,860

Min 0.4

Mean 138

Acre-feet 100,300

Water year 1960-61 :

Max 2,010

Min 0.5

Mean 90.8

Acre-feet 65,720

Peak discharge (base, 3,500 cfs).--Dec. 1 (10:30 a.m.) 5,100 cfs (8.51 ft).

* Discharge measurement made on this day.

11-4517.2. Bear Creek near Rumsey, Calif.

Location.--Lat 39°56'35", long 122°20'40", in NE¼SW¼ sec.30, T.13 N., R.4 W., on left bank 0.3 mile downstream from Brophy Canyon, 1.4 miles upstream from mouth, and 7.3 miles northwest of Rumsey.

Drainage area.--96.8 sq mi.

Records available.--October 1958 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,360 cfs Dec. 1 (gage height, 6.85 ft); minimum, 0.2 cfs July 21.

1958-61: Maximum discharge, 5,340 cfs Feb. 16, 1959 (gage height, 9.42 ft), from rating curve extended above 2,300 cfs; no flow July 25, 26, Aug. 20, 1960.

Maximum stage since 1955, 12.33 ft Feb. 24, 1958 (discharge, about 8,100 cfs).

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	1.2	* 5 63	4.6	a 128	16	15	7.3	3.2	0.9	0.6	0.7
2	1.3	1.4	117	4.3	a 206	16	15	7.2	3.3	.8	.7	.7
3	1.3	1.8	36	4.3	a 114	16	14	6.9	3.0	.8	.7	.5
4	1.2	2.2	16	4.1	a 61	16	14	7.0	2.6	.7	.6	.5
5	1.3	1.9	9.6	4.4	a 45	16	13	* 6.4	2.2	.7	.5	.5
6	1.8	1.8	6.6	4.1	* 38	16	* 12	6.0	2.0	*.8	.5	.7
7	1.9	2.0	5.4	4.4	36	* 15	12	6.4	* 2.0	.9	.6	.8
8	1.4	1.8	4.7	4.4	31	15	12	6.0	2.0	.9	.7	*.9
9	1.2	1.6	4.3	4.5	78	20	12	5.6	1.9	.8	.8	1.0
10	1.0	1.6	4.1	4.6	76	16	12	6.6	1.8	.8	.8	1.0
11	1.1	1.9	4.4	* 4.2	162	14	11	6.5	1.7	.7	.6	1.0
12	1.3	3.2	3.6	4.0	91	14	11	6.2	1.8	.6	.6	.9
13	1.2	7.5	* 2.9	4.2	55	14	11	5.5	2.0	.5	.6	.9
14	1.3	* 8.5	2.6	4.0	47	18	9.9	5.6	1.7	.5	.5	.9
15	1.2	3.8	2.5	4.4	47	50	9.5	5.3	1.6	.5	.5	1.0
16	1.1	2.6	3.6	4.2	42	34	9.4	5.2	1.6	.5	.5	1.4
17	1.0	2.3	25	4.4	35	77	9.1	5.5	1.5	.5	.5	2.1
18	1.1	2.3	38	4.5	31	39	8.7	* 5.2	1.2	.5	.4	1.8
19	1.3	2.6	16	4.6	28	26	8.3	5.0	1.1	.5	.6	1.3
20	1.4	2.2	11	4.5	27	23	8.5	4.8	1.1	.4	.9	1.1
21	1.4	2.1	8.9	4.5	25	20	9.2	5.0	1.1	.3	1.0	1.4
22	1.5	2.3	7.8	4.4	24	19	13	4.9	1.0	.5	.7	1.3
23	1.5	2.3	7.1	5.4	22	18	16	4.7	.9	.6	.6	1.3
24	1.5	2.4	6.5	5.7	21	19	12	4.1	.9	.5	.6	1.3
25	1.5	3.8	6.0	7.0	20	19	11	3.8	.9	.5	.6	1.2
26	* 1.5	1.4	5.6	172	19	18	9.3	3.3	.8	.5	.6	* 1.1
27	1.4	8.8	5.2	72	18	20	8.7	3.0	.8	.5	.7	1.1
28	1.4	5.3	5.0	27	18	19	8.2	2.7	.6	.5	.9	1.1
29	1.2	4.2	4.8	a 125	-	17	7.3	2.6	.7	.6	.9	1.1
30	1.3	5.9	4.5	a 167	-	16	7.2	2.6	.9	.6	.8	1.0
31	1.2	-	4.7	a 345	-	16	-	2.6	-	.7	.7	-
Total	41.3	105.3	942.4	1021.7	1545	672	329.3	159.5	47.9	19.1	20.3	31.6
Mean	1.33	3.51	30.4	33.0	55.2	21.7	11.0	5.15	1.60	0.62	0.65	1.05
Max.	1.9	14	563	345	206	77	16	7.3	3.3	0.9	1.0	2.1
Min.	1.0	1.2	2.5	4.0	18	14	7.2	2.6	0.6	0.3	0.4	0.5
Ac-ft	82	209	1,870	2,030	3,060	1,330	653	316	95	38	40	63
Calendar year 1960:			Max	1,600	Min	0	Mean	21.3	Acre-feet		15,450	
Water year 1960-61:			Max	563	Min	0.3	Mean	13.5	Acre-feet		9,790	

* Discharge measurement made on this day.

a No gage-height record.

SACRAMENTO RIVER BASIN

859

11-4517.6. Cache Creek above Rumsey, Calif.

Location.--Lat 38°54'47", long 122°16'14", in SE¼ sec.2, T.12 N., R.4 W., on right bank 0.4 mile downstream from highway bridge and 2.5 miles northwest of Rumsey.

Drainage area.--954 sq mi.

Records available.--October 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 480 ft (from topographic map).

Extremes.--Maximum discharge during year, 13,200 cfs Dec. 1 (gage height, 12.90 ft); minimum, 3.1 cfs Oct. 29.

Remarks.--Flow partly regulated by Clear Lake beginning in 1915 (see p. 854).

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	4.6	*3400	68	1650	201	277	370	336	499	434	232
2	109	4.4	1210	68	1520	193	262	369	327	457	434	233
3	110	4.1	482	67	1500	192	245	366	311	462	434	231
4	100	5.5	244	66	960	191	233	350	293	466	*422	222
5	88	5.9	161	64	620	176	210	*342	289	469	363	223
6												
7	*85	5.8	122	62	*500	182	*197	340	297	471	332	246
8	75	6.1	98	60	430	*189	192	341	330	464	360	253
9	70	6.3	83	57	370	181	176	338	336	464	450	*249
10	67	5.8	78	55	430	305	166	341	320	464	480	206
11	64	5.4	72	55	1050	284	160	374	288	464	470	166
12												
12	62	5.3	73	*56	950	256	151	398	296	462	430	166
13	53	7.0	72	54	1700	247	140	511	357	467	370	166
14	45	19	*59	55	1000	237	140	401	399	*468	370	164
15	43	4.2	50	53	820	244	272	358	432	479	380	160
16	37	*25	51	54	770	907	290	342	474	527	400	155
17												
16	24	17	70	52	780	648	290	359	470	526	400	151
17	23	14	600	53	610	1000	290	381	463	572	370	148
18	23	12	1200	51	530	940	279	381	469	564	350	145
19	23	9.8	560	50	460	720	281	375	510	535	334	140
20	22	9.6	350	50	399	626	284	377	*538	506	328	136
21												
21	23	9.0	240	50	363	532	369	373	537	484	311	133
22	14	7.7	180	49	325	472	456	361	529	466	314	128
23	8.4	7.7	150	50	301	444	492	359	530	457	349	125
24	6.4	7.5	130	51	274	406	465	379	536	462	349	122
25	6.4	9.8	115	53	253	413	449	406	533	461	330	102
26												
26	*5.4	148	100	657	240	390	437	409	527	461	315	*83
27	4.8	124	92	465	232	424	416	420	521	457	314	81
28	4.2	72	86	227	207	398	397	409	516	434	312	75
29	3.3	48	78	480	-	354	386	380	514	434	307	68
30	4.1	42	75	1460	-	335	384	344	513	434	287	67
31	4.5	-	72	1420	-	306	-	319	-	434	251	-
Total	1314.5	6903	10353	8112	19244	12595	8786	11573	12791	14770	11550	4776
Mean	42.4	23.0	334	262	687	400	293	373	426	476	366	159
Max.	110	148	3,400	3,420	1,700	1,000	492	511	538	572	480	253
Min.	3.3	4.1	50	49	207	176	140	319	288	434	251	67
Ac-ft	2,610	1,370	20,530	16,090	38,170	24,580	17,430	22,950	25,370	29,300	22,510	9,470
Calendar year 1960:			Max	-	Min	-	Mean	-	Acre-feet	-		
Water year 1960-61:			Max	3,420	Min	3.3	Mean	318	Acre-feet	230,400		

* Discharge measurement made on this day.

Note.--No gage-height record, Dec. 16-28, Feb. 3-19, Mar. 17-19, Aug. 7-18.

SACRAMENTO RIVER BASIN

11-4520. Cache Creek near Capay, Calif.

Location.--Lat 38°43'40", long 122°06'15", in Canada de Capay Grant, in Yolo County, on right bank 1.8 miles upstream from Clear Lake Water Co.'s diversion dam, 3.2 miles northwest of Capay, and 5.4 miles northwest of Esparto.

Drainage area.--1,052 sq mi.

Records available.--May 1942 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 225 ft (from river-profile map).

Average discharge.--19 years, 587 cfs (425,000 acre-ft per year); median of yearly mean discharges, 390 cfs (282,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,990 cfs Dec. 1 (gage height, 10.27 ft); minimum, 6.3 cfs Nov. 3.

1942-61: Maximum discharge, 51,600 cfs Feb. 24, 1958 (gage height, 20.90 ft), from rating curve extended above 20,000 cfs; minimum, 2.2 cfs Sept. 11, 12, 16, 1947.

Remarks.--Records good. Flow partially regulated by Clear Lake beginning in 1915 (see p. 854). About 3,700 acre-ft diverted annually between stations above Ramsey and near Capay for irrigation of approximately 900 acres, from data furnished by U.S. Soil Conservation Service.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting control method used Oct. 1-13)

Oct. 1 to Dec. 1

Dec. 2 to Sept. 30

0.9	5.2	2.8	195	1.5	34	4.0	600
1.0	7.0	3.5	390	1.8	60	5.0	1,120
1.2	12	4.0	580	2.3	128	6.0	1,850
1.5	28	5.0	1,120	2.8	225	7.0	2,950
1.8	51	6.0	1,850	3.5	415		
2.3	110	7.0	2,950				

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	7.0	2430	74	1900	200	260	361	322	440	388	192
2	95	7.0	*1860	72	1190	*190	242	355	320	391	394	192
3	96	6.8	750	68	1310	178	220	346	305	376	397	192
4	91	6.8	400	67	820	174	200	337	282	394	379	184
5	82	6.8	260	65	612	168	184	331	278	406	343	170
6	78	7.2	*184	62	502	170	174	328	272	426	308	184
7	72	6.8	141	60	429	178	166	328	298	418	*285	218
8	66	7.4	118	59	367	166	157	325	322	412	308	220
9	63	6.6	104	58	437	218	147	325	315	412	376	192
10	61	6.6	97	58	988	298	141	355	280	406	443	156
11	54	7.6	90	58	958	255	*136	367	270	415	429	138
12	53	8.4	87	56	1340	242	130	471	318	418	379	133
13	45	9.6	80	55	920	230	128	415	367	418	334	134
14	39	12	74	53	805	218	172	355	400	415	331	*133
15	35	25	70	52	755	625	258	331	446	460	340	133
16	30	20	71	*51	765	665	258	331	443	471	361	138
17	24	16	512	50	616	920	252	364	440	510	364	142
18	20	13	870	49	536	900	250	*367	426	516	331	134
19	20	11	502	48	464	665	250	361	468	488	308	123
20	19	10	337	48	412	596	248	355	499	464	292	104
21	19	*10	248	48	376	524	305	355	506	450	270	102
22	18	10	190	47	334	457	388	331	488	426	262	104
23	16	10	160	44	308	415	446	328	*485	403	295	102
24	13	9.9	139	49	282	382	432	349	482	418	318	101
25	10	10	125	56	265	385	422	376	478	415	298	99
26	10	22	112	397	248	358	409	379	468	412	282	95
27	8.8	137	104	564	230	397	391	394	457	409	278	73
28	8.2	87	94	268	212	379	376	391	460	379	278	67
29	7.6	61	88	258	—	340	364	367	457	379	268	65
30	7.4	50	82	*1350	—	312	364	337	443	379	245	61
31	7.2	—	79	2360	—	288	—	308	—	388	215	—
Total	1263.2	608.5	1045.8	6604	18381	11493	7870	11023	11795	13114	10099	4081
Mean	40.7	20.3	337	213	656	371	262	356	393	423	326	136
Max.	96	137	2,430	2,360	1,900	920	446	471	506	516	443	220
Min.	7.2	6.6	70	44	212	166	128	308	270	376	215	61
Ac-ft	2,510	1,210	20,740	13,100	36,460	22,800	15,610	21,860	23,400	26,010	20,030	8,990
Calendar year 1960 :			Max	9,540	Min	6.6	Mean	343	Acre-feet 249,400			
Water year 1960-61 :			Max	2,430	Min	6.6	Mean	293	Acre-feet 211,800			

* Discharge measurement made on this day.

11-4525. Cache Creek at Yolo, Calif.

Location.--Lat 38°43'30", long 121°48'25", in Rio Jesus Maria Grant, on left bank 800 ft upstream from highway bridge and 0.5 mile south of Yolo, Yolo County.

Drainage area.--1,137 sq mi.

Records available.--January 1903 to September 1961. Records for water year 1903 incomplete, yearly estimate published in WSP 1315-A.

Gage.--Water-stage recorder. Datum of gage is 52.27 ft above mean sea level, adjustment of 1929. Prior to summer of 1930, staff gage at datum 5.97 ft higher. Summer 1930 to June 11, 1954, water-stage recorder at same site, at datum 4.00 ft higher.

Average discharge.--59 years, 511 cfs (369,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,190 cfs Dec. 1 (gage height, 11.56 ft); no flow for several months.

1903-61: Maximum discharge 41,400 cfs Feb. 25, 1958 (gage height, 33.11 ft); maximum stage observed, 34.2 ft Mar. 10, 1904, present datum; no flow at times each year.

Remarks.--Records good except those for periods of no gage-height record or those below 20 cfs, which are poor. Flow regulated by Clear Lake beginning in 1915 (see p.854). Diversions for irrigating up to about 30,000 acres between stations near Capay and at Yolo, from data furnished by Clear Lake Water Co.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 1-4)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
1.25	0	2.0	112	0.8	0	1.5	34
1.3	1.5	3.0	410	.9	.2	1.7	75
1.4	6.0	4.0	815	1.0	1.0	2.0	165
1.5	12	5.0	1,340	1.1	2.8	3.0	485
1.6	21	7.0	2,520	1.2	6.4	4.0	915
1.7	36			1.3	12	5.0	1,480
				1.4	21	7.0	2,680

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			547	a 0	2270	120	189	a 8.6				
2			*2360	a 0	1050	*108	156	a 9.2				
3			659	a 0	*1380	*99	120	a 12				
4			260	a 0	770	90	59	a 13				
5			a 98	a 0	536	84	48	a 3.9	(*)			
6			*a 74	a 0	408	78	41	a 0				
7			a 49	a 0	*336	84	31	a 0				
8			a 33	a 0	276	84	25	a 0			(*)	
9			14	*a 0	*246	87	20	a 0				
10			a 6.1	a 0	675	168	16	a 0				
11			a 0	a 0	616	162	*a 2.8	a 0				
12			a 0	a 0	1260	144	a 0	a 0				
13			a 0	a 0	860	141	a 0	a 0				
14			a 0	a 0	672	135	*a 0	a 0				(*)
15			a 0	a 0	608	267	a 0	a 0				
16			a 0	*a 0	*636	592	a 0	a 0				
17			a 0	a 0	524	604	a 0	a 0				
18			530	a 0	443	860	a 0	*a 0				
19			383	a 0	380	612	a 0	0				
20			151	a 0	330	506	a 0	0				
21		(*)	a 1.8	a 0	294	460	a 0	0				
22			a 0	a 0	261	394	a 0	0				
23			a 0	a 0	231	348	a 0	0				
24			a 0	a 0	207	327	22	0				
25			a 0	a 0	186	303	22	0				
26			a 0	a 3.6	171	297	22	0				
27			a 6.5	a 5.55	150	297	22	0	(*)			
28			15	a 4.00	135	303	22	0				
29			a 3.2	a 2.00		282	17	0				
30			a 0	*891		*261	12	0				
31			a 0	*1710		240		0				
Total	0	0	5190.6	3759.6	15911	8537	846.8	46.7	0	0	0	0
Mean	0	0	167	121	568	275	28.2	1.51	0	0	0	0
Max.	0	0	2,360	1,710	2,270	860	189	13	0	0	0	0
Min.	0	0	0	0	135	78	0	0	0	0	0	0
Ac-ft	0	0	10300	7,460	31,560	16,930	1,680	93	0	0	0	0

Calendar year 1960:

Max 8,180

Min 0

Mean 136

Acres-feet 98,300

Water year 1960-61:

Max 2,360

Min 0

Mean 93.9

Acres-feet 68,020

* Discharge measurement or observation of no flow made on this day.

a No gage-height record

SACRAMENTO RIVER BASIN

11-4530. Yolo bypass near Woodland, Calif.

Location.--Lat 38°40'40", long 121°38'35", on left bank just upstream from Sacramento and Woodland railroad bridge, 6 miles upstream from Sacramento Bypass, 7 miles downstream from Fremont weir, and 7 miles east of Woodland, Yolo County.

Records available.--October 1939 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder. Gage is set to datum of Corps of Engineers. Prior to Dec. 17, 1941, staff gage, and Dec. 18-31, 1941, water-stage recorder, at datum 0.73 ft higher. Supplementary water-stage recorder 6 miles downstream at same datum.

Average discharge.--22 years, 4,012 cfs (2,905,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,970 cfs Feb. 2 (gage height, 20.32 ft); minimum, 1.2 cfs May 3, July 1. 1939-61: Maximum discharge, 272,000 cfs Feb. 8, 1942 (gage height, 32.00 ft); no flow at times in 1939-40.

Remarks.--Records fair. Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont weir; during summer, flow consists largely of return water from irrigation.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	2.4	1.9	7.2	3,150	326	479	2.4	92	1.8	17	120
2	6.0	2.1	132	6.1	3,880	303	485	2.1	82	3.8	16	175
3	5.1	2.7	940	6.1	3,760	300	365	1.8	74	4.6	17	100
4	5.1	2.7	1,010	6.1	3,790	264	245	1.8	64	4.1	16	64
5	4.6	2.4	1,180	8.4	3,490	213	178	3.3	* 50	6.6	15	40
6	4.6	2.4	1,100	8.4	3,340	226	146	4.1	40	6.1	14	16
7	5.1	2.4	688	6.6	2,890	236	136	15	31	5.6	17	9.6
8	6.1	3.0	308	7.2	2,300	236	102	22	19	6.1	*14	6.6
9	5.6	3.0	122	9.0	*1,670	255	69	22	13	10	12	5.6
10	3.0	2.4	60	52	1,340	250	50	24	10	19	12	5.1
11	3.0	2.1	32	36	1,380	290	36	31	10	18	10	*4.6
12	3.0	2.4	20	20	2,200	308	36	*31	9.0	11	10	4.1
13	3.0	2.4	18	*38	2,300	305	39	32	6.6	12	12	4.6
14	3.3	4.6	16	46	1,710	*282	34	42	9.0	*13	15	4.1
15	3.0	4.6	*12	25	1,380	346	17	50	13	13	16	5.1
16	2.4	4.1	10	12	1,230	491	2.7	38	12	14	19	9.0
17	2.1	3.3	12	8.4	1,160	819	6.6	30	9.6	14	22	14
18	2.1	*3.7	17	7.2	1,200	908	8.4	26	12	12	25	14
19	2.1	3.7	118	7.2	1,010	992	9.0	46	12	9.6	25	11
20	2.1	3.7	269	7.2	892	910	10	138	15	10	19	9.0
21	2.4	3.7	211	7.8	758	820	10	156	12	13	16	12
22	2.7	3.7	169	7.8	646	816	20	84	9.6	14	12	10
23	2.7	3.3	122	8.4	570	700	44	46	9.6	15	11	9.0
24	3.0	3.0	88	8.4	*548	595	27	31	9.0	16	10	9.0
25	2.9	3.3	64	10	485	542	21	18	8.4	17	9.6	9.6
26	2.8	6.1	46	16	464	473	12	31	7.8	12	9.6	9.0
27	*2.7	6.1	32	20	399	449	7.2	26	*6.6	13	12	10
28	3.0	6.1	22	130	*362	485	4.1	26	7.8	16	45	12
29	2.4	6.1	12	262	-	473	2.4	54	7.2	18	58	12
30	2.4	6.6	10	238	-	*396	2.4	87	2.7	18	77	7.8
31	2.4	-	8.4	899	-	393	-	94	-	19	116	-
Total	106.7	108.1	686.74	1931.5	4830.4	1440.2	2603.8	1215.5	663.9	365.3	699.2	721.8
Mean	3.44	3.60	222	62.3	1,725	465	86.8	39.2	22.1	11.8	22.6	24.1
Max.	6.0	6.6	1,180	899	3,880	992	485	156	92	19	116	175
Min.	2.1	2.1	8.4	6.1	362	213	2.4	1.8	2.7	1.8	9.6	4.1
Ac-ft	212	214	13,620	3,830	95,810	28,570	5,160	2,410	1,320	725	1,390	1,430

Calendar year 1960:

Max 67,100

Min 2.1

Mean 795

Acre-feet 577,200

Water year 1960-61:

Max 3,880

Min 1.8

Mean 214

Acre-feet 154,700

* Discharge measurement made on this day.

Note.--Stage-discharge relation indefinite July 24-30, Aug. 9-13, 21-27.

SACRAMENTO RIVER BASIN

863

11-4532. Dry Creek near Middletown, Calif.

Location.--Lat 38°44'05", long 122°38'50", in NW $\frac{1}{4}$ sec. 9, T.10 N., R.7 W., on right bank 0.3 mile downstream from Kroll Creek, 2.1 miles southwest of Middletown, and 2.7 miles upstream from mouth.

Drainage area.--8.41 sq mi.

Records available.--May 1959 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 1,160 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,620 cfs Jan. 31 (gage height, 8.15 ft); no flow for many days.
1959-61: Maximum discharge, 3,470 cfs Feb. 8, 1960 (gage height, 9.90 ft), from rating curve extended above 950 cfs; no flow for many days in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 6 to Nov. 12, Dec. 3-15, Dec. 19 to Jan. 29, June 19 to Aug. 4)

2.5	0	3.0	9.0	5.0	185
2.6	.3	3.2	18	5.5	280
2.7	1.0	3.5	38	6.0	415
2.8	2.8	4.0	76	6.5	590
2.9	5.6	4.5	120		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	4 6 7	8.3	10 6	1 4	2 8	1 3	3.6	0.5	0.1	0
2	0	.1	1 1 1	7.6	8 7	1 4	2 5	1 1	3.4	.4	.1	0
3	0	.1	4 9	7.0	6 4	1 3	2 3	9.8	3.1	.4	.1	0
4	0	.2	3 0	6.6	5 0	1 2	2 0	8.7	2.8	.4	0	0
5	0	.2	2 0	6.3	4 3	2 3	1 8	8.3	2.8	.4	0	0
6	.3	.2	1 6	5.6	3 7	1 8	1 7	7.6	2.8	.4	0	0
7	.2	.2	1 2	5.9	3 3	*1 5	1 6	7.3	*2.6	.4	0	0
8	.2	.2	1 1	7.0	3 2	5 9	1 4	7.0	2.6	.3	0	0
9	.1	.2	9 0	7.3	9 6	5 0	1 4	8.0	2.4	.3	0	0
10	.1	.2	1 1	6.6	10 1	5 5	1 3	9.0	2.3	.3	0	0
11	.1	.3	9 0	5.9	32 8	3 9	1 2	9.0	2.3	.3	0	0
12	.1	1.5	8.3	5.3	10 6	3 2	1 2	7.3	2.1	.3	0	0
13	.2	1 7	7.3	5.0	9 2	2 7	1 1	6.6	1.7	.2	0	0
14	.2	4 8	7.0	4 8	7 5	10 6	9 8	6.3	1.5	.2	0	0
15	.1	2 4	1 8	4.5	11 2	11 9	8.7	5.6	1.4	.2	0	0
16	.1	*1.9	1 4 8	4.2	7 5	10 4	8.7	5.3	1.0	.2	0	0
17	.1	1.5	1 4 6	3.9	6 0	11 7	7.6	5.0	.9	.2	0	0
18	.1	3.1	7 2	3.9	4 9	7 0	7.3	4.8	1.0	.2	0	0
19	*.1	2.3	5 4	3.6	4 2	6 0	*7.3	4.8	.9	.1	0	0
20	.2	1.7	3 9	3.1	3 5	5 1	7.3	4.8	.9	*.1	0	2
21	.2	1.5	3 0	3.1	3 1	4 3	1 5	4.5	.9	.1	0	2
22	.2	1 4	2 4	2 8	2 8	4 2	3 0	4.5	.8	.1	0	3
23	.2	1 2	2 0	4 8	2 5	3 8	4 2	4.2	.8	.1	0	3
24	.2	1 1	1 8	3 6	2 2	5 0	2 1	3.9	.7	.1	0	3
25	.2	1 2 4	1 6	1 9	2 0	4 4	1 6	3.6	.6	.1	0	3
26	.2	6 8	1 3	8 2	1 8	6 6	1 3	3.6	.5	.1	0	3
27	.2	1 7	1 2	3 6	1 6	6 0	1 2	3.4	.5	.1	0	2
28	.2	9 8	*1 1	2 3	1 6	4 8	1 0	3.4	.6	.1	*0	2
29	.1	8.0	9 8	20 4	-	4 2	1 4	3.4	.6	.1	0	2
30	.1	2 8	9 0	2 2 5	-	3 5	1 2	3.4	.5	.1	0	2
31	.1	-	8.7	*5 1 1	-	3 2	-	3.4	-	.1	0	-
Total	4.1	30 8.1	1 4 1 6.1	1 2 2 6.7	1 7 9 9	1 4 9 8	4 6 4.7	1 90.5	4 8.6	6 9	0 3	2.7
Mean	0.13	10.3	45.7	39.6	64.2	48.3	15.5	6.15	1.62	0.22	0.01	0.09
Max.	0.3	124	467	511	328	119	42	13	3.6	0.5	0.1	0.3
Min.	0	0.1	7.0	2.8	16	12	7.3	3.4	0.5	0.1	0	0
Ac-ft	8.1	611	2,810	2,430	3,570	2,970	922	378	96	14	0.6	5.4

Calendar year 1960:

Max 1,400

Min 0

Mean 29.8

Acre-feet 21,600

Water year 1960-61:

Max 511

Min 0

Mean 19.1

Acre-feet 13,820

Peak discharge (base, 600 cfs)

* Discharge measurement or observation of no flow made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	7a.m.	7.33	1,050	3-14	8p.m.	6.59	626
1-31	4a.m.	8.15	1,620				

SACRAMENTO RIVER BASIN

11-4535. Putah Creek near Guenoc, Calif.

Location.--Lat 38°46'45", long 122°31'00", in Guenoc land grant, on right bank just upstream from Coyote Valley damsite, 2.8 miles upstream from Soda Creek, 3.2 miles downstream from highway bridge at Guenoc, Lake County, and 5.6 miles northeast of Middletown.

Drainage area.--112 sq mi.

Records available.--February 1904 to Sept. 1906, July 1930 to September 1961. Monthly discharge only for some periods, published in WSP 1315-A.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 913.4 ft above mean sea level (river-profile survey). February 1904 to September 1906, staff gage a quarter of a mile upstream at different datum.

Average discharge.--33 years, 202 cfs (146,200 acre-ft per year); median of yearly mean discharges, 160 cfs (116,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,900 cfs Jan. 31 (gage height, 11.72 ft); minimum, 0.2 cfs Aug. 31. 1904-6, 1930-61: Maximum discharge, 32,000 cfs Dec. 11, 1937 (gage height, 22.7 ft), from rating curve extended above 7,200 cfs; minimum, 0.2 cfs Sept. 10, 1927, Sept. 1-4, 1960, Aug. 31, 1961.

Remarks.--Records good. Diversions and ground-water withdrawals for irrigation of about 1,600 acres above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 2-24)

Oct. 1 to Jan. 30

Jan. 31 to Sept. 30

0.8	0.4	1.7	26	0.9	0.1	2.2	54
.9	1.0	2.0	50	1.0	.4	2.6	109
1.0	1.9	2.5	112	1.1	.9	3.0	187
1.1	3.3	3.0	200	1.2	1.6	4.0	457
1.2	5.2	4.0	457	1.3	3.0	5.0	837
1.4	11			1.5	8.0	6.0	1,340
				1.7	15	7.0	1,980
				1.9	27	9.0	3,700

Note.--Same as following
table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.8	2,610	53	*983	111	157	72	26	2.8	1.0	0.3
2	.6	.8	770	51	710	106	147	70	26	2.6	.9	.3
3	.9	.8	308	48	511	101	136	66	24	3.0	1.1	.4
4	.4	.8	173	46	380	98	128	61	22	4.6	1.3	.6
5	.4	.8	123	46	306	104	118	59	20	2.5	1.3	.5
6	1.6	.9	95	44	260	116	112	59	20	2.0	1.8	.4
7	1.7	1.1	80	44	223	*98	107	58	*18	2.0	1.4	.5
8	1.6	1.1	70	46	199	142	101	54	16	3.3	1.4	.7
9	1.3	1.1	62	46	419	272	96	53	18	4.2	.9	.7
10	1.4	1.3	65	45	438	204	90	59	18	3.7	.7	.9
11	1.6	1.5	70	43	1,500	167	86	58	16	1.4	.6	.8
12	1.5	1.7	59	42	795	147	85	54	16	1.8	.9	.6
13	1.5	2.6	56	40	575	134	83	51	14	1.4	1.3	.7
14	1.6	2.2	53	39	474	323	76	52	13	2.5	1.2	.7
15	1.3	*1.9	82	39	573	974	70	45	11	1.6	1.1	.4
16	1.3	1.8	540	39	428	488	67	42	11	3.9	1.2	.5
17	1.4	1.8	706	38	368	1,080	*65	39	11	3.5	.9	1.0
18	1.4	1.9	343	37	311	536	62	36	10	2.5	.4	1.1
19	*1.4	2.0	244	36	270	410	59	33	8.9	1.8	.4	1.1
20	1.3	2.0	173	35	233	351	55	34	8.0	*2.4	.6	1.1
21	1.3	2.0	139	35	211	295	64	34	6.2	1.6	.8	1.1
22	1.2	2.0	118	34	187	260	130	33	7.1	1.8	.6	1.1
23	1.0	2.2	101	36	172	242	235	30	6.8	2.8	.4	1.1
24	.8	2.3	90	36	159	238	139	28	5.2	1.8	.5	1.1
25	1.4	100	82	46	147	238	109	26	5.9	1.3	.4	.8
26	1.2	313	76	770	137	272	93	24	4.9	1.6	.4	.4
27	1.1	88	71	282	128	282	83	23	4.9	1.6	.8	.3
28	1.1	48	*65	180	119	242	76	24	5.4	1.6	.6	.3
29	1.0	36	62	1,070	-	209	78	24	4.9	2.4	*.4	.4
30	.9	82	58	1,300	-----	189	79	26	5.2	2.5	.4	.4
31	.9	-----	56	3,350	-----	169	-----	24	-----	1.4	.3	-----
Total	36.5	704.4	7,600	7,996	11,216	8,598	2,986	1,351	385.4	73.9	26.0	20.3
Mean	1.18	23.5	245	258	401	277	99.5	43.6	12.8	2.38	0.84	0.68
Max.	1.7	313	2,610	3,350	1,500	1,080	235	72	26	4.6	1.8	1.1
Min.	0.4	0.8	53	34	119	98	55	23	4.9	1.3	0.3	0.3
Ac-ft	72	1,400	15,070	15,860	22,250	17,050	5,920	2,680	760	147	52	40
Calendar year 1960:				Max 9,700	Min 0.2	Mean 178		Acre-feet 129,600				
Water year 1960-61:				Max 3,350	Min 0.3	Mean 112		Acre-feet 81,300				

Peak discharge (base, 5,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
12-1	9:30a.m.	10.73	5,620	1-31	7a.m.	11.72	6,900

SACRAMENTO RIVER BASIN

865

11-4535. Putah Creek near Guenoc, Calif.

Temperature (°F) of water, water year October 1960 to September 1961

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	72	66	64	58	52	52	48	45	53	52	57	53	62	56	66	58	67	62	79	71	82	72	80	75
2	72	66	62	59	52	51	47	44	54	53	57	54	65	58	67	58	70	63	78	71	82	73	76	71
3	71	65	62	56	52	51	46	44	53	51	54	51	67	59	67	58	72	64	77	72	82	74	76	70
4	69	64	60	56	52	50	46	44	53	50	56	52	66	61	66	55	74	64	75	70	82	77	78	70
5	68	65	59	55	51	49	46	44	52	50	54	51	64	56	62	56	72	63	75	68	84	78	78	70
6	68	66	58	56	50	47	47	45	54	52	54	51	64	57	60	57	73	63	76	67	82	78	76	70
7	67	63	60	57	50	48	47	45	54	50	55	49	63	56	66	55	74	62	77	67	83	76	76	70
8	67	61	61	55	51	49	48	46	51	50	53	50	64	56	68	57	73	63	78	70	84	77	76	70
9	64	57	60	55	51	49	51	48	52	50	51	47	66	57	64	58	74	63	79	71	84	76	76	70
10	62	56	60	55	50	49	51	48	51	50	53	50	64	56	62	57	75	64	80	72	81	76	76	70
11	64	57	60	57	52	49	50	47	51	50	55	51	66	56	63	57	73	65	81	72	82	77	78	69
12	64	58	58	55	52	50	49	47	50	48	54	52	61	57	67	56	76	63	79	73	83	77	77	70
13	64	58	56	55	52	51	50	48	50	49	57	52	64	54	68	58	78	65	82	73	82	75	75	69
14	64	57	56	54	51	50	50	48	52	49	55	51	65	56	71	60	79	67	79	71	80	72	75	68
15	61	55	57	53	51	51	51	49	52	51	51	49	67	57	72	60	80	68	79	70	80	72	76	69
16	65	58	59	54	51	51	51	50	51	49	51	48	69	59	70	61	80	69	79	72	80	71	74	69
17	66	58	59	55	53	51	51	49	51	49	52	47	66	59	72	61	78	68	80	72	79	70	73	67
18	66	58	60	57	52	52	51	48	50	48	54	48	63	57	73	62	77	65	81	73	80	72	75	66
19	67	58	59	54	52	52	50	48	51	48	54	50	63	54	71	63	78	67	80	74	76	73	74	67
20	67	60	57	54	52	50	50	48	54	50	54	48	62	54	68	63	79	69	82	71	81	72	74	67
21	66	60	58	55	52	51	50	48	55	52	55	49	58	54	72	61	79	71	83	74	82	74	73	68
22	67	59	57	53	52	50	51	50	56	53	55	52	54	51	69	61	78	71	84	75	80	72	73	67
23	64	59	55	53	52	50	51	50	54	51	56	51	54	49	71	60	78	70	83	75	80	73	74	66
24	66	60	56	54	51	50	52	50	53	52	55	52	58	51	72	60	79	72	83	76	79	72	73	66
25	65	59	56	53	51	49	52	52	55	52	54	50	62	53	71	61	79	73	82	74	79	72	74	66
26	63	59	53	50	52	51	52	49	54	51	54	52	64	54	72	62	79	73	82	74	77	72	75	67
27	62	57	51	49	52	49	50	48	55	51	55	51	65	55	71	60	77	71	82	74	78	71	73	68
28	64	58	51	49	48	47	50	49	56	52	56	49	66	58	70	62	75	69	82	73	79	71	74	69
29	64	58	51	50	49	47	50	49	58	51	58	51	61	58	67	62	74	68	81	73	80	73	73	67
30	64	57	52	51	49	48	50	49	58	51	60	53	66	55	68	61	76	68	81	73	81	74	74	66
31	65	58	---	---	48	46	53	50	---	---	61	55	---	---	66	60	---	---	81	73	81	74	---	---
Avg	66	60	58	54	51	50	50	48	53	50	55	51	63	56	68	59	76	67	80	72	81	74	75	69

SACRAMENTO RIVER BASIN

11-4536. Pope Creek near Pope Valley, Calif.

Location.--Lat 38°37'48", long 122°19'52", in SW¼ sec.17, T.9 N., R.4 W., on left bank 0.2 mile upstream from Lake Berryessa, 0.7 mile downstream from Maxwell Creek, and 5.2 miles east of Pope Valley.

Drainage area.--78.3 sq mi.

Records available.--December 1960 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 450 ft (from topographic map).

Extremes.--Maximum discharge during period, 5,510 cfs Jan. 1 (gage height, 10.36 ft), from rating curve extended above 920 cfs; no flow for many days.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, December 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			-	7.3	264	21	37	11	2.7	0.2		
2			-	7.2	249	20	33	10	2.8	.1		
3			-	6.6	156	20	30	9.6	3.0	.1		
4			-	5.9	102	19	28	8.0	2.5	.1		
5			-	5.7	76	21	25	7.6	2.2	.1		
6			-	5.7	62	25	* 23	7.2	2.2	.1		
7			-	5.7	53	18	22	7.0	2.1	.1		
8			-	5.7	47	28	19	6.9	1.9	.1		
9			-	5.9	153	80	19	6.2	1.6	.1		
10			-	* 5.9	124	44	18	6.7	1.4	.1		
11			-	6.1	410	37	16	7.1	1.3	.1		
12			-	6.2	199	33	15	6.1	1.2	.1		
13			-	6.2	131	29	15	5.9	1.1	.1		
14			-	5.8	120	76	15	5.5	1.0	.1		
15			-	5.9	123	331	13	5.3	.9	.1		
16			-	6.1	100	141	12	4.8	.9	0		
17			-	6.3	76	320	13	4.9	1.1	0		
18			-	6.1	62	129	12	4.7	.8	0		
19			-	6.1	52	91	11	4.1	.7	0		
20			30	6.6	45	81	11	3.8	.7	0		
21			22	6.3	42	64	13	4.1	.6	0		
22			19	6.6	36	55	30	4.1	.5	0		
23			17	8.2	33	52	56	3.6	.4	0		
24			14	9.6	29	52	27	3.5	.4	0		
25			12	14	27	56	19	3.0	.3	0		
26			11	* 318	25	93	16	2.6	.3	0		
27			* 9.7	100	* 23	92	14	2.6	.3	0		
28			8.0	55	22	68	14	2.4	.3	0		
29			7.1	615	-	54	13	2.2	.2	0		
30			7.2	338	-----	47	13	2.1	.2	0		
31			7.3	1380	-----	40	-----	* 2.4	-----	0		
Total			-	2973.7	2841	2237	602	165.0	35.6	1.6	0	0
Mean			-	95.9	101	72.2	20.1	5.32	1.19	0.05	0	0
Max.			-	1,380	410	331	56	11	3.0	0.2	0	0
Min.			-	5.7	22	18	11	2.1	0.2	0	0	0
Ac-ft			-	5,900	5,640	4,440	1,190	327	71	3.2	0	0
Calendar year 1960:			Max	Min			Mean			Acre-feet		
Water year 1960-61:			Max	Min			Mean			Acre-feet		

* Discharge measurement made on this day.

11-4539. Lake Berryessa near Winters, Calif.

Location.--Lat 38°30'50", long 122°06'15", in SE 1/4 NW 1/4 Sec. 29, T. 8 N., R. 2 W., near center of Monticello Dam on Putah Creek, 7.5 miles west of Winters.

Drainage area.--577 sq mi.

Records available.--January 1957 to September 1961.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum contents during year, 1,134,000 acre-ft Apr. 4 (elevation, 414.00 ft); minimum, 990,300 acre-ft Sept. 30 (elevation, 405.13 ft).

1957-61: Maximum contents, 1,144,200 acre-ft Apr. 7-10, 1960; (elevation, 414.61 ft); minimum since releases for irrigation began, 951,200 acre-ft Dec. 22, 1959 (elevation, 402.624).

Remarks.--Reservoir is formed by concrete arch-gravity dam, completed November 1956. Usable capacity, 1,592,000 acre-ft between elevations 253.25 (invert of outlet valves) and 440 ft (Controlled spillway elevation) above mean sea level. Dead storage, 10,340 acre-ft. Water is released down Putah Creek and is diverted into Putah South diversion canal for irrigation of about 3,000 acres in the lower Sacramento Valley. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 12 p.m.

Cooperation.--Records furnished by Bureau of Reclamation.

Capacity table (elevation, in feet, and contents, in acre-ft)

405 988,300
410 1,068,100
415 1,150,700

Contents, in thousands of acre-feet, at 12 p.m., water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.029.3	1.018.4	1.029.3	1.042.3	1.079.5	1.108.1	1.133.6	1.129.5	1.105.6	1.074.6	1.039.5	1.009.9
2	1.029.0	1.018.0	1.033.3	1.042.1	1.082.5	1.108.4	1.133.8	1.128.7	1.104.8	1.073.3	1.038.4	1.008.0
3	1.028.7	1.018.0	1.035.2	1.042.1	1.084.6	1.108.6	1.133.8	1.128.3	1.104.0	1.072.4	1.037.5	1.007.5
4	1.028.0	1.017.8	1.035.5	1.042.0	1.085.7	1.108.3	1.134.0	1.127.5	1.103.3	1.071.2	1.036.5	1.006.7
5	1.027.7	1.018.0	1.035.8	1.042.0	1.086.6	1.108.8	1.133.8	1.126.8	1.102.7	1.070.1	1.035.5	1.006.1
6	1.027.5	1.018.1	1.035.2	1.041.8	1.087.4	1.108.9	1.133.5	1.126.0	1.101.8	1.069.1	1.034.6	1.005.3
7	1.027.1	1.018.0	1.034.7	1.041.8	1.087.4	1.108.8	1.133.5	1.125.3	1.100.8	1.068.0	1.033.5	1.004.5
8	1.026.6	1.017.8	1.034.9	1.042.1	1.088.0	1.109.6	1.133.2	1.124.8	1.100.3	1.067.0	1.032.3	1.003.5
9	1.025.1	1.017.7	1.034.9	1.042.6	1.089.5	1.110.1	1.133.0	1.124.2	1.098.9	1.065.9	1.031.5	1.002.6
10	1.025.0	1.017.5	1.035.4	1.042.4	1.090.2	1.110.4	1.132.7	1.123.5	1.098.2	1.064.9	1.030.4	1.001.8
11	1.024.7	1.017.7	1.035.7	1.042.6	1.095.6	1.111.1	1.132.2	1.122.7	1.097.2	1.064.1	1.029.5	1.001.2
12	1.024.2	1.017.5	1.035.7	1.042.6	1.098.0	1.111.2	1.132.0	1.122.2	1.096.6	1.062.8	1.028.3	1.000.5
13	1.024.2	1.018.9	1.035.7	1.042.6	1.099.4	1.111.1	1.132.0	1.121.3	1.095.6	1.061.6	1.027.4	999.8
14	1.023.9	1.018.8	1.035.5	1.042.6	1.100.8	1.112.4	1.131.8	1.120.5	1.094.9	1.060.5	1.026.1	998.8
15	1.022.9	1.018.8	1.036.2	1.042.6	1.102.7	1.117.0	1.131.5	1.119.8	1.093.8	1.059.4	1.025.1	998.2
16	1.022.6	1.018.4	1.037.0	1.042.4	1.103.8	1.118.9	1.131.2	1.119.4	1.092.8	1.058.2	1.024.2	997.7
17	1.022.4	1.018.1	1.038.7	1.042.3	1.104.6	1.122.8	1.130.8	1.118.5	1.091.6	1.057.3	1.022.9	996.9
18	1.022.3	1.018.1	1.039.7	1.042.3	1.105.3	1.124.8	1.130.3	1.117.7	1.090.5	1.056.0	1.022.0	996.5
19	1.021.5	1.017.5	1.040.7	1.042.1	1.106.0	1.125.8	1.130.0	1.116.9	1.089.4	1.054.7	1.021.3	995.7
20	1.021.3	1.017.7	1.040.7	1.042.1	1.106.3	1.127.0	1.129.8	1.115.9	1.088.4	1.053.5	1.020.4	995.5
21	1.021.2	1.017.2	1.040.8	1.042.0	1.106.8	1.127.8	1.130.2	1.115.4	1.087.4	1.052.3	1.019.6	994.6
22	1.020.8	1.017.3	1.041.5	1.041.8	1.107.1	1.128.5	1.130.7	1.114.2	1.086.1	1.050.8	1.018.6	994.2
23	1.020.5	1.017.3	1.041.6	1.042.1	1.107.3	1.129.0	1.131.2	1.113.4	1.084.8	1.049.4	1.017.7	993.6
24	1.020.2	1.016.7	1.042.1	1.042.1	1.107.4	1.129.8	1.131.2	1.112.6	1.083.3	1.048.4	1.016.9	993.1
25	1.020.4	1.018.4	1.042.1	1.043.9	1.107.9	1.130.2	1.130.8	1.111.6	1.082.6	1.046.9	1.016.1	992.7
26	1.019.9	1.019.9	1.042.1	1.048.4	1.107.9	1.130.8	1.130.5	1.110.9	1.081.2	1.045.8	1.015.0	992.0
27	1.019.6	1.019.7	1.042.4	1.049.5	1.107.9	1.131.8	1.130.3	1.109.6	1.080.0	1.044.7	1.014.5	991.9
28	1.019.2	1.019.9	1.042.0	1.050.2	1.107.9	1.132.2	1.130.3	1.108.6	1.078.6	1.043.6	1.013.5	991.3
29	1.018.9	1.019.9	1.041.8	1.056.0	-	1.132.7	1.130.0	1.107.6	1.077.3	1.042.3	1.012.7	990.5
30	1.018.8	1.019.7	1.042.0	1.060.8	-	1.132.8	1.129.7	1.106.6	1.076.0	1.041.0	1.011.8	990.3
31	1.018.6	-	1.042.1	1.075.8	-	1.133.2	-	1.106.1	-	1.040.0	1.011.0	-
(†)	406.92	406.92	408.39	410.47	412.43	413.95	413.74	412.32	410.48	406.44	406.44	405.13
(‡)	-11,500	+1,100	+22,400	+33,700	+32,100	+25,300	-3,500	-23,600	-30,100	-36,000	-29,000	-20,700
(††)	5,857	1,624	1,517	1,164	2,273	3,790	6,785	8,662	12,309	14,680	11,841	8,393

Calendar year 1960..... † +96,400

Water year 1960-61..... ‡ -39,800

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Evaporation in acre-feet.

SACRAMENTO RIVER BASIN

11-4540. Putah Creek near Winters, Calif.

Location.--Lat 38°30'55", long 122°04'50", in NE¼NE¼ sec. 28, T. 8 N., R. 2 W., on left bank 1.3 miles (revised) downstream from Monticello Dam, 6 miles west of Winters and 8 miles downstream from Capell Creek.

Drainage area.--577 sq mi.

Records available.--July 1930 to September 1961.

Gage.--Water-stage recorder. Datum of gage is 160.75 ft above mean sea level (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft higher.

Average discharge.--31 years, 472 cfs, (341,700 acre-ft per year); median of yearly mean discharges, 340 cfs (246,000 acre-ft per year). Adjusted for storage in and evaporation from Lake Berryessa.

Extremes.--Maximum discharge during year, 585 cfs July 4 (gage height, 7.55 ft); minimum, 6.4 cfs Dec. 4.

1930-61: Maximum discharge, 81,000 cfs Feb. 27, 1940 (gage height, 30.5 ft, present datum), from rating curve extended above 30,000 cfs; no flow Sept. 6-15, 1950, July 26 to Sept. 1, Sept. 6-9, 1955.

Maximum stage known since at least 1905, that of Feb. 27, 1940, on basis of records for station at Winters.

Remarks.--Records good. Low-water records are not equivalent to records at Winters or near Davis. Flow regulated by Lake Berryessa beginning Jan. 11, 1957 (see p. 867).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.7	7.8	5.5	130
3.8	10	6.0	208
4.1	19	7.0	442
4.5	37	8.0	745
5.0	74		

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	72	13	12	18	83	75	224	347	456	279	292
2	136	112	12	12	16	84	92	248	342	414	250	254
3	110	95	12	12	15	84	96	254	326	277	288	230
4	106	32	9.8	12	21	84	113	270	299	378	354	219
5	100	32	11	12	53	84	136	290	310	317	354	219
6	90	19	11	*12	79	83	150	301	324	352	354	236
7	90	13	11	11	64	84	164	295	344	381	394	288
8	87	23	11	11	75	87	174	301	370	370	400	301
9	71	24	11	11	76	95	168	273	381	363	366	288
10	60	24	12	12	101	95	158	310	373	378	380	254
11	52	21	12	11	128	105	157	344	337	397	360	224
12	54	16	12	11	94	113	164	365	329	431	342	244
13	61	16	13	11	74	123	171	360	376	450	312	264
14	66	13	13	12	74	136	*177	324	417	*448	312	252
15	66	16	12	12	74	99	174	322	428	327	322	248
16	66	41	13	37	*74	69	174	342	436	324	354	236
17	83	43	13	60	75	68	187	352	436	417	*368	204
18	95	56	11	60	75	67	*185	322	417	431	350	172
19	95	56	11	60	75	67	179	297	408	484	303	*157
20	85	36	11	60	75	67	179	329	422	481	284	157
21	75	*23	11	60	72	*67	197	334	476	495	275	168
22	70	23	11	60	73	66	195	360	492	520	270	176
23	66	19	11	36	75	65	160	383	473	487	254	168
24	64	11	11	11	76	65	160	383	478	448	273	154
25	61	12	11	12	76	66	177	*386	473	462	284	151
26	49	13	11	21	76	65	194	365	445	425	264	140
27	43	12	12	14	77	65	197	370	464	397	254	138
28	34	12	12	14	78	64	204	381	504	420	281	143
29	34	12	12	16	-	64	210	*350	487	408	312	143
30	27	13	12	19	-	64	204	352	453	357	292	143
31	27	-	12	31	-	64	-	357	-	306	292	-
Total	2,311	310	3,60.8	745	1,939	2,492	4,971	10,144	12,167	12,601	9,777	6,263
Mean	74.5	30.3	11.6	24.0	69.2	80.4	166	327	408	406	315	209
Max	188	112	13	60	128	136	210	386	504	520	400	301
Min	27	11	9.8	11	15	64	75	224	299	277	250	138
Ac-ft	4,580	1,800	716	1,480	3,850	4,940	9,860	20,120	24,130	24,990	19,390	12,420
Mean†	-17.2	77.0	401	591	688	553	221	84.2	107	59.7	36.3	1.90
Ac-ft†	-1,060	4,580	24,630	36,340	38,200	34,030	13,140	2,180	6,340	3,670	2,230	113
Calendar year 1960:	Max	397	Min	9.8	Mean	130	Mean†	150	Ac-ft	98,980	Ac-ft†	276,000
Water year 1960-61:	Max	520	Min	9.8	Mean	177	Mean†	231	Ac-ft	128,300	Ac-ft†	167,400

* Discharge measurement made on this day.

† Adjusted for change in storage and evaporation from Lake Berryessa.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of net runoff may appear. This arises primarily from the difficulty of computing net runoff as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SACRAMENTO RIVER BASIN

869

11-4541. Pleasants Creek near Winters, Calif.

Location--38°28'40", long 122°01'43", in SW 1/4 sec. 1, T.7 N., R.2 W., on left bank 0.2 mile upstream from unnamed tributary, 0.3 mile above bridge on Pleasants Valley road, 1.3 miles northeast of Pleasants Valley School, and 5 miles west of Winters.

Drainage area--15.9 sq mi.

Records available--October 1959 to September 1961.

Gage--Water-stage recorder. Altitude of gage is 160 ft (from topographic map).

Extremes--Maximum discharge during year, 250 cfs Jan. 26 (gage height, 4.44 ft); no flow for many months.
1959-61: Maximum discharge, 1,160 cfs Feb. 8, 1960 (gage height, 8.32 ft); no flow for many months in each year.

Remarks--Several small reservoirs above station. Minor diversions above station for irrigation.

Cooperation--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0.5	0	1.0	0.5	0.6					
2			1.0	0	7.8	.4	.6					
3			0	0	*3.8	.4	.5					
4			0	0	2.1	.5	.4					
5			0	0	1.7	.5	.4					
6			0	0	1.4	.7	.4					
7			0	0	.9	.5	.4					
8			0	0	.9	.4	.4					
9			0	0	1.3	.7	.4					
10			0	0	1.2	.7	.3					
11			0	0	4.9	.5	.3					
12			0	0	2.5	.5	.3					
13			0	0	1.5	.5	.2					
14			0	0	1.3	.6	.2					
15			0	0	1.2	3.7	.1					
16			0	0	1.4	1.8	.1					
17			0	0	1.0	2.9	0					
18			0	0	.9	1.9	.1					
19			0	0	.8	1.2	0					
20			0	0	.8	1.2	0					
21			0	0	.7	1.2	0					
22			0	0	.7	.9	.6					
23			0	0	.5	.8	.8					
24			0	0	.4	.8	.5					
25			0	0	.4	.8	.4					
26			0	*52	.4	.8	.3					
27			0	1.5	.4	.7	.2					
28			0	.3	.5	.6	.1					
29			0	41	.6	.6	.1					
30			0	16	.6	.6	0					
31			0	63	.6	.6						
Total	0	0	1.5	173.8	51.4	28.5	8.7	0	0	0	0	0
Mean	0	0	0.05	5.61	1.84	0.92	0.29	0	0	0	0	0
Max.	0	0	1.0	63	10	3.7	0.8	0	0	0	0	0
Min.	0	0	0	0	0.4	0.4	0	0	0	0	0	0
Ac-ft	0	0	3.0	345	102	57	17	0	0	0	0	0
Calendar year 1960:			Max	377	Min	0	Mean	2.68	Acre-feet	2,080		
Water year 1960-61:			Max	63	Min	0	Mean	0.72	Acre-feet	524		

* Discharge measurement made on this day

11-4550. Putah Creek near Davis, Calif.

Location.--Lat 38°31'24", long 121°47'10", in SE $\frac{1}{4}$ sec. 19, T.8 N., R.2 E., on right bank in Los Pinos Grant, 3.3 miles southwest of Davis, Yolo County, and 9.9 miles east of Winters.

Drainage area.--636 sq mi.

Records available.--May 1948 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 45 ft (from topographic map). Prior to Dec. 16, 1948, at datum 2.00 ft higher.

Average discharge.--13 years, 313 cfs (226,600 acre-ft per year).

Extremes.--Maximum discharge during year, 242 cfs Jan. 31 (gage height, 2.78 ft); no flow for several months.

1948-61: Maximum discharge, 46,600 cfs Dec. 22, 1955 (gage height, 24.36 ft); no flow for several months in each year.

Remarks.--Records good. Flow regulated by Lake Berryessa (see p.867). Low-water records are not equivalent to records at Winters or near Winters. Putah South Diversion canal diverted 100,000 acre-ft above the station for irrigation of about 31,000 acres in the lower Sacramento Valley. Several small diversions above station for irrigation of about 200 acres between stations near Winters and near Davis. Low flows during summer months due to return flow from irrigation.

Discharge, in cubic feet per second, water year October 1960 to September 1961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	0		0	118	53	20	26	1.9	17		
2	46	0		0	26	51	20	19	0	18		
3	14	33		0	16	* 49	20	18	0	14		
4	0	30		0	6.9	49	21	17	0	5.8		
5	0	.7		0	5.9	49	19	14	* 0	0		
6	0	0		0	10	48	24	15	0	0		
7	.9	0		0	34	44	26	19	0	0	(*)	
8	.9	0		0	42	46	24	14	0	0		
9	1.2	0		0	48	48	27	11	0	0		
10	2.7	0		0	46	49	29	18	0	0		
11	1.9	0		0	43	51	27	18	0	0		
12	1.2	0		0	65	49	24	11	0	0		
13	1.2	0		0	51	48	26	14	0	0		
14	2.7	0		0	48	49	* 26	9.3	0	* 0		
15	3.5	0		0	48	49	26	9.3	3.9	0		
16	3.9	0		0	48	40	27	6.4	7.5	0		
17	2.7	0		0	46	32	26	6.4	5.9	0		
18	3.9	0		0	46	22	29	* 7.5	5.9	0		
19	3.1	0		0	46	23	30	8.1	6.4	0		(*)
20	.3	0		0	49	27	29	6.9	12	0		
21	0	* 0	(*)	0	48	* 28	28	10	18	0		
22	0	0		2.0	49	30	29	10	16	0		
23	0	0		26	43	30	29	4.9	* 18	0		
24	0	0		16	48	36	34	3.1	18	0		
25	0	0		.1	49	30	33	3.9	18	0		
26	0	0		0	51	27	30	4.4	24	0		
27	0	0		27	53	26	26	7.5	20	0		
28	0	0		4.4	54	24	22	9.3	20	0		
29	0	0		6.4	-	23	27	8.1	18	0		
30	0	0		90	-	20	27	5.4	21	0		
31	0	-		* 6.4	-	20	-	1.5	-	0		
Total	136.1	63.7	0	235.9	1237.8	1170	785	336.0	234.5	54.8	0	0
Mean	4.39	2.12	0	7.61	44.2	37.7	26.2	10.8	7.82	1.77	0	0
Max.	46	33	0	90	118	53	34	26	24	18	0	0
Min.	0	0	0	0	5.9	20	19	1.5	0	0	0	0
Ac-ft	270	126	0	468	2,460	2,320	1,560	666	465	109	0	0
Calendar year 1960:				Max	403	Min	0	Mean	12.8	Acre-feet	9,250	
Water year 1960-61:				Max	118	Min	0	Mean	11.7	Acre-feet	8,440	

* Discharge measurement or observation of no flow made on this day.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

871

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspection of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Tulare Lake basin							
2251.00	Los Gatos Creek below Jacalitos Creek, near Coalinga	At intersection of sections 22, 23, 26 27, T.20 S., R.16 E., at bridge on El Dorado Avenue, 8 miles east of Coalinga.	407	1959-61			a
San Joaquin River basin							
2252.00	Cantua Creek near Cantua Creek	SE¼ sec. 34, T.17 S., R.14 E., 150 ft below road ford and 9.2 miles southwest of Cantua Creek.	46.4	1959-61	2- 1-60	0.66	a59
2556.05	Little Panoche Creek near Panoche	NW¼ sec.22, T.13 S., R.11 E., 100 ft below road ford and 14 miles northeast of Panoche.	101	1959-61	1-31-61	1.79	†
2630.50	Garzas Creek near Gustine	SW¼ sec.18, T.8 S., R.8 E., above diversion weir 7.7 miles west of Gustine.	51.2	1959-61			a
2746.30	Del Puerto Creek near Patterson	SW¼ sec.15, T.5 S., R.7 E., at Delta-Mendota Canal crossing, 3.9 miles northwest of Patterson.	73.1	1959-61	1-31-61	b9.90	c25

† Discharge not determined.

a No evidence of any flow during 1961 water year.

b About.

c Estimated.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1961						
Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Tulare Lake basin						
South Fork Kings River	Kings River	NW¼ sec.8, T.13 S., R.30 E., 0.3 mile below Grizzly Creek and 4.5 miles west of Cedar Grove	409	1950-57*, 1959,1960	11-17-60 8-17-61	127 *155
Dinkey Creek	North Fork Kings River	SE¼ sec.3, T.12 S., R.26 E., 0.5 mile above mouth and 0.5 mile northwest of Balch Camp	136	1920-37†, 1959	11-16-60 7-21-61 8-18-61 8-23-61	37.6 *3.01 *3.70 *3.17
Poso Creek	Tulare Lake	W¼ sec.26, T.25 S., R.30 E., 0.5 mile above Angel Creek and 1 mile southwest of Glennville	-		12-19-60	1.87
San Joaquin River basin						
Tenaya Creek	Merced River	Lat 37°44'32", long 119°33'25" at bridge 0.7 mile above mouth and 1.7 miles east of Yosemite National Park Headquarters.	447	1904-09*, 1912-58*	8-14-61	*1.85
Yosemite Creek	do.....	Lat 37°44'45", long 119°35'40", 0.3 mile above mouth and 0.7 mile west of Yosemite National Park Headquarters.	43.2	1904-09*, 1912-26*, 1960	8-15-61	*1.04
Tuolumne River	San Joaquin River	NW¼ sec.27, T.1 N., R.21 E., above Hetch Hetchy Reservoir		1959-60	9-27-61	*24.2
Hatch Creek	Tuolumne River	SE¼ sec.21, T.1 N., R.21 E., above Hetch Hetchy Reservoir		1959-60	9-27-61	*0.16
Rancheria Creek	do.....	SE¼ sec.12, T.1 N., R.20 E., above Tiltill Creek and Hetch Hetchy Reservoir		1959-60	9-27-61	*1.70
Tiltill Creek	Rancheria Creek	SE¼ sec.12, T.1 N., R.20 E., 50 ft above mouth and Hetch Hetchy Reservoir		1959-60	9-27-61	*0.01
Sacramento River basin						
Stony Creek	Sacramento River	SE¼ sec.35, T.18 N., R.7 W., at East Park feed canal diversion dam 3 miles west of Stonyford.	97	1913-14, 1918-34*, 1959	8-21-61	23.5
Rock Creek	North Yuba River	SW¼ sec.5, T.19 N., R.10 E., 600 ft above mouth at Goodyears Bar	10.8	1910-33*, 1960	8-16-61	*0.21
Goodyears Creek	do.....	NW¼ sec.5, T.19 N., R.10 E., 300 ft above mouth and 0.5 mile north of Goodyears Bar	12.2	1910-33*, 1960	8-16-61	*4.17
Dry Creek	Yuba River	NW¼ sec.25, T.19 N., R.6 E., 0.2 mile below New York Creek and 0.9 mile northeast of Brownsville.	20.4	1948-60*	8-23-61	*1.09
Georgetown Ditch	Pilot Creek	NE¼ sec.22, T.13 N., R.14 E., 0.5 mile below Angel Creek and 25 miles east of Georgetown	-		8-10-61 8-28-61 9-18-61	24.3 24.4 21.9
Georgetown Ditch	Pilot Creek	SW¼ sec.22, T.13 N., R.14 E., 1.2 miles below Angel Creek and 25 miles east of Georgetown.	-		8-10-61 8-28-61 9-18-61	23.0 23.0 22.6
Silver Creek	South Fork American	SE¼ sec.20, T.12 N., R.14 E., 0.6 mile below confluence of Big Silver Creek and Jones Fork Silver Creek and 6.6 miles north of Riverton.	82.7	1924-60*	8-15-61	*7.53

* Base flow.

† Operated as a continuous-record gaging station.

	Page		Page
Adobe Creek near Kelseyville (tributary to Prosser Creek..	850	Cosumnes River, at McConnell.....	699
Alder Creek (tributary to South Fork American River) near		at Michigan Bar.....	697
Truckee.....	487	Middle Fork, near Somerset.....	695
Alder Creek (tributary to South Fork American River) near		North Fork, near El Dorado.....	694
Whitehall.....	838	South Fork, near River Pines.....	696
American River at Fair Oaks.....	847	Cottonwood Creek (Sacramento River basin), Middle Fork,	
Middle Fork, at French Meadows.....	822	near Ono.....	730
near Auburn.....	832	near Cottonwood.....	732
near Foresthill.....	831	North Fork, near Igo.....	731
North Fork, at North Fork Dam.....	820	Courtright Reservoir, contents of.....	539
South Fork, near Camino.....	843	Cow Creek near Millville.....	728
near Kyburz.....	837	Cubic foot per second, definition of.....	451
near Lotus.....	844	Deer Creek (tributary to Cosumnes River) near Sloughhouse..	698
Antelope Creek near Red Bluff.....	738	Deer Creek (tributary to Sacramento River) near Vina.....	743
Ash Creek at Adin.....	708	Deer Creek (tributary to Yuba River) near Smartville.....	803
Bass Lake near Bass Lake.....	581	Del Puerto Creek near Patterson.....	871
Battle Creek near Cottonwood.....	733	Del Puerto Creek tributary No. 2 near Patterson.....	620
Bear Creek near Lake Thomas A. Edison.....	565	Delta-Mendota Canal at Tracy pumping plant near Tracy....	673
Bear Creek (tributary to Cache Creek) near Rumsey.....	858	Dog Creek near Verdi, Nev.....	495
Bear Creek (tributary to Sacramento River) near Millville..	729	Don Pedro Reservoir near La Grange.....	636
Bear Creek (tributary to San Joaquin River), near Cathay..	603	Donnells Reservoir near Dardanelle.....	643
near Lockeford.....	672	Donner Creek at Donner Lake, near Truckee.....	484
Bear River (tributary to Feather River), near Auburn.....	806	Dry Creek (tributary to Bear River) near Wheatland.....	808
near Wheatland.....	807	Dry Creek (tributary to Kaweah River) near Lemon Cove....	533
Bear River (tributary to North Fork Mokelumne River),		Dry Creek (tributary to Mokelumne basin) near Galt.....	692
near Salt Springs Dam.....	678	near Ione.....	689
Beardsley Lake near Strawberry.....	645	Dry Creek (tributary to Putah Creek) near Middletown.....	863
Bidwell Creek near Fort Bidwell.....	501	Dry Creek (tributary to Yuba River) at Virginia Ranch....	804
Big Chico Creek near Chico.....	744	Duncan Creek near French Meadows.....	823
Big Creek (tributary to San Joaquin River) below		East Walker River, above Stromanider ditch, near	
Huntington Lake.....	575	Mason, Nev.....	467
Big Creek (tributary to Tulare Lake basin) above Pine		near Bridgeport.....	466
Flat Reservoir.....	552	Echo Lake conduit near Phillips.....	833
Big Creek (tributary to Tuolumne River) near Groveland....	633	Eleanor Creek near Hetch Hetchy.....	627
Big Grizzly Creek near Portola.....	756	Elder Creek, at Gerbar.....	740
Blackwood Creek near Tahoe City.....	479	near Paskenta.....	739
Boca Reservoir at Boca.....	492	Fall River near Dana.....	711
Borel Canal below Isabella Dam.....	509	Falls Creek near Hetch Hetchy.....	621
Bowman Lake near Graniteville.....	797	Feather River, at Bidwell Bar.....	768
Bowman-Spaulding Canal at intake.....	798	at Nicolaus.....	809
Bridgeport Reservoir near Bridgeport.....	465	Middle Fork, below Sloat.....	758
Buckeye Creek near Bridgeport.....	463	near Clio.....	757
Bucks Lake near Bucks Lodge.....	779	near Merrimac.....	759
Burney Creek near Burney.....	713	near Oroville.....	783
Butt Creek above Almanor-Butt Creek tunnel, near		North Fork, at Big Bar.....	780
Prattville.....	771	East Branch of, near Rich Bar.....	778
Butte Creek at Butte Meadows.....	750	near Prattville.....	770
Butte Creek (Sacramento River basin) near Chico.....	751	South Fork, above Little Grass Valley Reservoir.....	760
Cache Creek above Rumsey.....	859	at Enterprise.....	767
at Yolo.....	861	below diversion dam, near Strawberry Valley.....	762
near Capay.....	860	below Little Grass Valley Reservoir.....	761
near Lower Lake.....	856	near Forbestown.....	765
North Fork, near Lower Lake.....	857	West Branch, near Paradise.....	781
Calaveras River, at Jenny Lind.....	671	near Yankee Hill.....	782
below Hogan Dam.....	669	Fleming Creek near Blackcap Mountain.....	536
North Fork, near San Andreas.....	668	Florence Lake near Big Creek.....	562
South Fork, near San Andreas.....	666	Folsom Lake, near Folsom.....	846
Calaveritas Creek near San Andreas.....	667	Forbes Creek, North Fork, near Dutch Flat.....	818
Camp Creek near Somerset.....	693	Forest Creek near Wilseyville.....	679
Cantua Creek near Cantua Creek.....	871	Fresno River near Daulton.....	598
Canyon Creek below Bowman Lake.....	799	near Knowles.....	597
Carson River, East Fork, below Markleeville Creek, near		Friant-Kern Canal at Friant.....	589
Markleeville.....	475	Friant-Madera Canal at Friant.....	588
East Fork, near Gardenville, Nev.....	476	Garza Creek near Gustine.....	871
West Fork, at Woodfords.....	477	Georgetown divide ditch above Pilot Creek, near	
Cherry Creek below Cherry Valley Dam, near Hetch Hetchy..	625	Georgetown.....	827
near Early Intake.....	629	Gold Run tributary near Nelson.....	752
Cherry Creek Canal near Early Intake.....	628	Golden Trout Creek near Cartago.....	502
Cherry Lake near Hetch Hetchy.....	624	Granite Creek near Cattle Mountain.....	560
Chiquito Creek near Arnold Meadow.....	569	Green Creek near Bridgeport.....	461
Chowchilla River, at Buchanan damsite.....	602	Hat Creek near Hat Creek.....	712
East Fork, near Ahwahnee.....	599	Helms Creek below Courtright Dam.....	538
Middle Fork, near Mipinnawassess.....	601	Hetch Hetchy Reservoir at Hetch Hetchy.....	622
West Fork, near Mariposa.....	600	Highland Creek (Sacramento River basin) near Kelseyville..	851
Churn Creek near Redding.....	724	Highland Creek (San Joaquin River basin) below Spicer	
Clavey River near Buck Meadows.....	632	Meadows Reservoir.....	649
Clear Creek, at French Gulch.....	722	Horse Creek at Little Valley, near Pittville.....	710
near Igo.....	723	Huntington Lake near Big Creek.....	574
Clear Lake at Lakeport.....	854	Huntington-Shaver conduit at outlet.....	578
Cole Creek near Mokelumne Peak.....	677	Ice House Reservoir near Kyburz.....	839
Contra Costa Canal near Oakley.....	700	Indian Creek, near Crescent Mills.....	775
Copsey Creek near Lower Lake.....	855	near Taylorville.....	773
Corral Hollow Creek near Tracy.....	664	Isabella Reservoir near Isabella.....	514
Cosgrove Creek near Valley Springs.....	670	Jackass Creek near Jackass Meadow.....	568

	Page		Page
Jenkinson Lake, contents of.....	693	Merced River at Bagby.....	613
Kaweah River, at Three Rivers.....	530	at Exchequer.....	616
Marble Fork, at Potwisha Camp.....	529	at Happy Isles Bridge, near Yosemite.....	609
Middle Fork, near Potwisha Camp.....	527	at Pohono Bridge, near Yosemite.....	610
near Three Rivers.....	532	near Stevenson.....	617
South Fork, at Three Rivers.....	531	South Fork, at Wawona.....	611
Kelsey Creek near Kelseyville.....	853	near El Portal.....	612
Kelso Creek near Weldon.....	513	Merced River Slough near Newman.....	618
Kern River at Kernville.....	508	Miami Creek near Oakhurst.....	596
below Isabella Dam.....	515	Middle Tuolumne River at Oakland Recreation Camp.....	631
below Kern Canyon powerhouse.....	517	Middle Yuba River, above Oregon Creek.....	790
near Democrat Springs.....	516	at Milton.....	788
near Kernville.....	506	near Alleghany.....	789
near Quaking Aspen Camp.....	503	Mill Creek (Sacramento River basin) near Los Molinos.....	741
South Fork, near Olancha.....	511	Mill Creek (Tulare Lake basin) near Piedra.....	556
near Onyx.....	512	Millerton Lake at Friant.....	590
Kings River, above North Fork.....	534	Milton-Bowman tunnel at outlet.....	787
below North Fork.....	551	Miscellaneous measurements.....	872
below Pine Flat Dam.....	555	Modesto Canal near La Grange.....	638
North Fork, above Dinkey Creek.....	546	Mokelumne River, at Lancha Plana.....	684
below Dinkey Creek.....	549	at Woodbridge.....	687
below Meadow Brook.....	535	Middle Fork, at West Point.....	680
near Cliff Camp.....	540	near Clements.....	685
Lakes and reservoirs:		near Mokelumne Hill.....	682
Almanor, Lake, near Prattville.....	769	North Fork, below Salt Springs Dam.....	676
Bass Lake near Bass Lake.....	581	South Fork, near West Point.....	681
Beardsley Lake near Strawberry.....	645	Mono Creek below Lake Thomas A. Edison.....	567
Berryessa, Lake, near Winters.....	867	Morrison Creek near Sacramento.....	849
Boca Reservoir at Boca.....	492	North Honcut Creek near Bangor.....	785
Bowman Lake near Graniteville.....	797	North Shittail Creek near Dutch Flat.....	819
Bridgeport Reservoir near Bridgeport.....	465	North Yuba River, below Bullards Bar Dam.....	794
Bucks Lake near Bucks Lodge.....	779	below Goodyears Bar.....	792
Cherry Lake near Hetch Hetchy.....	624	Oak Run Creek near Oak Run.....	726
Clear Lake at Lakeport.....	854	Oakdale Canal near Knights Ferry.....	660
Courtright Reservoir.....	539	Onion Creek near Soda Springs.....	816
Don Pedro Reservoir near LaGrange.....	636	Onion Creek tributaries Nos. 3, 5A, 2, 1, and 7 near Soda Springs.....	812-815, 817
Donnells Reservoir near Dardanelle.....	643	Oregon Creek near North San Juan.....	791
Eleanor, Lake, near Hetch Hetchy.....	626	Orestimba Creek near Newman.....	620
Florence Lake near Big Creek.....	562	Pacific Gas & Electric Co. conduit No. 3 near Bass Lake.....	582
Folsom Lake near Folsom.....	846	Packsaddle Canyon Creek near Fairview.....	505
Hetch Hetchy Reservoir at Hetch Hetchy.....	622	Palermo Canal at Enterprise.....	766
Huntington Lake near Big Creek.....	574	Panoche Creek below Silver Creek, near Panoche.....	594
Ice House Reservoir near Kyburz.....	839	Partial record stations, discharge at.....	871
Isabella Reservoir near Isabella.....	514	Paynes Creek near Red Bluff.....	734
Jenkinson Lake.....	693	Philadelphia Canal near Strawberry.....	653
Lost Creek Reservoir.....	764	Pilot Creek above Stumpy Meadows Reservoir.....	828
McClure, Lake, at Exchequer.....	615	Pine Creek near Susanville.....	499
Mammoth Pool Reservoir near Big Creek.....	570	near Westwood.....	500
Melones Reservoir at Melones Dam.....	656	Pine Flat Reservoir near Piedra.....	554
Millerton Lake at Friant.....	590, 591	Pioneer ditch below Success Dam.....	525
Pine Flat Reservoir near Piedra.....	554	Pit River, at Big Bend.....	715
Salt Springs Reservoir near West Point.....	674	below Pit No. 4 Dam.....	714
Shasta Lake near Redding.....	720	near Bieber.....	709
Shaver Lake near Big Creek.....	579	near Canby.....	706
Tahoe, Lake, at Tahoe.....	481	near Lookout.....	707
Topaz Reservoir near Topaz.....	472	near Montgomery Creek.....	716
Thomas A. Edison, Lake, near Big Creek.....	566	North Fork, near Alturas.....	704
Tulare Lake in Kings County.....	519	South Fork, near Likely.....	705
Tulloch Reservoir near Knights Ferry.....	658	Pitman Creek below Tamarack Creek.....	577
Wishon Reservoir.....	539	Pleasants Creek near Winters.....	869
Lights Creek near Taylorville.....	774	Pope Creek near Pope Valley.....	866
Little Cow Creek near Ingot.....	727	Poso Creek near Oildale.....	520
Little Dry Creek at mouth, near Friant.....	592	Post Corral Creek near Blackcap Mountain.....	537
Little Kern River near Quaking Aspen Camp.....	504	Prosser Creek, at Hobart Mills.....	486
Little Last Chance Creek near Chilcote.....	755	near Boca.....	488
Little Panoche Creek near Panoche.....	871	Putah Creek, near Davis.....	870
Little Panoche Creek tributary No. 1 near Panoche.....	595	near Guenoc.....	864
Little Truckee River, above Boca Reservoir, near Boca.....	491	near Winters.....	868
at Boca.....	493	Pyramid Creek near Phillips.....	834
near Hobart Mills.....	489	Red Bank Creek near Red Bluff.....	737
Little Walker River near Bridgeport.....	469	Red Clover Creek near Genesee.....	772
Long Canyon Creek near French Meadows.....	829	Reservoirs. See Lakes and reservoirs.	
Los Banos Creek near Los Banos.....	607	Robinson Creek at Twin Lakes outlet, near Bridgeport.....	462
Los Gatos Creek (Tulare Lake basin) above Nunez Canyon, near Coalinga.....	557	Rock Creek above Dinky Creek.....	548
below Jacalitos Creek, near Coalinga.....	871	Rubicon River, at Rubicon Springs, near Meeks Bay.....	824
Lost Creek, above Sly Creek Reservoir.....	763	near Foresthill.....	830
near Clipper Mills.....	764	near Georgetown.....	826
Lost Creek Reservoir, contents of.....	764	South Fork, at mouth, near Georgetown.....	825
McCloud River, above Shasta Lake.....	719	Sacramento River, at Butte City.....	748
near McCloud.....	718	at Colusa.....	749
Mammoth Pool Reservoir near Big Creek.....	570	at Delta.....	703
Mariposa Creek near Cathay.....	604	at Keswick.....	721
Marsh Creek near Byron.....	701	at Knights Landing.....	754
Martis Creek near Truckee.....	485	at Sacramento.....	848
Maxwell Creek at Coulterville.....	614	at Verona.....	810
Melones Reservoir at Melones Dam.....	656	below Wilkins Slough.....	753

INDEX

875

	Page		Page
Sacramento River, near Mount Shasta.....	702	Stony Creek, at Black Butte damsite, near Orland.....	746
near Red Bluff.....	735	near Fruto.....	745
Sacramento River basin, discharge measurements at		near Hamilton City.....	747
miscellaneous sites in.....	872	Susan River at Susanville.....	497
Sacramento weir near Sacramento.....	490	Sutter Creek near Sutter Creek.....	691
Sagehen Creek near Truckee.....	605	Swager Creek near Bridgeport.....	464
Salt Slough near Los Banos.....	674	Sycamore Creek above Pine Flat Reservoir.....	553
Salt Springs Reservoir near West Point.....	665	Teakettle Creek at site No. 3, near Patterson Mountain...	541
San Domingo Creek near San Andreas.....	518	tributaries Nos. 7, 2, 2A, and 1, near Patterson	
San Emigdio Creek at San Emigdio Ranchhouse.....	571	Mountain.....	542-545
San Joaquin River, above Big Creek.....	580	Terms and abbreviations, definition of.....	451
above Willow Creek, near Auberry.....	606	Thomes Creek at Paskenta.....	742
at Fremont Ford Bridge.....	559	Tiger Creek powerhouse conduit below Salt Springs Dam....	675
at Miller Crossing.....	591	Topaz Reservoir near Topaz.....	472
below Friant.....	586	Trout Creek near Tahoe Valley.....	480
below Kerckhoff powerhouse.....	593	Truckee River, at Parad.....	494
near Biola.....	619	at Reno, Nev.....	496
near Newman.....	663	at Tahoe.....	482
near Vernalis.....	558	near Truckee.....	483
North Fork, below Iron Creek.....	563	Tulare Lake basin, discharge measurements at	
South Fork, near Florence Lake.....		miscellaneous sites in.....	872
San Joaquin River basin, discharge measurements at		reservoirs in.....	539
miscellaneous sites in.....	872	Tulare Lake in Kings County.....	519
San Luis Creek near Los Banos.....	608	Tule River, below Success Dam.....	526
Scotts Creek near Lakeport.....	852	near Springville.....	523
Shasta Lake near Redding.....	720	North Fork, at Springville.....	522
Shaver Lake near Big Creek.....	579	of Middle Fork, near Springville.....	521
Silver Creek (Carson River basin) below Pennsylvania		South Fork, near Success.....	524
Creek, near Markleeville.....	474	Tulloch Reservoir near Knights Ferry.....	658
Silver Creek (American River basin), below Camino		Tuolumne Canal near Long Barn.....	654
diversion dam.....	841	Tuolumne River, above La Grange Dam, near La Grange.....	637
near Placerville.....	842	at Modesto.....	640
South Fork, near Ice House.....	840	near Hatch Hatchy.....	623
Silver Lake Outlet near Kirkwood.....	835	North Fork, above Dyer Creek, near Tuolumne.....	634
Slate Creek below diversion dam, near Strawberry Valley...	793	South Fork, near Oakland Recreation Camp.....	630
South Cow Creek near Millville.....	725	Turlock Canal near La Grange.....	639
South Honcut Creek near Bangor.....	786	Twin Lakes Outlet near Kirkwood.....	836
South San Joaquin Canal near Knights Ferry.....	659	Upper Castle Creek at Soda Springs.....	795
South Yuba River, at Jones Bar.....	801	Upper Truckee River near Myers.....	478
near Cisco.....	796	Virginia Creek near Bridgeport.....	460
near Washington.....	800	Ward tunnel, at intake.....	561
Spanish Creek, above Blackhawk Creek, at Keddle.....	777	at outlet.....	573
near Quincy.....	776	West Walker River, at Hoyer Bridge, near Wellington, Nev...	473
Squaw Creek above Shasta Lake.....	717	at Leavitt Meadows, near Coleville.....	468
Stanislaus River, at Ripon.....	662	below Little Walker River, near Coleville.....	470
below Goodwin Dam, near Knights Ferry.....	661	near Coleville.....	471
below Melones powerhouse.....	657	Willow Creek (Honey Lake basin) near Susanville.....	498
Clark Fork, near Dardanelles.....	642	Willow Creek (tributary to San Joaquin River), at mouth,	
Middle Fork, at Halls Half Acre Bridge.....	644	near Auberry.....	584
at Kennedy Meadows.....	641	North Fork, near Bass Lake.....	583
at Sand Bar Flat, near Avery.....	647	Wishon Reservoir, contents of.....	539
below Beardsley Dam.....	646	Woodbridge Canal at Woodbridge.....	686
North Fork, below Ganns damsite.....	650	Woods Creek near Jacksonville.....	635
below Silver Creek.....	648	Yolo bypass near Woodland.....	862
near Avery.....	651	Yuba River at Englebright Dam.....	802
South Fork, at Strawberry.....	652	near Marysville.....	805
near Long Barn.....	655		



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