

# SURFACE WATER SUPPLY OF THE SACRAMENTO RIVER BASIN, CALIFORNIA, 1895-1927

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## INTRODUCTION

The measurement of the flow of the streams in California was begun by the State engineer in 1878, in accordance with the law requiring him "to investigate the problems of the irrigation of the plains, the condition and capacity of the great drainage lines of the State, and the improvement of the navigation of rivers." The work was restricted to a few localities in the Sacramento and San Joaquin River Basins, the principal station being on the Sacramento at Colinsville.

The State engineer's office was discontinued in 1884, and practically no further stream studies were made in California until 1894, when engineers of the United States Geological Survey made a few measurements of streams in the semiarid parts of the State. The following year the Geological Survey established a station on Sacramento River at Jellys Ferry, 12 miles above Red Bluff, and since that time it has gradually extended the work, as funds were made available, until it now has available records of flow at a large number of points on California streams.

The records to June 30, 1912, for the Sacramento River Basin were published in Water-Supply Paper 298. Subsequent records are contained in the annual series of water-supply papers as follows:

	Water-Supply Paper		Water-Supply Paper		Water Supply Paper
1912	331	1917	461	1923	571
1913	361	1918	481	1924	591
1914	391	1919-20	511	1925	611
1915	411	1921	531	1926	631
1916	441	1922	551	1927	651

Although a few of these papers are out of print, most of them can be bought from the Superintendent of Documents, Government Printing Office, Washington, D. C., or they may be consulted at the Geological Survey offices at 303 Customhouse, San Francisco, and 600 Federal Building, Los Angeles, and at the public libraries in the principal cities.

The records are summarized in this paper to make them readily available for reference. For detailed information of daily discharge, run-off in acre-feet, and station descriptions giving full information regarding location and equipment of station and other pertinent information, reference should be made to the above-mentioned water-supply papers or to the files at the Geological Survey offices.

### COOPERATION AND ACKNOWLEDGMENTS

Cooperation in stream measurements between the United States Geological Survey and the State of California was first provided for by the State legislature in an act approved March 16, 1903. Similar acts continued the cooperation until April 22, 1909, when an act placing cooperation between the State of California and the United States Geological Survey on a permanent basis was approved. This act provided as follows:

The department of engineering is hereby empowered to carry on topographic surveys and investigations into matters pertaining to the water resources of the State along the lines of hydrography, hydro-economics, and the use and distribution of water for agricultural purposes, and to that end, where possible and to the best interests of the State, shall enter into contracts for cooperation with the different departments of the Federal Government in such amounts as may be an equitable and necessary division of the work. The State engineer, with the consent of the governor, may maintain and continue such investigations where there is available money not covered by cooperation contract. For the permanent maintenance of said surveys and investigations there is hereby continuously appropriated out of the general fund of the State treasury for each and every fiscal year, commencing with the date upon which this act becomes effective, the sum of \$30,000.

Of this sum, \$9,000 was allotted annually to investigations of water resources. To supplement this fund and the Federal appropriation, the State Conservation Commission, State Board of Control (water powers), State Water Commission, and later the Department of Public Works through the divisions of engineering and irrigation and water rights have allotted additional money.

The State budget for 1928 and 1929 groups all State cooperation with the Geological Survey for investigation of water resources and provides a fund of \$25,000 a year for the biennium. This cooperation is disbursed by the division of engineering and irrigation, Department of Public Works, through Edward Hyatt, jr., State engineer.

The earliest stream gaging work in the State was carried on under the direction of William Ham. Hall, State engineer, by C. E. Grunsky, who continued in charge until the State engineer's department was abolished. Work by the United States Geological Survey was begun in 1894, under the direction of F. H. Newell, chief hydrographer, by Arthur P. Davis and Joseph B. Lippincott. On the establishment of the United States Reclamation Service, in 1902, Mr. Lippincott

became supervising engineer for California, and the field work was continued under his direction by William B. Clapp and Samuel G. Bennett, until the separation of the Reclamation Service from the Geological Survey in 1906, when Mr. Clapp became district engineer. On Mr. Clapp's death in December, 1911, H. D. McGlashan was appointed district engineer.

Much cooperation and many records have been furnished by other Federal bureaus, counties, municipalities, irrigation districts, permittees and licensees of the Federal Power Commission, private companies, and individuals, to whom credit is given in the annual series of water-supply papers.

### TOPOGRAPHY

California is traversed on the east and west by two approximately parallel ranges of mountains—the Sierra Nevada and the Coast Range—which converge at Mount Shasta on the north and at Tehachapi on the south and inclose the largest body of farming land in the State, the area often spoken of as the Great Valley of California. This valley is a gently sloping and practically unbroken plain, about 400 miles long and ranging in width from a few miles to 80 miles, with an average width of 40 miles. The total area of the valley proper is 15,700 square miles, or 10,048,000 acres; including mountains and minor valleys it comprises more than 58,000 square miles.

On the east side the valley has since the beginning of Cretaceous time been bordered by the Sierra Nevada; on the west side diastrophic processes have gradually built up the barrier of the Coast Ranges, changing the depression from a gulf of the sea to a lake and from a lake to a drained valley. From the beginning of the Cretaceous period the Great Valley has been the depository of enormous masses removed by erosion from the rising land on the east, and to a less degree also of the débris from the Coast Ranges.<sup>1</sup>

The northern portion of the Great Valley is drained by Sacramento River; the southern portion is drained by the San Joaquin. The two rivers unite at the head of Suisun Bay, from which they pass through San Pablo and San Francisco Bay and the Golden Gate to the Pacific Ocean.

The area drained by the Sacramento is divisible, according to elevation, into three parts—(1) the central region, known as the Sacramento Valley, whose general altitude is less than 500 feet above sea level; (2) the foothill region, made up of hills and ridges ranging in altitude from 500 to 2,300 feet and traversed by ravines and canyons of moderate depth; (3) the mountain region, in which altitudes exceed 2,300 feet above sea level.

Sacramento Valley, which is by far the most important area in the drainage basin, lies along the lower course of Sacramento River for a

<sup>1</sup> Lindgren, Waldemar, Tertiary gravels of the Sierra Nevada, California: U. S. Geol. Survey Prof. Paper 73, p. 15, 1911.

distance of about 150 miles northward from its mouth. The altitude of the valley ranges from about 300 feet above sea level at Red Bluff to only a few feet at the mouth of the river. Except for Marysville Buttes, in its center, its slope is gentle and uniform, ranging from approximately 4 feet to the mile in the north to less than 6 inches to the mile in the south.

The monotonous surface of the alluvial plains of the Sacramento Valley is scarcely broken by any recognizable relief; the lowest depressions are covered with swamp grass and tule, among which are tortuous sloughs and sheets of standing water, widening in flood times to vast lakes. The only sharply salient features are the river banks of sand and clay, from a few feet to 20 feet high. The valley floor is the gently sloping surface of a Pleistocene lake bottom, only recently drained by constructive processes. The rivers are at their base level and in their sluggish course deposit the loads of sand and clay brought down from the mountains, corrade their banks, and endeavor to establish new and changing channels.<sup>2</sup>

The total area of Sacramento Valley is about 4,250 square miles, including 2,510 square miles of high lands not subject to overflow but requiring irrigation for successful farming; 450 square miles of lower lands, overflowed occasionally; 1,250 square miles of low lands, overflowed periodically and submerged for a considerable period of the year; and 38 square miles of perennial stream surface.<sup>3</sup> It is thus evident that about 40 per cent of the valley suffers from floods and about 60 per cent from drought. The valley as a whole suffers from an excess of water at one season and a deficiency at another. The problem of remedying these defects embraces three distinct phases—the preservation and improvement of navigation, the reclamation of swamp and overflowed lands, and the development of irrigation for all the higher lands.

The floods occur in winter or early spring. The largest floods for which there are stream-flow records were those of 1904, 1906, and 1909.

From the rim of the valley there is a gentle rise across the zone of low-lying foothills and a steeper rise up the mountain side to the divide on the summit of the encircling ranges. The eastern watershed ranges in altitude from 10,000 feet in the south to 6,000 feet in the north; the western watershed ranges from 4,000 feet in the south to 9,000 in the north; and the northern from 4,000 to 8,000 feet, exclusive of Mount Shasta, which rises 14,161 feet above sea level.

The mountain ranges surrounding the basin belong to the Cordilleran system. The Sierra Nevada has an average width of approximately 70 miles from the rim of the valley to the crest of the range, which lies only a few miles west of the eastern boundary of the State. The range terminates in the Warner Mountains, in the northeastern part of the State, a region presenting evidence of recent volcanic action. Vast beds of lava cover the western slope of the

<sup>2</sup> Lindgren, Waldemar, *op. cit.*, p. 17.

<sup>3</sup> California Com. Pub. Works Rept., 1894, p. 28.

range, and many cones, craters, ash deposits, and lakes exist in the vicinity of Mount Shasta and Lassen Peak, which are themselves the cones of extinct volcanoes. The Coast Range has an average width of 35 miles from the rim of the valley to the crest, which lies inland from the shore at a distance ranging from 30 miles at the south to nearly 100 miles at the north, where the range takes the name Trinity Mountains.

## DRAINAGE

### THE MAIN STREAM

The mountain torrent that forms the head of Sacramento River issues from a small lake (unnamed on the map) lying 6,600 feet above sea level on Mount Eddy, one of the peaks of the Trinity Mountains. About 8 miles east of this lake, or 12 miles by the course of the stream, it receives Wagon Valley Creek, which is fed by springs emerging from the lava beds at the southwest base of Mount Shasta, springs that are frequently referred to as the source of the Sacramento. At a point 370 miles south of its junction with Wagon Valley Creek the river unites with the San Joaquin and enters Suisun Bay, 50 miles from San Francisco.

The river is joined by numerous tributaries from the east and west. Those coming from the Sierra Nevada flow almost southwest; those from the Coast Range flow in a general easterly direction. The broad western slope of the Sierra furnishes by far the larger part of the drainage and all the important tributaries. Most of the streams from the Coast Range do not reach the Sacramento directly but become lost "in the intricate plexus of sloughs which meander through the tule lands bordering the main river. On the east, also, only the larger tributaries reach the Sacramento by a definite channel, and often that becomes an exceedingly tortuous one."<sup>4</sup>

Of the total fall of the river—6,600 feet from source to sea level—5,913 feet occurs in the 56 miles above the mouth of Pit River and 447 feet more in the 67 miles between Pit River and Red Bluff, leaving only 240 feet of fall for the remaining 250 miles of the course. The distribution of the fall is indicated by the following table of distances and elevations:

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<sup>4</sup> Ransome, F. L., *The Great Valley of California*: California Univ. Dept. Geology Bull., vol. 1, p. 379, 1896.

*Distances and elevations along Sacramento River from source to mouth*

	Distance	Elevation above sea level	Distance between points	Fall between points	Fall per mile
	<i>Miles</i>	<i>Feet</i>	<i>Miles</i>	<i>Feet</i>	<i>Feet</i>
Source.....	0	6, 600			
Wagon Valley Creek (mouth).....	12	3, 400	12	3, 200	266
Delta.....	40	1, 000	28	2, 400	86
Mouth of Pit River.....	56	687	16	313	20
Redding (bridge above).....	76	500	20	187	9
Red Bluff.....	123	240	47	260	5. 5
Tehama.....	140	190	17	50	3
Stony Creek (mouth).....	177	140	37	50	1. 3
Junction with San Joaquin River.....	370	0	193	149	. 8

Above the mouth of Pit River the Sacramento is a comparatively small stream, flowing swiftly in a well-defined channel; below the Pit it is larger, and at Red Bluff, where it enters Sacramento Valley, it becomes a sluggish stream of small slope. It is navigable to Red Bluff, 250 miles above its mouth.

Below the mouth of Stony Creek, throughout a large part of its course, the Sacramento occupies a ridge 5 to 20 feet higher than the troughs of the nearly parallel flood basins on each side, which are 2 to 7 miles from the river. The channel capacity throughout this distance is less than one-third that necessary to carry ordinary floods.

The large overflow area on the west side of the Sacramento is divided into two basins—Colusa Basin on the north and Yolo Basin on the south—by a ridge of detritus brought down by Cache Creek. The flood area on the east side of the river is divided into four basins—called, from north to south, Butte, Sutter, American, and Sacramento—by Marysville Buttes and Feather and American Rivers. The total area of these large flood basins is about 900 square miles.

The following data in regard to the area and capacity of these basins are taken from the Report of the Commissioner of Public Works to the Governor of California for 1904:<sup>5</sup>

Colusa Basin is 50 miles long, from 2 to 7 miles wide, and has a capacity of 690,000 acre-feet at flood stage. It discharges into the Sacramento above Knights Landing through Sycamore Slough.

Yolo Basin is 40 miles long, 7 miles in average width, and its capacity at flood stage is 1,115,000 acre-feet. It discharges through Cache Slough into Steamboat Slough and thence into the Sacramento near the foot of Grand Island, about 25 miles above the head of Suisun Bay.

<sup>5</sup> For detailed information regarding flood-control works see "Sacramento flood control project, revised plans," submitted to the reclamation board by W. F. McClure, State engineer, February 10, 1925.

Butte Basin is north of Marysville Buttes and its area varies from 30 to 150 square miles, depending on the river stage; its capacity at flood stage is 450,000 acre-feet. It discharges through Butte Slough into Sutter Basin.

Sutter Basin is south of Marysville Buttes and north of Feather River. Its area is 138 square miles, and its flood-stage capacity is 895,000 acre-feet. It discharges into Sacramento River through sloughs above the mouth of Feather River.

American Basin is south of Feather River and north of the American. Its area is 110 square miles, and its capacity at flood stage is 571,000 acre-feet. It discharges into the Sacramento north of the city of Sacramento, but owing to its great depth it is never free from water.

Sacramento Basin is a narrow strip south of American River, extending from the city of Sacramento to Walnut Grove. It is filled by overflow from Mokelumne River or the Sacramento, but not so frequently as the other basins are filled.

Many islands have been formed in the delta region between the lower courses of the Sacramento and the San Joaquin. Several sloughs carry the water of one river to the other among the islands, especially at higher river stages. The islands range in size from 1,600 to 43,000 acres and are very fertile.

## THE TRIBUTARIES

### PIT RIVER

Pit River is formed near Alturas, in Modoc County, by the union of its North and South Forks. The South Fork rises on the western slope of Warner Mountains, about halfway between Warren and Eagle Peaks, at an altitude of 8,000 feet above sea level, flows southwestward 10 miles, westward about 10 miles, and northward 16 miles through a swampy meadow to its junction with the North Fork. The North Fork flows southward from a point about half a mile south of Goose Lake but normally receives no overflow from that body of water. As overflow has, however, been recorded,<sup>6</sup> and as it is possible that water from the lake may reach the river by underground channels in the porous lavas which characterize this section, the area tributary to the lake is considered a part of the Pit River Basin. The principal direct tributaries of the North Fork of the Pit—Swedrengen, Joseph, and Parker Creeks—rise on the western slopes of the Warner Mountains, 6,000 feet above sea level, and flow westward, descending 1,200 feet in courses that measure less than 12 miles.

From Alturas the Pit takes a general southwesterly course to its junction with the Sacramento about 12 miles north of Redding.

<sup>6</sup> Waring, G. A., Geology and water resources of a portion of south-central Oregon: U. S. Geol. Survey Water-Supply Paper 220, p. 38, 1908. See also U. S. Geol. Survey Water-Supply Paper 295, p. 40, 1912.

The total fall between the head of the South Fork and the mouth of the main stream is about 7,300 feet, of which 3,550 feet occurs on the South Fork in the first 18 miles of its course.

Physically the Pit Basin is not tributary to the larger Sacramento Basin but is really its upper extension under a different name. It comprises about 7,000 square miles, equal to about 23 per cent of the total area of the Sacramento River Basin. The greater part of the Pit Basin exceeds 4,000 feet in altitude and consists chiefly of barren lava beds in the north and numerous small, flat, marshy meadow valleys in the south. The area contains also many volcanic buttes and peaks, of which Mount Shasta (14,161 feet above sea level) and Lassen Peak (10,437 feet above sea level) are the most important, but these peaks are on the Pit Basin divide and are shared in common with the upper Sacramento and Feather River Basins, respectively.

About 50 per cent of the Pit Basin is devoid of forests, the timberless area lying chiefly in the northern and eastern parts. There are two well-forested areas in the basin—one south of Pit River and north of Lassen Peak, and the other north of Pit River and south of Mount Shasta, extending westward from Fall River to the upper Sacramento River and including the McCloud Basin. All the public land in the forested areas is included in national forests.

The principal tributaries of Pit River are McCloud River, Squaw Creek, and Fall River, from the north, and Burney, Hat, Beaver, Ash, and West Valley Creeks from the south. McCloud and Fall Rivers are the largest, each having a minimum flow of 1,200 to 1,500 second-feet. Hat and Burney Creeks have a minimum flow of less than 100 second-feet. Goose Lake, though topographically tributary to the Pit Basin, has discharged water to it only once since 1869; it is said to have overflowed in 1881 for more than two hours during a severe storm from the north.

McCloud River drains an area comprising 649 square miles, lying just east of the upper Sacramento Basin. The river rises in large springs southeast of Mount Shasta, but its main water supply comes directly from the southern and eastern slopes of Mount Shasta through Squaw, Mud, Cold, and Ash Creeks, its tributaries. The river flows southward, is about 60 miles long, and falls more than 4,000 feet. It discharges into Pit River about 4 miles east of the confluence of the Pit with the Sacramento.

The precipitation in Pit River Basin is very unevenly distributed. In the upper eastern part of the basin it is only about 10 inches annually and occurs largely as snow, which at moderate altitudes soon melts. In the western and northwestern parts, however, the mean annual precipitation may reach 75 inches, according to altitude and occurs principally as rain except on the upper slopes of Mount Shasta, Lassen Peak, and other high peaks. In the McCloud Basin



it is seldom less than 40 inches and occasionally reaches 100 inches. Practically all the precipitation is confined to the rainy season—from November to April of each year.

The valleys of the Pit Basin are used chiefly for meadow lands and the growing of stock feed. Some of them are flooded artificially for the raising of wild hay. The uplands are used only for domestic pasturage and for general stock raising, which is carried on extensively.

Numerous reservoir sites on the upper reaches of the Pit and its tributaries have been surveyed by the United States Bureau of Reclamation. A reservoir at the Big Valley site, near Bieber, would store more water than the river furnishes at this point. Warm Spring Reservoir, at Canby, would also have a large storage capacity.

The basin also affords exceptional opportunities for power development, especially below Fall River Mills, which is about halfway between the source and mouth of the Pit. The installed capacity of power plants on Pit River and tributaries is about 210,000 horsepower.

Many perennial springs issue from crevices in the lava beds and some of them discharge several hundred second-feet. Fall River is fed by large springs about 10 miles above its mouth, which discharge approximately 1,500 second-feet. Hat and Burney Creeks are fed largely by springs, and McCloud River draws heavily from numerous large springs on the southern slope of Mount Shasta. Most of the smaller tributaries are also spring fed.

#### COTTONWOOD CREEK

Cottonwood Creek has three principal forks—North, Middle, and South Forks. North Fork rises in Bully Choop Mountain, which reaches an altitude of 7,073 feet above sea level. It is about 20 miles long, drains an area of 112 square miles, and has a total fall of about 4,200 feet. It unites with Middle Fork a short distance below Gas Point. Middle Fork is about 30 miles long, has a fall of 5,900 feet, and drains an area of 261 square miles. South Fork rises in the Yolla Bolly Mountains, which reach an altitude of about 6,000 feet above sea level, and unites with the main creek a few miles west of the town of Cottonwood; it is about 45 miles long, drains an area of 395 square miles, and has a fall of 4,600 feet. The main creek flows eastward and empties into the Sacramento about 5 miles east of the town of Cottonwood and opposite the mouth of Battle Creek. The total drainage area is 929 square miles.

The crest of the Coast Range, which forms the western boundary of the basin for a distance of about 50 miles, ranges in altitude from 6,000 to 8,000 feet above sea level. From the crest toward the east, the basin slopes rapidly to the foothills around the north end of

the Sacramento Valley, and is regularly furrowed by numerous drainage ways. About two-thirds of the area is more than 1,000 feet above sea level.

The basin is well timbered, but at the lower altitudes the growth is more or less scrubby. The upper part of the basins of Middle and South Forks is included in the Trinity National Forest.

The mean annual precipitation ranges from 25 inches in the lower part, where it occurs as rainfall, to more than 50 inches along the crest of the Coast Range, where much of it occurs as snow.

Some irrigation is carried on in this basin, especially in the northern part along the North Fork.

#### STONY CREEK

Stony Creek drains an area on the eastern slope of the Coast Range, north of the Cache Creek Basin and south of the basin of Thomas Creek, which lies between it and the Cottonwood Creek Basin on the north. The total drainage area comprises about 828 square miles, of which about 600 square miles is embraced in an irregular parallelogram, 10 to 15 miles wide, that touches the crest of the range for a distance of 50 or 60 miles. The creek rises in the south end of this area and flows northward along its eastern border about 35 miles, then northeastward about 15 miles, and finally southeastward to its junction with the Sacramento near St. John. The creek is about 90 miles long, and its fall is 4,000 to 5,000 feet.

The principal tributaries of Stony Creek are Little Stony Creek from the south end of the area, Briscoe Creek from its middle, Grindstone Creek from its north end, and North Fork, which enters the main creek about 10 miles northwest of Orland.

The drainage basin of Stony Creek is somewhat peculiar, topographically and geologically. The main stream lies wholly in sedimentary rocks; the tributaries from the west come from the granitic crest of the range and have heavy gradients. At various points in the basin the streams intersect conglomerate ridges which, because of their resistance to erosion, have produced favorable sites for dams and reservoirs. The basin ranges in altitude from a few hundred feet in the valley to 6,000 feet or more at the summit of the range.

The basin is covered with a good growth of grass and dense brush at the lower altitudes and heavy, commercially valuable timber on the mountain summits. About three-fourths of the upper basin is included in a national forest.

The mean annual precipitation ranges from 18 inches in the valley to 40 inches or more on the mountain summits, where more or less of it occurs as snowfall. The heaviest floods occur during the winter.

Water is stored in East Park Reservoir, on Little Stony Creek, for irrigation use on the Orland project, United States Bureau of Reclamation. Additional storage for this project is now under construction at the Stony Gorge site.

#### FEATHER RIVER AND ITS TRIBUTARIES

##### THE MAIN STREAM

Feather River heads on the crest of the Sierra and takes a general southwesterly course to its junction with the Sacramento about 30 miles south of Marysville and about 15 miles northwest of Sacramento. It is about 175 miles long and its drainage area comprises approximately 6,590 square miles, lying on the western slope of the Sierra Nevada, south of the Pit River Basin and north of the American River Basin.

The basin is roughly triangular in shape and is naturally subdivided into three other comparatively large basins—North Fork Basin at the north and west, with a total drainage of about 2,220 square miles; Middle Fork Basin, in the center and at the east, with a total drainage area of about 1,340 square miles; and Yuba Basin at the south, with a total drainage area of more than 1,300 square miles.

The drainage basin of the North Fork, here regarded as the continuation of the main stream, includes the eastern part of Butte, the greater part of Plumas, and the southwestern corner of Lassen Counties. In length the North Fork Basin does not exceed 75 miles, and its width in Plumas County is about 65 miles.

The Middle Fork Basin is long but comparatively narrow except at its east end, where it broadens and includes Sierra Valley, a large meadow valley at an altitude 5,000 feet above sea level. Beckwith Pass, which opens into this valley from the east, is the lowest pass in the Sierra Nevada, its altitude being about 5,200 feet above sea level. Sierra Valley and the surrounding country are very dry in the summer. The greatest altitude in the Middle Fork Basin is about 8,500 feet. The Middle Fork unites with the North Fork in Butte County, about 6 miles northeast of Oroville.

Above Prattville are two small basins of almost equal size, the eastern being drained by Hamilton Branch and the western by North Fork. The eastern basin ranges in altitude from 4,300 to 7,500 feet, has an area of 230 square miles, and includes the East Arm of Big Meadows and the large level area called Mountain Meadows. The western basin has an area of 245 square miles, ranges in altitude from 4,300 to 10,000 feet, and includes the West Arm of Big Meadows and the higher country about Lassen Peak. Hamilton Branch unites with North Fork about 3 miles east of Prattville, at the lower end of Big Meadows.

The greater part of the Feather River Basin is rough and mountainous, and the slopes are deeply trenched by numerous stream channels. The rocks in the southern and eastern parts of the basin are principally granite; at the lower altitudes some porous and deeply eroded slate and lava are also found. The northern part of the basin is characterized by cones, craters, deposits of volcanic ash, and lakes, which indicate recent volcanic activity. The soil of the basin is porous, absorbs moisture readily, and serves to equalize the stream flow. The numerous meadows and valleys that exist in different parts of the area also help to maintain a steady flow in the streams during the dry season.

The basin is well forested. At the lower altitudes the growth consists for the most part of brush and scrubby timber. The mountain sides, except around the summits of the highest peaks, like Lassen, are covered with merchantable timber. About two-thirds of the entire basin, 4,300 square miles in round numbers, is inclosed in national forests, which include all the upper part of the basin except Sierra Valley on Middle Fork, the meadows around Prattville on North Fork, and a few other very small valleys.

The mean annual precipitation in the Feather Basin is about 30 inches in the foothill belt and increases toward the mountain summits. It ranges from 40 to 60 inches in the North and Middle Fork Basins at the north and east, and from 40 to 75 inches in the Yuba Basin at the south. In the winter much of it occurs as snowfall which does not disappear from the summits until summer.

Very little irrigation is practiced in the Feather Basin, though some water is diverted for use in the small valleys and in the Sacramento Valley below the foothills. Considerable water is used for mining and power.

The basin affords many excellent storage sites, especially on the North and Middle Forks. Surveys of a large number of reservoir sites in this area have been made by the United States Bureau of Reclamation and many others have been made by private companies.

The basin has many large springs, especially in the lava districts, which supply a more or less steady flow throughout the year. Many perennial springs are found in the Yuba Basin. The Feather Basin also contains many small glacial lakes, chiefly in Yuba and North Fork Basins.

Lake Almanor Reservoir (Big Meadows) was completed in 1914 to a capacity of 300,000 acre-feet. In 1926 the dam was raised, increasing the capacity to 1,300,000 acre-feet. The Butte Valley Reservoir has a capacity of 50,000 acre-feet.

The installed capacity of power plants on the North Fork of Feather River is more than 200,000 horsepower, and the ultimate development is estimated at 1,000,000 horsepower. The power

resources of the Middle Fork of Feather River are important but undeveloped.

#### YUBA RIVER

Yuba River rises near the crest on the western slope of the high Sierra and flows southwestward to its junction with Feather River at Marysville. The total length of the stream is about 90 miles. Its basin lies south of the Middle Fork of Feather River Basin, west of the Truckee River Basin, and north of the American and Bear River Basins, is chiefly in Yuba, Sierra, and Nevada Counties, and is one of the principal subdivisions of the Feather River Basin. It has an area of more than 1,300 square miles and is triangular in shape, the base of the triangle lying along the crest of the Sierra. Its extreme length from the mouth of Yuba River to the crest of the Sierra is about 70 miles, and its greatest width is about 35 miles. The river is formed by three principal forks—Middle, North, and South. The Middle Fork, which is considered the continuation of the main stream, rises in Sierra and Nevada Counties on the west and south slopes of Weber Peak and takes a general southwesterly course. It receives the North Fork in Yuba County, in the northeastern part of T. 17 N., R. 7 E., and the South Fork in Nevada County, in the southwestern part of T. 17 N., R. 7 E.

The topography of the Yuba Basin is rugged and mountainous. From the edge of the Sacramento Valley the surface rises gently through the foothills and then more abruptly through rounded and broken mountains to the crest of the Sierra, which along the Yuba-Truckee divide has a mean altitude of about 8,000 feet and a few peaks exceeding 9,000 feet. The streams have cut deep canyons which head well up in the mountains. Slate and kindred rocks, much eroded, are found in the lower western part of the basin; in the higher eastern part the rocks are granite and lava. A stratum of serpentine traverses the basin parallel to the crest but at a considerable distance from it.

The soil is deep in most places and supports a hardy growth of brush and timber, especially along the sides of the canyons. The North Fork Basin has at present the best forest cover, and that of South Fork the poorest, but this difference is the result of lumbering operations. All the upper part of the Yuba Basin, more than 800 square miles, is now included in a national forest.

The mean annual precipitation ranges from 18 inches at Marysville to about 70 inches near the mountain crest. In the upper and central parts of the basin the precipitation ranges from 50 to 70 inches and occurs principally as snow, which remains on the ground all winter and well into the summer. The North and South Fork Basins probably receive the largest precipitation.

Little irrigation is practiced in the Yuba River Basin, but the main stream could undoubtedly be used for irrigating a part of the Sacramento Valley.

Several storage sites have been developed in the Yuba River Basin, including numerous small lakes near the headwaters of the South Fork. Stored water was originally used in hydraulic mining. At present the water is used for irrigation along the foothill fruit belt and for the development of power.

The principal power developments on Yuba River are those of the Pacific Gas & Electric Co. at the Colgate and Bullards Bar plants, about 12 miles above the gaging station at Smartsville, and those using water from Lake Spaulding on the South Fork of Yuba River.

Perennial springs are found in different parts of the Yuba River Basin, particularly along the North Fork. At the higher altitudes in the South Fork Basin are many small glacial lakes, and here also are many rounded, denuded summits and glacial valleys.

The channel of Yuba River for many miles above its mouth has been filled with enormous quantities of tailings from hydraulic mining. The depth of this débris is about 7 feet at the mouth; about 26 feet at Daguerre Point, 11 miles above the mouth; and about 84 feet in The Narrows, 18 miles above the mouth. A débris storage dam has been built at Bullards Bar and is used jointly for storing débris from hydraulic mining and for the development of power.

#### INDIAN CREEK

Indian Creek rises in the Sierra divide and flows westward to its junction with North Fork of Feather River. The stream is about 50 miles long and its drainage area, comprising 733 square miles,<sup>7</sup> is much greater than that of North Fork above the junction of the two streams. The basin is in the northeastern part of Plumas County, north of Middle Fork of Feather River and east of the upper part of North Fork. For about 45 miles it lies along the Sierra divide, which separates it from Honey Lake drainage basin at the east. The principal tributaries are Squaw, Red, Clover, Little Grizzly, and Spanish Creeks from the south and Light and Wolf Creeks from the north.

Practically all of the Indian Creek Basin has an altitude exceeding 5,000 feet, and much of it is a lava formation 6,000 to 7,000 feet in altitude. The entire basin is included in a national forest except a few meadows, of which Indian and American Valleys are the largest.

The mean annual precipitation is between 40 and 45 inches, and a large part of it occurs as snowfall. During the winter the streams freeze over occasionally.

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<sup>7</sup> U. S. Recl. Service Fourth Ann. Rept., p. 93, 1906.

The basin affords several good storage reservoir sites. Opportunities for power development are also good. With the available fall, the flow of the streams is sufficient to generate at least 20,000 horsepower continuously, and by utilizing storage 60,000 horsepower could be developed.

#### BEAR RIVER

Bear River drains a narrow strip on the western slope of the Sierra below an altitude of 5,500 feet. The basin is about 60 miles long and not more than 10 miles wide and lies south of the Yuba River Basin and north of the American River Basin. Its total area is less than 300 square miles.

The river rises in the extreme northeastern part of the basin near Emigrant Gap and flows southwestward to its junction with Feather River about 15 miles south of Marysville. It is the boundary line between Nevada and Placer Counties and closely parallels the Bear-American divide, which is 1 to 2 miles south of it. Its principal tributaries are Steep Hollow Creek, Greenhorn River, and Wolf Creek, all from the north.

The Bear River Basin has very little forest, except on a small area in the upper part. The mean annual precipitation ranges from 21 inches in the valley to 52 inches at the source of the river, where much of it occurs as snow that soon disappears.

Some irrigation is practiced in this basin. Storage is not feasible, and the minimum flow of the streams is not sufficient to develop much power. Water diverted from Lake Spaulding, after passing through the Drum power plant, is discharged into Bear River. Bear River Canal diverts water near Colfax for power; this water is afterward used for irrigation in the foothill area near Auburn.

#### AMERICAN RIVER

American River drains the area lying on the western slope of the Sierra, south of the Bear and Yuba River Basins west of Lake Tahoe and the Truckee River Basin, and north of the Consumnes and Mokelumne River Basins. The area is triangular in shape, about 80 miles long, and has a maximum width of 50 miles along the crest of the Sierra, and its total area is about 2,000 square miles.

American River is formed by the union of its three principal forks and flows southwestward about 110 miles to its junction with the Sacramento just above the city of Sacramento. North and Middle Forks are about 60 miles long, with a fall of nearly 8,000 feet and drain areas measuring, respectively, 349 and 640 square miles. South Fork, about 60 miles long, falls nearly 9,000 feet and drains an area of 861 square miles. North and Middle Forks unite near Auburn, about 20 miles above the mouth of South Fork, which is only a few

miles above Folsom. Each of the forks has many other forks, branches, and tributaries.

Almost half of the American drainage basin exceeds 5,000 feet in altitude and probably one-third of it ranges from 6,000 to 9,000 feet. The rocks of the upper part are chiefly granites, which have yielded to glacial and erosional action to such an extent as to form many regular ridges and drainage channels.

The lower portions of the basin are barren or sparsely timbered, but the higher portions support a good growth of timber. All the upper part of the basin, amounting to considerably more than half of the total, is included in a national forest.

The mean annual precipitation ranges from 21 inches in the Sacramento Valley to probably 60 inches near the summit of the Sierra, where it occurs as snow which does not disappear till summer. In the foothill region it ranges from 25 to 30 inches and in the central region from 45 to 55 inches. It is probably somewhat greater in the northern than in the southern part of the basin. At the higher altitudes there is much snow and ice during the winter.

Some water is diverted from the American for irrigation, particularly in the Sacramento Valley. Considerable storage is feasible, particularly on Middle and South Forks.

The upper part of the American Basin shows evidence of glaciation, which has left many small lakes, some of which have been dammed and used for storage in connection with mining.

The installed capacity of the two power plants on South Fork of American River is 46,000 horsepower. The storage developed for these plants amounts to 32,000 acre-feet. The storage and power developments on the North and Middle Forks are small.

#### CACHE CREEK

The Cache Creek drainage basin lies on the eastern slope of the Coast Range in Lake, Colusa, and Yolo Counties, immediately south and west of the south end of the Stony Creek Basin and north of the Putah Creek Basin. The upper part of the area, comprising about 824 square miles, lies in the central part of Lake County, south of the divide separating the Eel River and Cache Creek Basins. It is roughly rectangular in shape, and contains Clear Lake in its center. From Lake County the basin extends southeastward to the Sacramento Valley as a strip about 50 miles long and 10 miles wide. The total area of the basin is 1,290 square miles.

Cache Creek is the only known outlet of Clear Lake. The lake is very irregular in shape and has an area of 65 square miles and an altitude of 1,325 feet at mean level. Its length is 20 miles and its greatest width 7 miles. The upper part, or main lake, has a maximum depth of 35 feet, but the lower neck has a few small areas as much as



50 feet in depth. The drainage area tributary to the lake is about 417 square miles, chiefly toward the south and west. The principal creeks flowing into the lake are Scotts, Middle, and Clover from the west, and Doba, Kelsey, and Cole <sup>8</sup> from the south. They are torrential during the rainy season, but are practically dry in the summer.

From the lake Cache Creek flows southeastward to the Yolo Basin and ultimately into Sacramento River through sloughs. Its total length is about 80 miles.

The largest and most important tributary of Cache Creek is the North Fork, which drains 250 square miles in the eastern part of Lake County. The only other important tributary is Bear Creek, which drains the western part of Colusa County. These creeks are very small in the summer, but rarely become dry. All the tributaries are torrential during the rainy season.

The upper part of the Cache Creek drainage basin in Lake County is mountainous and very rugged. Some of the peaks reach an altitude of 6,000 feet above sea level, and their slopes, as well as those of the lower ranges, are very steep. About 5 miles below the outlet the creek enters Cache Creek Canyon, in which it flows for 25 miles on an average grade of 35 feet to the mile. In some places the canyon walls are vertical cliffs 300 feet high. Below the canyon the creek enters Capay Valley, from 1 to 3 miles wide and 20 miles long, through which it winds for a distance of nearly 30 miles before entering the Sacramento Valley.

On the northern slope of the ranges around Clear Lake are fine belts of fir, oak, and pine. Elsewhere on the high ranges the vegetation consists of a dense growth of greasewood and chaparral. A strip along the northern edge of the basin is included in a national forest.

The mean annual precipitation ranges from 17 inches in the Sacramento Valley to 40 inches or more on the mountainous summits in Lake County, where much of it occurs as snowfall in the winter.

The upper part of this basin contains springs, a number of which, especially in the North Fork Basin, have medicinal properties that attract many visitors.

#### PUTAH CREEK

The Putah Creek Basin lies on the eastern slope of the Coast Range south of the Cache Creek Basin and north of Napa Valley. It includes the southern part of Lake County, the northern half of Napa County, and small parts of Yolo and Solano Counties. The basin is rather long from northwest to southeast and comparatively narrow, being about 20 miles wide at the north and less than 10 miles at the east. It has a total area of about 810 square miles.

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<sup>8</sup> Cole Creek is not named on Punnett's map of Lake County or on the sketch map accompanying Water-Supply Paper 45 (Pl. I).

Putah Creek rises in the northwestern corner of the basin in the St. Helena Range and flows southeastward into the Yolo Basin near Davis, and thence into Sacramento River through Cache Slough. The total length of the creek is about 80 miles. It has numerous tributaries which have a heavy flood discharge in the winter but are practically dry during the summer. The chief tributaries are Soda Creek from the north and Pope Creek from the west.

The topography of the Putah Creek Basin is very rugged. Much of the upper basin is rough and precipitous. The underlying rock is an impervious slate and serpentine with only a thin soil covering. There is very little tilled land in the basin except below the foothills. Altitudes range from about 100 feet in the valley to about 5,000 feet on the mountain summits.

The lower parts of the basin are comparatively barren of timber, though they support a considerable growth of grass and brush which extends down as far as the foothills. At moderate altitudes timber grows scatteringly, and the mountain summits are covered by a fairly heavy timber growth.

The mean annual precipitation varies widely in the different parts of the basin. Along the foothills it averages about 28 inches, in the central part about 40 inches, and along the crest of the divide, where some of it occurs as snowfall in the winter, about 65 inches. Helen Mine, on the northern slope of Mount St. Helena, receives almost 100 inches annually.

Below the foothills is a large area of rich irrigable land, which could be supplied with water from Putah Creek. Some of this land is already irrigated and has been proved to be susceptible of the highest state of cultivation.

At least two good reservoir sites exist on the main stream, one near Winters and the other near Guenoc.

## STREAM FLOW GAGING STATIONS

The following list comprises the gaging stations that have been maintained in the Sacramento River Basin. The stations are arranged in downstream order, tributaries being indicated by indentation. A dash after the last date in a line indicates that the station was being maintained September 30, 1927.

Sacramento River at Castella, Calif., 1910-1922.  
 Sacramento River at Antler, Calif., 1910-11, 1919-  
 Sacramento River at Kennett, Calif., 1925-  
 Sacramento River near Red Bluff, Calif., 1895-  
 Sacramento River at Butte City, Calif., 1921-  
 Sacramento River at Colusa, Calif., 1921-  
 Sacramento River at Knights Landing, Calif., 1921-

- Sacramento River at Verona, Calif., 1926-  
Sacramento River at Collinsville, Calif., 1878-1885.  
Pit River near Canby, Calif., 1904-5.  
Pit River near Bieber, Calif., 1904-1908, 1914, 1921-1926.  
Pit River at Fall River Mills, Calif., 1921-  
Pit River near Pecks Bridge, Calif., 1922-1924.  
Pit River at Lindsay Flat, Calif., 1922-1927.  
Pit River at Big Bend, Calif., 1910-  
Pit River near Ydalpom, Calif., 1910-  
    South Fork of Pit River near Ivy, Calif., 1904-5.  
        West Valley Creek near Likely, Calif., 1904-5.  
        Pine Creek near Alturas, Calif., 1918-  
Ash Creek at Adin, Calif., 1904-5.  
Fall River at Fall River Mills, Calif., 1912-13.  
    Bear Creek near Dana, Calif., 1921-1926.  
Hat Creek near Hat Creek, Calif., 1926-  
Hat Creek at Hawkins ranch, Calif., 1911-1913.  
Hat Creek at Wilcox ranch, near Cassel, Calif., 1921-22.  
Hat Creek at Hat Creek, Calif., 1910-1913.  
Hat Creek near Carbon, Calif., 1921-22.  
    Rising River near Cassel, Calif., 1911-1913, 1921-22.  
Burney Creek above Burney, Calif., 1921-22.  
Burney Creek near Burney, Calif., 1911-1913, 1921.  
Burney Creek at Burney Falls, Calif., 1921-22.  
Kosk Creek near Big Bend, Calif., 1910-1915.  
Montgomery Creek at Montgomery Creek, Calif., 1911-1913.  
Squaw Creek near Ydalpom, Calif., 1911-1913.  
McCloud River near Gregory, Calif., 1902-1908.  
McCloud River at Baird, Calif., 1911-  
Clear Creek near Shasta, Calif., 1911-1913.  
Cow Creek at Millville, Calif., 1911-1913.  
    Clover Creek at Millville, Calif., 1911-1913.  
    Little Cow Creek near Palo Cedro, Calif., 1911-1913.  
Bear Creek near Millville, Calif., 1911-1913.  
North Fork of Cottonwood Creek near Ono, Calif., 1919.  
North Fork of Cottonwood Creek at Ono, Calif., 1907-1913.  
    Moon Creek near Ono, Calif., 1919.  
Mill Creek near Los Molinos, Calif., 1911.  
Thomas Creek at Paskenta, Calif., 1920-  
Deer Creek near Vina, Calif., 1911-1915, 1920-  
Stony Creek near Fruto, Calif., 1901-1912.  
Stony Creek near Stonyford, Calif., 1913-1914, 1918-  
Stony Creek near Elk Creek, Calif., 1919-  
Stony Creek near Orland, Calif., 1919-  
    Little Stony Creek near Lodoga, Calif., 1908-  
North Fork of Feather River above Prattville, Calif., 1905-1907.  
North Fork of Feather River near Prattville, Calif., 1905-  
North Fork of Feather River at Big Bar, Calif., 1911-  
North Fork of Feather River at Big Bend, Calif., 1905-1910.  
Feather River at Oroville, Calif., 1902-  
Feather River at Nicolaus, Calif., 1921-  
    Hamilton Branch of Feather River near Prattville, Calif., 1905-1907,  
    Butt Creek at Butte Valley, Calif., 1905-1921,

## Sacramento River Basin—Continued.

## Feather River Basin—Continued.

- Indian Creek near Crescent Mills, Calif., 1906-1918.
- Spanish Creek at Keddie, Calif., 1911-
- Middle Fork of Feather River near Clio, Calif., 1925-
- Middle Fork of Feather River at Sloat, Calif., 1911-
- Middle Fork of Feather River near Nelson Point, Calif., 1924-
- Middle Fork of Feather River near Oroville, Calif., 1911-
- Grizzly Creek near Portola, Calif., 1906, 1925-
- South Fork of Feather River at Enterprise, Calif., 1911-
- Palermo Land & Water Co.'s canal at Enterprise, Calif., 1911-
- Middle Fork of Yuba River at Milton, Calif., 1926-
- Middle Fork of Yuba River near North San Juan, Calif., 1900, 1911-
- Yuba River at Smartsville, Calif., 1903-
- Yuba River at Parks Bar Bridge, Calif., 1900.
- Oregon Creek near North San Juan, Calif., 1911-
- North Fork of Yuba River near Sierra City, Calif., 1924-
- North Fork of Yuba River at Goodyear Bar, Calif., 1910-
- North Fork of Yuba River near North San Juan, Calif., 1900.
- North Fork of North Fork of Yuba River at Downieville, Calif., 1910-1926.
- Rock Creek at Goodyear Bar, Calif., 1910-
- Goodyear Creek at Goodyear Bar, Calif., 1910-
- Canyon Creek above Jackson Creek, Calif., 1926-
- Canyon Creek below Bowman Lake, Calif., 1926-
- Jackson Creek at mouth, Calif., 1926-
- Bear River near Colfax, Calif., 1911-1913, 1915-1917.
- Bear River at Van Trent, Calif., 1904-
- Bear River Canal near Colfax, Calif., 1912-
- North Fork of American River near Colfax, Calif., 1911-
- American River at Fair Oaks, Calif., 1904-
- Middle Fork of American River near East Auburn, Calif., 1911-
- Rubicon River at Rubicon Springs, Calif., 1910-1914.
- Rubicon River near Quintette, Calif., 1909-1914.
- Little Rubicon River near Rubicon Springs, Calif., 1910-11.
- Little South Fork of Rubicon River at South Fork sawmill, near Quintette, Calif., 1910-1914.
- Little South Fork of Rubicon River below Gerle Creek, near Quintette, Calif., 1910-1914.
- Little South Fork of Rubicon River at mouth, near Quintette, Calif., 1909-1911.
- Gerle Creek near Rubicon Springs, Calif., 1910-1912.
- Little South Fork ditch at sawmill, near Quintette, Calif., 1910-1913.
- Pilot Creek near Quintette, Calif., 1910-1914.
- Pilot Creek ditch near Quintette, Calif., 1910-1914.
- South Fork of American River below Silver Fork, at Kyburz, Calif., 1906.
- South Fork of American River at Kyburz, Calif., 1906-7, 1923-24.
- South Fork of American River near Kyburz, Calif., 1907, 1922-
- South Fork of American River near Camino, Calif., 1922-

## Sacramento River Basin—Continued.

## American River Basin—Continued.

South Fork of American River near Placerville, Calif., 1911-1920.

Echo Lake flume near Wade, Calif., 1923-

Medley Lakes outlet near Wade, Calif., 1923-

Silver Lake outlet near Kirkwood, Calif., 1922-

Silver Fork of South Fork of American River near Kyburz, Calif., 1924-

Twin Lakes outlet and spillway near Kirkwood, Calif., 1922-

El Dorado Canal near Kyburz, Calif., 1922-

Alder Creek near Whitehall, Calif., 1922-

Plum Creek near Riverton, Calif., 1922-

Silver Creek at Union Valley, Calif., 1921-

Silver Creek near Placerville, Calif., 1922-

South Fork of Silver Creek at Ice House, Calif., 1922, 1924-

Finnon reservoir outlet near Placerville, Calif., 1922-

Western States Gas &amp; Electric Co.'s flume near Camino, Calif., 1922-

Cache Creek at Lower Lake, Calif., 1901-1915.

Cache Creek at Yolo, Calif., 1903-

Putah Creek near Guenoc, Calif., 1904-1906.

Putah Creek at Winters, Calif., 1905-

## MAXIMUM AND MINIMUM DISCHARGES

Maximum and minimum discharges recorded at stations in the Sacramento River Basin, California

Station	Period of record	Drainage area	Maximum discharge				Minimum discharge
			Date	Gage height	Discharge	Discharge per square mile	
Alder Creek near Whitehall-----	1922-1927	Sq. mi. 22.8	Feb. 6, 1925	Feet 4.95	Sec.-ft. 715	Sec.-ft. 31	Sec.-ft. 0.1
American River at Fair Oaks-----	1904-1927	1,910	Mar. 19, 1907	30.4	119,000	62	3.6
Middle Fork of American River near East Auburn-----	1911-1927	628	Feb. 6, 1925	25.0	36,300	58	23
North Fork of American River near Colfax-----	1911-1927	-----	Jan. 1, 1914	16.0	23,000	-----	15
South Fork of American River near Kyburz-----	1922-1927	-----	May 16, 1927	6.57	3,220	-----	.4
South Fork of American River near Camino-----	1922-1927	-----	Feb. 6, 1925	19.0	18,000	-----	3.7
South Fork of American River near Placerville-----	1911-1920	-----	Jan. 25, 1914	19.0	15,000	-----	49
Butt Creek at Butte Valley-----	1905-1921	73	Jan. 16, 1909	-----	<sup>a</sup> 1,640	22	7
Bear Creek near Dana-----	1921-1926	-----	Feb. 6, 1925	6.0	562	-----	0
Bear River at Van Trent-----	1904-1927	263	Jan. 14, 1909	18.9	29,600	113	.7
Cache Creek near Lower Lake-----	1901-1915	500	Feb. 20, 1909	13.8	4,340	8.7	0
Cache Creek at Yolo-----	1903-1927	1,230	Feb. 2, 1915	27.8	21,100	17	0
North Fork of Cottonwood Creek at Ono-----	1907-1913 {1911-1915 1920-1927}	52	Dec. 31, 1913	9.0	4,180	80	1
Deer Creek near Vina-----	1902-1927	3,640	Dec. 31, 1913	11.0	6,920	-----	60
Feather River at Oroville-----	1902-1927	3,640	Mar. 19, 1907	30.2	187,000	51	<sup>b</sup> 402
North Fork of Feather River at Big Bar-----	1911-1927	-----	Jan. 1, 1914	-----	<sup>a</sup> 35,000	-----	<sup>a</sup> 423
North Fork of Feather River near Prattville-----	1905-1927	506	Mar. 19, 1907	16.2	10,000	20	<sup>c</sup> 0
Middle Fork of Feather River near Nelson Point-----	1923-1927	-----	Feb. 22, 1927	10.98	12,300	-----	36
Middle Fork of Feather River near Oroville-----	1911-1927	1,340	Dec. 31, 1913	18.0	34,200	26	100

<sup>a</sup> Mean daily discharge.<sup>b</sup> Power regulation.<sup>c</sup> Storage at Lake Almanor began in March, 1914.

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Maximum and minimum discharges recorded at stations in the Sacramento River Basin, California—Continued

Station	Period of record	Drainage area	Maximum discharge				Minimum discharge
			Date	Gage height	Discharge	Discharge per square mile	
Middle Fork of Feather River at Sloat.....	1910-1927	Sq. mi. 795	Feb. 22, 1927	Feet 10.1	Sec.-ft. 11,700	Sec.-ft. 15	Sec.-ft. 22
South Fork of Feather River at Enterprise.....	1911-1927	130	Feb. 25, 1917	12.05	10,600	82	.2
Goodyear Creek at Goodyear Bar.....	1910-1927	12.2	Feb. 21, 1927	7.4	1,580	130	1.2
Indian Creek near Crescent Mills.....	1906-1918	740	Mar. 19, 1907	20.2	11,700	16	12
Kosk Creek near Big Bend.....	1910-1915	51.9	May 11, 1915	8.0	2,920	56	19
Little Stony Creek near Lodoga.....	1907-1927	102	Feb. 2, 1909	11.8	7,060	69	4 0
McCloud River at Baird.....	1910-1927	665	Feb. 2, 1917	14.3	27,600	42	740
Medley Lakes outlet near Vade.....	1922-1927	-----	June 21, 1925	2.86	146	-----	0
Oregon Creek near North San Juan.....	1910-1927	-----	Feb. 20, 1927	9.0	5,050	-----	1.0
Pine Creek near Alturas.....	1918-1927	31	Mar. 29, 1919	3.2	147	4.7	2.3
Pit River near Bieber.....	{1904-1908 1914 1921-1926}	2,950	Mar. 19, 1907	16.4	27,500	9.3	0
Pit River at Big Bend.....	1910-1927	4,920	Apr. 29, 1917	5.39	13,600	2.8	* 644
Pit River at Fall River Mills.....	1921-1927	4,150	Apr. 4, 1922	5.96	7,330	1.8	12
Pit River near Ydallpom.....	1910-1927	5,260	Dec. 31, 1913	18.2	47,000	8.9	* 1,000
Plum Creek near Riverton.....	1922-1927	7.0	Feb. 6, 1925	3.70	500	71	.1
Putah Creek at Winters.....	1905-1927	654	Dec. 31, 1913	39.0	60,000	92	0
Rock Creek at Goodyear Bar.....	1910-1927	10.8	do.....	7.0	820	76	.3
Sacramento River at Antler.....	{1910-1911 1919-1927}	461	Nov. 30, 1926	17.0	28,200	61	110
Sacramento River at Castella.....	1910-1922	257	Jan. 2, 1914	13.7	16,000	62	-----
Sacramento River near Red Bluff.....	1895-1927	9,300	Feb. 3, 1909	35.2	278,000	30	2,640
Silver Creek near Placerville.....	1921-1927	-----	Feb. 6, 1925	12.0	7,330	-----	10
South Fork of Silver Creek at Ice House.....	1924-1927	-----	May 16, 1927	3.92	800	-----	.5
Silver Fork of South Fork of American River near Kyburz.....	1924-1927	-----	Feb. 6, 1925	5.25	2,350	-----	* 7.5
Silver Lake outlet near Kirkwood.....	1922-1927	-----	May 16, 1927	3.94	313	-----	.1
Spanish Creek at Keddle.....	1911-1927	-----	Dec. 31, 1913	10.0	9,450	-----	9
Stony Creek near Elk Creek.....	1919-1927	298	Jan. 21, 1921	7.8	10,200	34	0
Stony Creek near Fruto.....	1901-1912	601	Feb. 2, 1909	16.3	36,000	60	.5
Stony Creek near Orland.....	1920-1927	636	Jan. 30, 1921	10.3	19,500	31	0
Thomas Creek at Paskenta.....	1921-1927	-----	Feb. 20, 1927	9.1	11,500	-----	0
Twin Lakes outlet near Kirkwood.....	1922-1927	-----	June 13, 1927	1.93	172	-----	.2
Yuba River at Smartsville.....	1903-1927	1,220	Jan. 15, 1909	28.3	111,000	91	* 71
Middle Fork of Yuba River near North San Juan.....	1910-1927	-----	Feb. 21, 1927	14.0	21,900	-----	21
North Fork of Yuba River at Goodyear Bar.....	1910-1927	214	May 11, 1915	11.5	12,600	59	80
North Fork of North Fork of Yuba River at Downieville.....	1910-1926	71.2	do.....	8.0	6,760	95	10

<sup>b</sup> Power regulation.

<sup>d</sup> Storage at East Park Reservoir.

\* Regulation at Pit No. 3 Reservoir.

<sup>f</sup> Fall River diverted through Pit River No. 1 plant.

<sup>e</sup> Storage at Silver and Twin Lakes.

DEFICIENCY IN DISCHARGE

Days of deficiency in discharge of Sacramento River near Red Bluff, Calif., during the years ending September 30, 1896-1927

[Drainage area, 9,300 square miles]

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column															
	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
3,300																
3,400																
3,600																
3,800																
4,000								22								
4,200					1	17	29	73								
4,500					46	47	30	86								
5,000			83	130	103	88	101	107	36	50	36					
5,500	19	63	114	188	124	126	136	124	69	73	79	12	76	65	87	92
6,000	125	104	167	202	144	146	166	137	78	88	144	86	112	120	110	119
6,500	166	127	241	222	155	157	186	147	93	100	161	121	159	148	141	145
7,000	175	136	277	243	158	166	193	153	98	103	172	132	167	161	158	157
7,500	183	145	296	257	163	171	200	156	111	119	177	147	173	172	169	168
8,000	191	155	306	278	166	176	205	170	128	136	182	158	182	180	179	180
9,000	197	183	316	295	181	194	212	189	155	156	188	169	201	191	189	194
10,000	207	197	332	310	209	212	223	197	177	185	197	178	214	202	208	203
11,000	219	211	342	320	235	238	232	208	202	209	206	184	242	209	221	210
12,000	231	219	348	325	257	251	235	217	214	217	212	192	263	216	236	220
14,000	248	236	353	338	290	281	253	253	233	247	234	220	301	235	264	241
16,000	260	250	357	343	309	301	269	268	240	275	245	238	319	241	283	258
18,000	275	273	360	348	320	317	282	292	245	288	261	255	331	252	299	278
20,000	293	287	360	350	326	321	295	308	248	297	283	264	337	269	312	299
25,000	314	325	364	353	342	335	322	326	267	310	309	289	345	298	353	315
30,000	330	339	364	356	345	344	327	337	278	324	322	306	351	307	339	334
35,000	339	345	364	358	348	347	330	345	289	336	331	314	357	313	347	346
40,000	340	349	365	359	351	350	337	349	303	344	338	333	360	322	359	349
50,000	347	357		362	355	354	342	354	323	353	350	343	365	330	362	356
60,000	353	359		363	360	357	347	357	332	358	357	349	365	340	363	362
75,000	357	362		364	362	360	354	361	343	364	361	353	365	347	363	364
100,000	361	365		365	364	364	358	363	359	364	363	357	366	353	365	364
150,000	366				365	365	363	365	365	365	365	365		362		365
200,000							365		366					364		
Over 200,000														365		

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column															
	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
3,300									3			9	139	13	86	1
3,400									54			23	150	35	97	9
3,600							11		83	6	4	56	157	69	103	24
3,800							45	13	92	6	37	62	161	93	110	70
4,000							73	25	100	11	65	74	168	109	122	102
4,200						27	76	74	151	90	88	91	262	117	163	119
4,500		2	20	7		49	139	96	176	112	130	125	316	124	200	126
5,000		42	77	40	4	47	81	166	150	255	126	164	161	336	148	241
5,500		132	111	101	62	101	139	212	188	276	134	192	176	342	169	251
6,000		178	130	118	109	126	164	236	204	286	140	204	192	349	185	256
6,500	188	148	134	142	139	186	255	208	304	147	214	217	352	198	265	157
7,000	192	168	146	155	154	221	260	217	315	151	220	242	354	205	272	164
7,500	208	188	155	163	165	230	269	226	328	155	224	261	357	215	278	169
8,000	223	196	162	173	175	235	281	235	336	156	228	278	358	225	289	183
9,000	236	220	173	188	182	249	299	248	342	160	236	300	360	233	305	197
10,000	263	232	184	199	207	267	305	257	346	169	244	315	361	249	310	205
11,000	280	253	188	206	217	280	313	261	350	172	262	326	361	269	316	210
12,000	300	284	195	215	220	288	322	264	353	190	274	332	361	281	322	213
14,000	327	314	210	221	240	309	332	277	356	219	296	344	363	297	329	233
16,000	336	333	234	235	258	321	338	293	359	234	322	349	363	304	333	205





Days of deficiency in discharge of Feather River at Oroville, Calif., during the years ending September 30, 1903-1927

[Drainage area, 3,640 square miles]

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column												
	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
800										12	4		
900									1	34	29	9	
1,000									10	7	68	64	31
1,100									23	21	86	90	32
1,200	20		3	4									
1,300	20		37	62		34	23	34	44	108	101	38	
1,400	20		53	85		51	35	63	64	127	109	43	
1,500	33		60	96		51	46	73	72	146	121	50	
1,600	55	6	66	103		52	59	91	85	170	133	58	
1,800	87	47	78	103	3	91	106	107	113	189	161	104	9
2,000	104	74	88	129	67	120	124	119	128	191	172	138	27
2,500	132	99	117	150	109	153	151	145	150	216	195	158	121
3,000	143	110	153	166	123	162	163	162	166	238	242	170	161
3,500	174	161	176	169	131	167	171	169	174	264	255	176	191
4,000	196	181	183	171	135	176	175	176	181	283	268	177	201
5,000	238	208	201	182	150	205	182	194	192	318	282	182	214
6,000	254	219	214	195	170	235	187	220	208	324	291	186	221
7,000	274	225	229	212	188	268	190	246	219	331	297	199	232
8,000	290	229	253	218	201	292	195	261	224	344	304	212	239
9,000	295	234	279	221	208	320	202	276	234	354	315	218	249
10,000	301	238	307	230	215	343	205	282	240	363	333	224	260
12,000	314	242	329	243	236	355	236	296	253	364	350	236	282
15,000	331	254	340	274	253	364	288	333	262	365	363	253	309
20,000	353	282	354	327	279	366	339	358	300	366	365	305	343
30,000	361	330	364	353	339		351	364	343			347	353
40,000	362	340	364	357	351		355	365	360			354	359
50,000	363	347	364	360	355		356		363			358	360
60,000	363	354	364	363	359		358		363			359	361
80,000	364	359	365	364	361		362		365			362	363
100,000	365	365		365	362		362					364	365
150,000		366			364		365					365	
200,000					365								

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column											
	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
800										11		
900										56		
1,000						2	1			100		
1,100						5	2		3	128	1	
1,200				1		16	5	3	11	140	6	
1,300				3		31	8	11	13	156	13	2
1,400				10		42	13	18	21	184	25	6
1,500		1		36		73	19	36	21	214	34	11
1,600		1		67	4	86	30	67	36	227	50	44
1,800		7		124	31	127	77	102	90	300	127	98
2,000		118	2	166	94	190	89	128	124	320	173	210
2,500		155	103	242	182	259	108	173	151	345	206	239
3,000		168	181	273	232	275	128	195	167	356	225	249
3,500		180	218	287	243	284	134	207	199	358	236	255
4,000		191	226	294	251	300	141	217	226	359	249	258
5,000		205	245	304	268	312	152	226	268	362	268	274
6,000		219	261	310	286	325	167	243	292	362	306	305
7,000		237	272	318	299	349	180	253	316	363	318	324
8,000		242	275	331	310	359	192	266	336	363	339	336
9,000		245	281	341	313	362	212	276	346	363	349	339



Days of deficiency in discharge of Yuba River at Smartsville, Calif., during the years ending September 30, 1904-1927—Continued

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column											
	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
150.....					21				56	3	19	9
200.....			36	44	63	5			89	15	27	
300.....	27	45	98	72	118	42	50	19	124	37	100	62
400.....	85	74	166	103	142	64	78	67	179	73	157	96
500.....	113	99	203	133	166	85	105	89	208	96	185	104
600.....	124	121	217	170	193	105	126	115	241	118	196	113
800.....	134	129	224	193	231	119	148	130	279	144	218	123
1,000.....	154	150	230	214	241	122	180	138	309	178	228	141
1,200.....	161	165	235	223	247	128	185	143	326	192	231	152
1,400.....	169	175	248	230	251	130	190	154	339	202	234	160
1,600.....	172	199	254	235	255	133	193	169	348	208	236	163
1,800.....	176	211	258	238	268	135	195	189	350	216	241	165
2,000.....	177	212	264	243	271	136	200	206	354	219	253	166
2,500.....	190	220	278	248	287	139	212	247	363	235	264	175
3,000.....	197	240	286	258	296	145	221	268	364	255	285	186
3,500.....	207	251	300	266	310	158	226	282	364	269	305	197
4,000.....	215	264	312	279	317	175	244	295	364	288	311	204
5,000.....	223	279	339	296	349	221	265	315	364	307	329	234
6,000.....	230	294	352	308	355	273	272	327	365	330	341	256
7,000.....	251	309	357	335	360	310	290	344	365	341	346	283
8,000.....	290	327	359	346	362	333	294	351	365	348	352	305
10,000.....	335	346	363	354	364	354	321	358	366	359	357	324
12,000.....	352	351	363	361	364	359	338	361	366	360	358	338
15,000.....	355	358	365	362	365	363	354	362	366	360	359	348
20,000.....	363	362		363	366	364	364	364		362	364	358
30,000.....	366	364		365		365	365	365		363	365	364
40,000.....		365								365		364
50,000.....												365
60,000.....												
75,000.....												
100,000.....												
125,000.....												

Days of deficiency in discharge of Bear River near Van Trent, Calif., during the years ending September 30, 1905-1927

[Drainage area, 263 square miles]

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column											
	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
5.....												
10.....		7						20	6			
20.....		7	81	15		24		90	81	11		
35.....	69	147	58	61	43	95	61	128	124	82	1	
50.....	88	163	101	139	134	132	128	161	143	43	13	1
100.....	98	180	149	162	176	175	199	229	187	81	72	13
150.....	146	187	156	180	214	191	212	248	254	142	109	84
200.....	164	191	161	197	236	202	223	284	289	190	149	138
250.....	192	196	181	220	244	216	236	321	310	207	182	166
300.....	203	200	191	239	248	220	242	329	324	225	204	192
400.....	234	215	215	293	258	247	255	350	346	241	239	234
500.....	264	234	226	308	279	272	272	357	353	251	254	253
600.....	283	253	234	327	291	309	274	359	356	261	267	262
700.....	305	269	243	344	294	323	276	361	358	277	288	266
800.....	314	277	255	347	302	335	284	363	360	293	304	275
1,000.....	331	295	282	355	309	344	311	365	360	314	312	283
1,200.....	345	307	297	359	315	346	319	366	360	319	319	286
1,400.....	352	317	303	361	320	349	327		363	327	325	298
1,600.....	352	323	316	362	330	355	331		363	332	330	310
1,800.....	353	327	321	364	336	357	334		363	335	334	315



*Days of deficiency in discharge of American River at Fair Oaks, Calif., during the years ending September 30, 1906-1927*

[Drainage area, 1,910 square miles]

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column										
	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
100.....			8	6			10	2	4		
150.....	39		42	21			13	5	18	1	
200.....	62		51	42	33		42	52	53	8	23
300.....	92	25	56	70	63	16	45	81	73	66	85
400.....	107	33	65	101	72	71	133	104	93	97	102
600.....	138	64	73	119	108	115	159	146	126	133	128
800.....	146	79	130	138	140	140	194	176	139	153	144
1,000.....	152	97	154	142	146	145	219	190	146	172	150
1,200.....	153	113	163	156	148	148	232	216	151	183	154
1,500.....	161	125	178	167	157	158	242	240	158	189	160
2,000.....	165	136	220	172	163	165	273	262	165	195	167
2,500.....	179	148	245	177	168	171	285	277	171	203	173
3,000.....	186	160	272	178	173	174	309	286	175	214	182
3,500.....	195	172	295	181	181	177	312	292	183	222	189
4,000.....	197	176	311	182	195	188	317	297	192	236	193
5,000.....	201	188	339	192	206	198	326	311	205	252	204
6,000.....	206	191	356	220	228	206	336	330	217	273	215
7,000.....	219	204	364	239	247	211	341	341	243	292	220
8,000.....	229	228	365	269	267	216	354	352	274	298	238
9,000.....	239	244	366	281	299	234	359	359	290	308	262
10,000.....	251	261		298	323	241	364	361	305	314	282
12,000.....	278	276		329	341	259	366	365	327	330	319
14,000.....	305	310		338	350	286			345	343	345
16,000.....	318	327		342	353	305			350	351	356
20,000.....	345	347		347	359	331			355	355	363
25,000.....	358	351		350	362	355			356	360	364
30,000.....	360	354		355	362	359			358	362	365
40,000.....	363	358		360	363	363			361	364	366
50,000.....	365	359		361	365	363			363	365	
60,000.....		360		361	363	363			365		
75,000.....		362		362		365					
100,000.....		364		365							
125,000.....		365									

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column										
	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
100.....	1	49		1				93	6		
150.....	7	81	50	59	7			102	21	12	
200.....	13	97	72	112	14			108	28	49	12
300.....	38	156	85	135	51	47	33	118	64	87	34
400.....	56	194	105	146	62	71	53	137	85	105	87
600.....	93	205	128	191	92	111	96	223	113	195	109
800.....	120	213	178	225	111	123	117	258	130	217	115
1,000.....	135	219	200	233	118	129	129	285	147	225	123
1,200.....	150	225	220	240	119	146	134	300	169	234	137
1,500.....	165	234	228	245	123	179	141	313	186	237	149
2,000.....	207	252	240	254	132	194	147	339	204	247	170
2,500.....	215	265	244	270	142	200	157	354	211	255	176
3,000.....	224	277	247	278	152	208	187	361	216	283	187
3,500.....	240	286	254	287	166	220	226	363	223	308	198
4,000.....	248	295	266	294	176	233	254	363	231	317	202
5,000.....	266	313	281	310	210	245	270	364	259	329	214
6,000.....	277	322	295	331	240	257	288	365	280	337	238
7,000.....	285	332	305	342	273	278	298	365	296	347	263
8,000.....	294	344	314	352	299	285	312	365	306	351	283
9,000.....	308	356	322	356	312	299	327	365	318	355	300

# 218 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

*Days of deficiency in discharge of American River at Fair Oaks, Calif., during the years ending September 30, 1906-1927—Continued*

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column										
	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
10,000.....	320	360	339	360	341	303	332	365	330	359	310
12,000.....	337	364	351	365	355	321	353	366	346	360	326
14,000.....	349	365	357	365	361	331	358	-----	353	362	336
16,000.....	357	-----	361	365	363	339	361	-----	359	363	346
20,000.....	360	-----	364	366	364	353	-----	-----	362	364	356
25,000.....	363	-----	364	-----	364	365	364	-----	363	365	361
30,000.....	364	-----	364	-----	364	-----	365	-----	364	-----	362
40,000.....	365	-----	364	-----	365	-----	-----	-----	364	-----	363
50,000.....	-----	-----	365	-----	-----	-----	-----	-----	364	-----	365
60,000.....	-----	-----	-----	-----	-----	-----	-----	-----	364	-----	-----
75,000.....	-----	-----	-----	-----	-----	-----	-----	-----	365	-----	-----
100,000.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
125,000.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

*Days of deficiency in discharge of Cache Creek at Yolo, Calif., during the years ending September 30, 1904-1927*

[Drainage area, 1,230 square miles]

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column											
	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
0.....	50	8	94	55	60	94	82	111	242	236	82	22
5.....	50	21	104	66	84	110	97	136	255	246	91	37
10.....	50	23	104	71	96	118	130	156	273	250	99	47
20.....	50	26	106	79	114	122	151	162	276	268	124	52
35.....	50	31	109	84	122	128	166	164	277	277	136	64
50.....	71	33	114	97	138	130	170	168	283	282	142	96
75.....	93	51	122	102	174	136	174	171	290	289	148	119
100.....	102	77	128	102	187	143	180	184	302	302	150	129
150.....	117	110	146	108	193	155	188	192	323	308	161	153
200.....	126	155	163	119	211	163	193	204	334	315	184	175
250.....	164	165	171	125	219	172	220	208	341	323	186	181
300.....	181	171	181	139	225	181	231	215	346	326	187	192
400.....	205	183	193	158	238	192	245	228	352	338	191	212
500.....	220	199	197	176	252	201	256	243	360	348	207	216
600.....	228	210	206	187	264	213	266	253	364	354	214	223
700.....	239	216	211	195	276	220	288	257	365	355	218	227
800.....	243	222	220	203	290	229	307	271	365	356	221	230
1,000.....	250	234	244	223	307	239	340	296	366	357	228	240
1,200.....	258	260	264	241	326	247	351	309	-----	358	247	245
1,400.....	265	276	276	255	345	254	356	323	-----	358	256	258
1,700.....	273	310	287	283	351	263	358	335	-----	361	269	273
2,000.....	282	322	308	299	354	270	360	342	-----	362	286	284
2,500.....	302	348	325	311	358	279	361	349	-----	364	293	297
3,000.....	316	354	337	322	361	286	363	351	-----	364	302	306
4,000.....	330	358	348	335	364	307	364	354	-----	365	320	323
5,000.....	350	360	353	343	365	316	365	357	-----	-----	330	334
6,000.....	355	362	358	352	365	328	-----	358	-----	-----	337	343
8,000.....	360	362	361	358	366	347	-----	361	-----	-----	346	358
10,000.....	363	364	363	358	-----	356	-----	361	-----	-----	353	361
15,000.....	366	365	364	364	-----	362	-----	364	-----	-----	361	363
20,000.....	-----	-----	365	365	-----	364	-----	365	-----	-----	365	365
25,000.....	-----	-----	-----	-----	-----	365	-----	-----	-----	-----	-----	-----

Days of deficiency in discharge of Cache Creek at Yolo, Calif., during the years ending September 30, 1904-1927—Continued

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column											
	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
0	39	97	122	169	363	180	230	192	300	175	235	173
5	95	123	149	182	363	183	230	204	338	180	237	178
10	138	132	166	250	363	187	234	214	338	184	237	181
20	152	163	257	277	363	199	240	220	339	196	248	184
35	177	196	309	284	363	211	258	226	348	213	269	189
50	187	216	317	287	363	221	268	233	353	221	272	192
75	201	237	324	291	363	229	276	240	358	236	280	195
100	203	242	328	293	363	239	282	253	360	246	285	215
150	207	275	334	298	364	243	294	264	362	267	301	223
200	209	286	341	302	364	253	302	290	362	276	311	235
250	212	298	350	308	364	262	312	313	363	287	314	239
300	214	322	353	310	364	272	320	324	363	290	316	243
400	225	335	357	325	364	292	336	334	364	300	322	252
500	237	346	360	333	364	299	339	339	364	306	326	264
600	240	351	361	339	365	304	344	346	365	310	328	268
700	244	352	363	344	365	305	347	349	366	318	331	272
800	248	354	363	347	365	308	348	355	366	324	334	274
1,000	256	356	365	354	366	311	353	357	366	328	341	280
1,200	268	358	365	356	366	317	356	358	366	333	344	282
1,400	277	360	365	359	366	319	357	360	366	337	346	286
1,700	283	360	365	359	366	322	359	363	366	343	348	294
2,000	297	361	365	362	366	327	361	364	366	347	350	299
2,500	317	361	365	362	366	340	361	365	366	358	354	303
3,000	334	362	365	363	366	348	364	365	366	361	354	315
4,000	353	362	365	364	366	355	364	365	366	362	359	344
5,000	356	362	365	364	366	357	365	365	366	362	361	351
6,000	359	364	365	364	366	360	365	365	366	363	363	354
8,000	363	364	365	365	366	362	365	365	366	364	363	358
10,000	364	364	365	365	366	364	365	365	366	364	365	360
15,000	365	364	365	365	366	365	365	365	366	365	365	365
20,000	366	365	365	365	366	365	365	365	366	365	365	365
25,000	366	365	365	365	366	365	365	365	366	365	365	365

Days of deficiency in discharge of Putah Creek at Winters, Calif., during the years ending September 30, 1906-1927

[Drainage area, 1,230 square miles]

Discharge in second-feet	Number of days when discharge was equal to or less than that shown in first column										
	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
0						?	38	92	57		
5			51	52	45	?	99	130	57		
10	44	11	94	97	86	128	120	140	121	61	51
20	115	87	118	136	137	148	175	161	130	92	123
35	178	145	178	156	161	188	234	181	148	124	153
50	187	155	197	164	176	207	261	206	163	147	161
75	189	164	217	192	190	221	293	233	172	156	170
100	191	169	230	202	204	229	317	263	188	170	188
150	203	202	259	233	236	235	335	301	208	194	215
200	206	214	276	241	251	240	340	321	221	205	234
250	221	222	288	246	270	257	346	330	235	211	242
300	242	229	295	250	284	262	348	336	243	224	249
400	260	240	309	259	304	273	351	344	257	249	260
500	274	249	322	267	318	284	356	347	269	261	269
600	284	267	330	271	326	292	358	350	276	268	276
700	290	273	335	278	332	298	359	351	283	276	281
800	294	281	336	284	333	303	361	352	293	286	289
1,000	301	293	340	294	345	313	361	356	300	298	294
1,200	309	304	343	296	347	322	362	356	305	303	304
1,400	315	310	344	299	349	326	364	357	310	311	310







# 222 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

## Sacramento River at Butte City

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1920-21	-----	-----	-----	-----	-----	-----	-----	-----	6,760	3,780	2,990	3,150	-----
1921-22	-----	-----	-----	-----	-----	-----	-----	-----	-----	3,230	2,660	2,890	-----
1922-23	4,740	-----	-----	-----	-----	-----	-----	-----	-----	3,260	2,710	3,330	-----
1923-24	4,410	4,310	4,590	5,070	-----	-----	-----	-----	-----	1,780	1,670	2,300	-----
1924-25	3,630	9,550	7,980	7,810	-----	-----	-----	-----	-----	2,560	2,230	2,840	-----
1925-26	4,070	4,920	6,160	-----	-----	-----	-----	-----	2,440	1,710	1,530	2,420	-----
1926-27	3,680	-----	-----	-----	-----	-----	-----	-----	-----	3,430	2,460	3,000	-----

## Sacramento River at Colusa

1920-21	-----	-----	-----	-----	-----	-----	-----	11,100	6,930	3,720	2,720	2,860	-----
1921-22	4,030	-----	-----	-----	-----	-----	-----	-----	-----	2,930	2,350	2,680	-----
1922-23	4,620	-----	-----	-----	-----	-----	-----	-----	-----	3,170	2,490	3,240	-----
1923-24	4,560	4,470	4,650	5,080	-----	-----	-----	-----	1,720	1,620	1,750	2,250	-----
1924-25	3,700	7,570	7,860	8,260	-----	-----	-----	-----	-----	2,470	2,110	2,750	-----
1925-26	4,010	4,640	5,990	-----	-----	-----	-----	-----	2,090	1,390	1,230	2,250	-----
1926-27	3,680	-----	-----	-----	-----	-----	-----	-----	-----	3,140	2,130	2,780	-----

## Sacramento River at Knights Landing

1920-21	-----	-----	-----	-----	-----	-----	13,100	10,700	-----	-----	-----	-----	-----
1921-22	3,930	-----	-----	-----	-----	-----	-----	-----	-----	3,120	2,520	3,350	-----
1922-23	5,380	-----	-----	-----	-----	-----	-----	-----	-----	3,110	2,410	3,670	-----
1923-24	4,720	4,510	4,800	5,280	-----	-----	-----	-----	1,390	1,090	1,490	2,310	-----
1924-25	3,740	7,460	8,550	8,950	-----	-----	-----	-----	-----	2,470	2,140	3,270	-----
1925-26	4,470	4,850	6,130	-----	-----	-----	-----	-----	2,330	1,390	1,480	3,110	-----
1926-27	4,010	-----	-----	-----	-----	-----	-----	-----	-----	3,160	2,340	3,320	-----

## Sacramento River at Verona

1925-26	-----	-----	-----	-----	-----	-----	-----	12,780	3,745	1,994	2,101	4,523	-----
1926-27	6,034	-----	-----	-----	-----	-----	-----	-----	15,900	5,110	3,520	4,850	-----

## Sacramento River at Collinsville<sup>b</sup>

[Drainage area, 26,200 square miles]

1878-79	-----	8,000	9,000	12,000	30,000	110,000	110,000	75,000	45,000	16,000	8,500	6,500	-----
1879-80	8,000	7,500	27,000	28,000	21,000	22,000	95,000	135,000	110,000	53,000	18,000	9,000	44,500
1880-81	4,500	7,000	20,000	95,000	115,000	77,000	90,000	70,000	25,000	14,000	8,000	6,500	44,600
1881-82	7,000	8,200	16,000	24,000	22,000	55,000	90,000	92,000	74,000	17,000	8,000	6,500	35,000
1882-83	10,000	14,000	11,000	12,000	17,000	21,000	73,000	80,000	32,000	12,000	7,000	6,500	24,600
1883-84	7,000	7,500	7,400	12,000	24,000	80,000	105,000	111,000	90,000	31,000	12,000	7,500	41,200
1884-85	8,000	7,000	31,000	90,000	52,000	30,000	29,000	23,000	14,000	6,500	5,500	5,200	25,100

## Pit River near Canby

[Drainage area, 1,500 square miles]

1903-4	-----	-----	-----	135	2,140	4,210	1,680	2,080	594	135	43	15	-----
1904-5	91	131	188	443	533	479	510	165	151	61.7	6.4	5.6	230
1905-6	45.4	92.2	118	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

<sup>b</sup> Data taken from "Physical data and statistics of California," by William Ham. Hall, State engineer, 1886.

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

**Pit River near Bieber**

[Drainage area, 2,950 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1903-4				238	3,950	7,590	4,210	3,440	542	83	33	16	-----
1904-5	105	165	304	1,040	1,080	1,100	950	166	103	51.8	9.85	1.23	423
1905-6	15.4	91	210	1,280	1,930	4,640	2,590	948	544	251	50.8	23.8	1,050
1906-7	44.5			710	4,190	6,940	2,970	1,130	2,160	323	71.7	51.5	-----
1907-8	113	307	799	861	339	322	77.6	83.3	85.6	68.3	9.3	4.8	256
1913-14				3,500	1,830	2,370	1,440	323	192	75.0	32.6	-----	-----
1921-22	30.6	76.4	103	168	458	1,310	2,890	750	62.9	19.7	5.65	5.17	487
1922-23	7.97	47.6	175	405	373	327	135	12.7	15.9	54.1	15.9	1.05	131
1923-24	48.6	68.0	165	225	665	107	112	14.3	11.7	0	0	0	116
1924-25	6.85	65.5	47.6	510	1,380	267	100	57.4	125	29.2	4.71	5.47	209
1925-26	41.6	103	225	182	979	360	91.1	31.6	15.7	6.74	4.25	.11	165

**Pit River at Fall River Mills**

[Drainage area, 4,150 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1921-22	1,340	1,400	1,460	1,450	1,600	2,770	4,700	2,520	1,520	1,350	1,310	1,220	1,890
1922-23						404	229	106	140	132	136	131	-----
1923-24	158	144	210	156	586	199	294	148	181	122	116	133	202
1924-25	134	141	163	411	1,530	320	169	107	211	89.9	66.4	81.3	277
1925-26	114	186	272	249	1,050	425	210	108	91.4	69.2	59.5	64.6	236
1926-27	75.5	159	259	383	1,610	1,770	1,740	458	314	171	136	116	589

**Pit River near Pecks Bridge**

[Drainage area, 4,620 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1921-22								3,550	2,400	2,110	2,040	2,010	-----
1922-23	2,130	2,190	2,400	2,650	2,500	2,490	2,440	2,150	2,120	1,990	1,910	1,990	2,250
1923-24	2,120	2,110	2,130	2,100	2,560	2,130	2,040	1,740	1,700	1,740	-----	-----	-----

**Pit River at Lindsay Flat**

[Drainage area, 4,860 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23		2,150	2,350	2,650	2,480	2,460	2,450	2,130	2,007	1,940	1,860	1,940	-----
1923-24	2,040	2,080	2,090	2,050	2,570	2,110	2,030	1,820	1,780	1,750	1,750	1,770	1,990
1924-25	1,840	1,940	1,920	2,140	3,980	2,340	2,340	2,070	1,880	1,330	98.9	80.8	1,820
1925-26	96.2	101	138	129	1,270	784	904	70.3	62.2	50.5	45.2	42.2	300
1926-27	48.4	58.1	71.9	92.9	955	872	1,970	552	-----	-----	-----	-----	-----

d Formerly known as Henderson.

**Flow through Pit No. 3 power house at Lindsay Flat**

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1925-26	1,793	1,878	1,917	1,795	1,954	1,633	1,448	1,756	1,702	1,700	1,669	1,697	1,744
1926-27	1,770	1,900	2,100	2,100	2,880	3,180	2,300	2,530	2,270	1,920	1,730	1,730	2,200

**Pit River at Big Bend<sup>d</sup>**

[Drainage area, 4,920 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1910-11			3,820	3,530	5,290	8,260	7,380	5,130	3,760	3,220	2,990	2,970	-----
1911-12	3,020	3,190	3,100	3,100	3,490	3,490	3,360	3,690	3,010	2,910	2,710	2,700	3,170
1912-13	2,780	3,030	3,000	2,930	3,090	3,940	4,950	3,490	2,870	2,830	2,760	2,560	3,180
1913-14	2,610	2,710	3,040	7,680	5,840	7,080	6,250	4,280	3,700	2,950	2,840	2,810	4,280
1914-15	2,910	2,900	2,880	2,900	4,550	4,230	4,390	4,370	3,160	2,820	2,560	2,620	3,350
1915-16	2,680	2,880	3,200	3,230	7,290	6,640	5,050	3,850	3,510	2,940	2,660	2,610	3,860
1916-17	2,840	2,920	2,900	2,750	3,570	4,380	10,300	5,640	3,450	2,800	2,650	2,650	3,890
1917-18	2,630	2,780	2,850	2,750	2,970	3,920	3,500	2,670	2,400	2,330	2,310	2,430	2,790
1918-19	2,600	2,600	2,590	2,850	4,140	4,460	5,430	3,120	2,410	2,290	2,240	2,280	3,070
1919-20	2,390	2,440	2,500	2,440	2,500	2,900	3,180	2,320	2,150	2,150	2,140	2,150	2,440
1920-21	2,270	2,880	3,360	5,020	5,600	6,000	4,140	3,580	3,030	2,440	2,250	2,250	3,560
1921-22	2,330	2,440	2,430	2,380	2,730	4,110	6,280	4,290	2,800	2,310	2,240	2,220	3,040
1922-23	2,250	2,320	2,580	2,850	2,590	2,590	2,790	2,340	2,270	2,080	1,970	2,070	2,390
1923-24	2,190	2,210	2,260	2,200	2,770	2,250	2,140	1,850	1,810	1,850	1,840	1,900	2,100
1924-25	2,030	2,140	2,080	2,380	4,740	2,770	2,840	2,410	2,140	1,610	1,860	1,810	2,380
1925-26	2,000	2,180	2,250	2,070	3,680	2,640	2,520	1,940	1,790	1,750	1,770	1,760	2,190
1926-27	1,850	2,060	2,370	2,520	4,940	5,230	5,340	3,650	2,790	2,200	1,930	1,990	3,060
Av.---	2,460	2,600	2,780	3,180	4,100	4,410	4,700	3,440	2,750	2,440	2,340	2,340	3,050

<sup>d</sup> To obtain the total flow of Pit River for 1925 to 1927 the flow through Pit River No. 3 power house should be added.

224 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Pit River near Ydalpom

[Drainage area, 5,260 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1910-11			5,090	5,410	8,420	12,200	10,600	6,600	4,500	3,550	3,150	3,080	
1911-12	3,170	3,300	3,220	4,760	4,560	5,270	4,440	5,270	3,680	3,140	2,880	3,000	3,890
1912-13	2,810	3,730	3,820	5,490	4,550	5,560	6,980	4,680	3,470	3,170	2,960	2,740	4,160
1913-14	2,740	3,470	4,600	17,500	10,500	9,910	10,100	5,530	4,150	3,470	2,860	2,800	6,450
1914-15	3,060	3,120	3,480	5,420	12,400	7,910	7,380	7,640	4,130	3,200	2,830	2,740	5,230
1915-16	2,800	3,320	5,030	7,680	14,600	10,400	6,580	4,450	3,830	3,350	2,750	2,740	5,590
1916-17	2,920	3,080	3,660	3,240	7,340	6,180	13,300	6,490	3,870	2,910	2,750	2,820	4,850 <sup>e</sup>
1917-18	2,780	3,100	3,650	3,390	4,800	7,830	4,870	3,500	2,570	2,470	2,450	2,600	3,680
1918-19	2,990	2,930	2,860	4,570	9,590	8,440	7,750	4,100	2,810	2,430	2,290	2,360	4,390
1919-20	2,570	2,510	3,380	2,690	2,680	3,930	5,550	2,850	2,340	2,270	2,200	2,190	2,930
1920-21	2,490	5,460	7,980	9,720	10,700	8,890	5,830	4,450	3,410	2,780	2,500	2,480	5,530
1921-22	2,530	2,700	3,400	2,930	5,990	7,220	8,690	6,170	3,990	2,770	2,480	2,480	4,260
1922-23	2,650	3,110	3,330	3,810	3,340	3,280	5,000	3,310	2,750	2,430	2,170	2,250	3,120
1923-24								2,000	1,920	1,920	1,900	1,940	
1924-25	2,150	2,810	2,510	3,200	11,700	4,690	5,780	3,550	2,790	1,870	2,020	2,050	3,700
1925-26	2,200	2,460	2,700	2,610	7,590	3,620	3,700	2,400	2,010	1,900	1,840	1,850	2,870
1926-27	1,970	3,780	4,080	5,460	12,300	8,450	8,890	4,930	3,310	2,450	2,160	2,120	4,930
A v...	2,660	3,260	3,920	5,490	8,190	7,110	7,220	4,580	3,270	2,710	2,480	2,480	4,370

South Fork of Pit River near Ivy

[Drainage area, 91 square miles]

1903-4				30	76	82	90	372	234	85	46	35	
1904-5	47	41	39	38	44	66	90	150	120	34	25	15	59.1
1905-6	14	20	30										

West Valley Creek near Likely

[Drainage area, 140 square miles]

1903-4				20	100	70	75	115	50	20	20	12	
1904-5	20	20	30	23.5	23.6	32	31.2	24.8	29.3	16.8	14.3	18.7	23.7
1905-6	14.4	16.1	25										

Pine Creek near Alturas

[Drainage area, 31 square miles]

1917-18									19.8				
1918-19	5.90	6.37	5.23	5.62	6.98	23.9	22.5	41.0	23.2	11.6	8.87	8.32	14.2
1919-20	9.32	9.98	9.63	9.71	9.09	13.0	22.2	38.6	34.0	15.7	11.3	9.38	16.0
1920-21	9.32	12.2	18.8	17.6	19.9	19.6	22.7	49.8	66.9	30.4	15.9	13.7	24.7
1921-22	12.8	12.7	12.4	10.4	10.8	20.2	25.3	42.9	44.0	16.5	11.9	9.75	19.2
1922-23	9.82	10.8	11.0	12.2	11.0	11.3	13.1	23.0	26.7	21.7	14.1	11.8	14.7
1923-24	15.5	14.0	13.6	13.1	15.2	13.0	24.6	36.4	15.8	9.08	7.31	6.45	15.3
1924-25	7.43	8.50	10.6	11.4	13.6	11.9	22.2	45.4	40.2	21.5	13.5	13.1	18.3
1925-26	13.9	14.2	17.6	15.0	18.0	15.5	29.2	37.5	23.2	12.5	11.0	10.6	18.2
1926-27	12.7	11.8	11.8	12.0	20.8	18.1	25.4	51.1	59.2	31.0	18.4	15.1	23.9
A v...	10.7	11.2	12.3	11.9	13.9	16.3	23.0	40.6	35.3	18.9	12.5	10.9	18.3

Ash Creek at Adin

[Drainage area, 260 square miles]

1903-4							550	505	75.8	39.8	30.1	33.2	
1904-5	31.6	31.8	55.5	107	158	214	176	56.7	32.8	15.5	20.5	27.2	77.2
1905-6	31.1	37.5	34.0										

Fall River at Fall River Mills

[Drainage area, 600 square miles]

1911-12					1,460	1,470	1,480	1,480	1,440	1,430	1,430	1,470	
1912-13	1,420	1,460	1,440	1,380	1,430	1,410	1,450	1,500	1,370	1,360	1,330	1,280	1,400



226 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Burney Creek at Burney Falls

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1920-21	-----	-----	-----	-----	-----	-----	274	242	174	165	159	152	-----
1921-22	148	148	149	148	177	251	205	303	200	160	154	152	183
1922-23	149	149	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Kosk Creek near Big Bend<sup>d</sup>

[Drainage area, 51.9 square miles]

1910-11	30.9	55.1	253	-----	-----	-----	1,020	625	230	88.9	51.8	42.2	-----
1911-12	33.5	33.0	30.3	-----	-----	-----	221	378	174	69.9	40.7	40.2	-----
1912-13	39.2	103	91.0	111	177	181	469	322	121	73.1	51.1	34.4	147
1914-15	47.2	27.9	20.9	93.7	691	635	828	868	211	87.0	56.5	37.4	297

Montgomery Creek at Montgomery Creek

[Drainage area, 42 square miles]

1910-11	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	20.4
1911-12	21.7	21.7	21.4	66.9	53.3	63.2	58.7	76.8	47.7	24.8	18.9	23.3	41.5
1912-13	18.8	51.6	42.8	56.3	58.1	61.8	128	94.1	45.2	26.5	17.9	14.4	51.1

Squaw Creek near Ydalpom

[Drainage area, 112 square miles]

1911-12	-----	42.0	38.0	491	351	621	359	499	211	67.7	30.1	48.2	-----
1912-13	39.9	263	266	963	404	365	510	224	119	44.0	-----	-----	-----

McCloud River near Gregory

[Drainage area, 608 square miles]

1902-3	1,350	2,830	2,570	2,880	2,040	3,740	2,810	1,910	1,540	1,370	1,320	1,300	2,140
1903-4	1,320	3,430	1,830	1,650	6,000	9,390	5,470	3,760	2,220	1,750	1,570	1,510	3,320
1904-5	2,700	1,640	1,840	3,890	3,280	4,070	2,490	2,110	1,600	1,490	1,400	1,370	2,320
1905-6	1,370	1,350	1,370	2,540	2,600	4,180	3,110	3,080	3,480	1,690	1,480	1,400	2,300
1906-7	1,380	1,400	2,070	2,880	5,510	6,000	4,100	2,290	1,840	1,550	1,440	1,400	2,660
1907-8	1,380	1,370	1,660	2,300	2,280	2,150	2,170	1,880	1,570	-----	-----	-----	-----

McCloud River at Baird

[Drainage area, 665 square miles]

1910-11	-----	-----	-----	2,160	3,160	3,800	4,060	3,260	2,440	1,650	1,450	1,390	-----
1911-12	1,380	1,350	1,290	2,230	1,800	2,250	1,910	2,930	1,770	1,340	1,260	1,260	1,730
1912-13	1,210	1,910	1,590	2,450	1,880	1,740	2,640	2,430	1,550	1,290	1,200	1,150	1,750
1913-14	1,150	1,370	2,030	7,200	4,420	3,500	5,020	3,000	2,120	1,650	1,430	1,280	2,840
1914-15	1,340	1,280	1,300	2,020	6,870	4,410	4,570	5,290	2,400	1,790	1,540	1,460	2,830
1915-16	1,430	1,430	2,620	3,280	6,110	4,880	3,490	2,470	1,870	1,700	1,470	1,390	2,670
1916-17	1,390	1,400	1,650	1,460	3,330	2,030	2,560	2,070	1,530	1,220	1,090	1,090	1,720
1917-18	1,080	1,110	1,310	1,170	1,850	2,970	2,290	1,370	1,080	981	965	967	1,430
1918-19	985	1,030	1,040	2,030	3,750	2,340	2,710	1,780	1,210	1,070	990	982	1,640
1919-20	977	927	1,070	986	950	1,310	2,010	1,280	1,030	935	893	868	1,100
1920-21	913	3,370	3,260	4,440	3,770	4,010	2,910	2,300	1,650	1,270	1,120	1,060	2,500
1921-22	1,030	1,040	1,330	1,250	2,430	2,260	2,700	2,690	1,660	1,170	1,060	1,030	1,630
1922-23	1,020	1,060	1,250	1,380	1,250	1,220	2,660	1,550	1,150	992	936	923	1,280
1923-24	940	852	880	888	1,450	918	890	818	776	766	758	753	888
1924-25	879	1,340	1,110	1,210	5,120	2,120	3,840	2,070	1,460	1,120	1,000	1,030	1,830
1925-26	913	898	968	850	3,770	1,380	2,010	1,180	967	866	850	842	1,270
1926-27	836	2,710	3,070	2,560	5,680	2,930	4,630	2,590	1,690	1,240	1,070	1,000	2,480
Av...	1,090	1,440	1,610	2,210	3,390	2,590	2,990	2,300	1,550	1,240	1,120	1,090	1,850

<sup>d</sup> Formerly known as Henderson.



228 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Mill Creek near Los Molinos

[Drainage area, 173 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1910-11								633	686	332	168	143	
1911-12	135	132	129										

Thomas Creek at Paskenta .

1920-21	3.34	1,460	1,160	1,300	890	884	500	357	109			0.33	
1921-22	3.20	18.1	301	403	433	322	983	656	80.0	18.2	1.92	.15	267
1922-23	18.2	85.9	517	462	277	166	594	183	96.2	9.16	6.24	4.16	201
1923-24	11.8	16.4	38.2	59.7	312	48.9	45.3	18.2	1.41	0	0	0	44.9
1924-25	47.5	200	354	308	1,630	522	847	693	130	43.8	14.9	25.0	392
1925-26	30.0	45.9	117	142	1,100	370	523	112	27.0	6.12	1.06	.32	200
1926-27	7.61	367	649	513	1,690	962	832	473	152	30.5	8.28	4.98	466

Deer Creek near Vina

1911-12		135	130	217	173	300	204	318	158	106	96	147	
1912-13	103	173	139	354	176	221	530	404	187	117	100	93.4	217
1913-14	92.5	161	635	1,820	1,020	697	928	614	273	155	121	115	551
1914-15	120	123	157	471	1,280	659	808	1,080	339	147	115	106	445
1919-20							395	254	109	83.3	78.1	78.6	
1920-21	91.9	625	683	1,240	706	672	542	489	271	132	104	101	470
1921-22	121	118	334	255	777	514	600	799	475	156	112	101	360
1922-23	102	198	620	336	210	192	422	203	129	84.2	79.9	94.3	223
1923-24	94.3	83.2	91.1	98.8	267	154	127	77.2	66.1	63.3	65.5	64.3	104
1924-25	78.5	121	176	129	838	287	491	224	121	77.4	67.2	71.7	219
1925-26	78.7	112	139	195	651	239	700	166	84.9	66.8	63.0	64.4	209
1926-27	79.1	465	264	427	1,270	548	657	393	172	104	86.6	81.4	372
Av...	96.1	210	306	504	670	408	534	418	199	108	90.7	93.2	317

Stony Creek near Fruto

[Drainage area, 601 square miles]

1900-1					2,230	857	362	350	66.4	7.4	4.1	34.0	
1901-2	130	159	474	129	4,800	2,780	1,720	743	211	3.0	2.4	8.2	930
1902-3	159	1,830	1,350	1,610	1,290	1,880	1,080	336	15.1	6.2	8.7	5.9	798
1903-4	16.4	696	535	335	3,990	4,460	1,600	715	165	34.1	13.5	18.8	1,050
1904-5	167	70.7	453	2,420	1,470	2,050	870	675	206	35.4	12.4	13.7	704
1905-6	16.3	27.1	68.1	2,200	1,540	2,500	1,280	610	495	127	32.6	17.3	743
1906-7	29.0	61.4	582	2,020	3,310	4,430	1,640	450	236	47.1	15.0	19.0	1,076
1907-8	30.0	44.0	597	1,140	1,680	993	525	364	186	47.6	14.8	6.83	469
1908-9	34.0	88.2	192	6,360	5,480	1,300	966	488	145	41.0	15.9	12.8	1,260
1909-10	47.4	370	651	840	964	1,910	733	240	73.8	11.0	.82	1.43	487
1910-11	8.68	46.1	346	949	734	4,000	1,330	557	450	119	161	126	736
1911-12	91.2	32.5	22.0	182	173	270	289	484	182	169	128	74.8	175
Av...	66.3	311	479	1,650	2,310	2,290	1,030	501	203	54.0	34.1	28.2	766

Stony Creek near Stonyford

[Drainage area, 97 square miles]

1912-13							201	165	87	44	29	22	
1913-14	21.0	58.0	391	1,590	810	434	401	232	130	60.2	40.2	30.8	348
1914-15	32.0	36.4	45.1										
1918-19			60.6	202	591	367	290	201	87.6	54.2	48.9	46.6	
1919-20	44.2	49.0	88.6	30.3	25.9	69.9	176	83.0	53.0	32.4	23.0	23.0	58.2
1920-21	34.4	379											
1921-22	49.0	45.3	69.5	66.8	321	150	317	272	138	59.3	44.4	37.0	129
1922-23	47.9	109	286	220	136	103	233	114	66.3	43.5	29.9	28.4	118
1923-24	29.7	30.8	34.7	56.8	126	35.3	43.3	29.0	17.5	14.0	14.5	14.0	36.8
1924-25	32.6	73.2	146	137	853	246	387	427	142	66.5	47.5	43.0	214
1925-26	41.0	36.7	48.4	67.5	635	156	344	97.2	49.9	35.8	28.2	23.2	126
1926-27	30.7	252	349	332	1,130	377	400	195	106	57.8	47.7	42.4	270
Av...	36.2	107	152	300	518	215	279	182	87.7	46.8	35.3	31.0	162



Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Stony Creek near Elk Creek

[Drainage area, 298 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1918-19								186	225	255	230	149	
1919-20	28.4	34.0	59.1	28.6	22.6	41.8	63.5	102	126	112	82.5	30.1	61.1
1920-21	20.0	377	897	1,390	1,010	473	262	190	163	233	225	178	449
1921-22	67.5	51.2	61.9	46.4	379	220	378	284	208	281	252	232	203
1922-23	90.2	167	291	154	31.2	57.6	307	181	202	244	223	158	176
1923-24	26.7	30.0	30.7	33.7	79.7	12.0	83.4	102	54.0	.13	.53	.23	37.5
1924-25	13.1	61.1	120	40.8	1,070	273	541	543	201	265	257	162	290
1925-26	53.0	28.3	27.5	84.8	915	93.5	679	152	246	234	186	106	228
1926-27	21.9	242	532	340	2,480	492	481	192	196	280	255	199	461
A v...	40.1	124	252	265	748	208	348	215	180	212	190	135	238

Stony Creek near Orland

[Drainage area, 636 square miles]

1919-20				29.2	31.6	67.1	219	108	83.5	75.6	48.8	16.0	
1920-21	6.13	719	1,340	2,900	1,700	828	407	365	221	218	201	168	752
1921-22	41.4	18.2	118	91.9	750	404	751	588	258	229	208	191	300
1922-23	56.5	197	502	392	179	147	461	238	206	212	192	148	245
1923-24	15.5	18.5	40.2	52.4	180	23.8	87.7	73.9	28.8	2.08	.43		43.0
1924-25	0	73.7	237	219	2,920	595	1,070	1,220	314	256	223	154	590
1925-26	49.7	28.9	42.2	248	1,800	295	1,120	225	227	194	149	89.8	365
1926-27	10.4	451	928	563	4,250	1,150	826	418	224	227	195	161	759
A v...	25.7	215	458	562	1,480	439	618	404	195	177	152	116	436

Little Stony Creek near Lodoga

[Drainage area, 102 square miles]

1907-8				155	322	113	42.2	28.4	8.6	3.3	3.0	1.0	
1908-9	0.0	0.4	17.8	1,320	896	279	164	37.7	13.7	4.9	2.4	1.02	225
1909-10	.65	11.1	57.5	101	80.7	170	60.5	13.2	3.20	1.48	.44	0	41.5
1910-11			4.24	174	180	952	125	49.1	28.7	16.7	14.1	10.0	
1911-12	5.3	2.8	6.5	22.3	13.8	46.5	24.6	47.4	16.9	1.87	0	3.33	16.0
1912-13	.48	10.7	18.1	129	39.5	25.0	39.8	20.9	6.2	0	0	2.5	24.3
1913-14	1.32	10.3	248	1,170	409	149	108	40.2	13.3	1.63	.118	0	179
1914-15	1.13	1.48	16.3	270	859	249	147	102	32.1	9.89	1.49	.03	136
1915-16	0	0	111	442	218	167	70.0	29.2	16.4	2.73	6.77	8.90	89.3
1916-17	1.42	0	23.1	43.9	278	99.1	93.3	34.5	11.9	0	0	0	47.1
1917-18	2.00	1.00	5.05	5.45	76.5	114	66.1	19.4	2.15	0	0	3.27	24.2
1918-19	1.52	6.43	16.6	83.9	219	125	52.7	25.4	10.4	.48	0	0	44.0
1919-20	.58	.06	15.3	11.8	0	24.0	60.8	22.6	.20	0	0	0	11.3
1920-21	.25	95.7	281	477	191	102	77.9	24.4	13.4	3.39	0	0	105
1921-22	0	.65	33.4	29.9	276	100	81.7	53.3	9.50	.10	0	0	47.1
1922-23	.18	19.2	130	96.2	61.8	35.4	67.4	15.5	4.67	0	0	4.27	36.2
1923-24	0	0	.32	12.8	21.6	14.3	4.92	.81	0	0	0	0	4.51
1924-25	0	1.9	55.7	47.7	401	60.4	94.6	93.2	26.4	5.0	.2	0	63.1
1925-26	0	3.2	7.0	47.0	312	29.7	186	29.0	2.1	0	0	0	49.2
1926-27	0	83.5	186	136	552	113	98.9	29.2	9.83	1.03	0	0	97.7
A v...	.82	13.8	64.9	239	270	148	75.9	35.8	11.5	2.62	1.43	1.72	68.9

North Fork of Feather River above Prattville

[Drainage area, 245 square miles]

1904-5										436	365	341	
1905-6	338	332	326	442	553	668	923	1,360	1,200	730	471	404	646
1906-7	373	404	506	428	974	1,290	1,450	1,490	1,150				

230 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

North Fork of Feather River near Prattville

[Drainage area, 506 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1904-5										759	668	639	
1905-6	628	622	594	936	1,220	1,590	2,200	2,780	2,180	1,210	794	685	1,290
1906-7	676	696	894	814	2,300	2,800	3,290	3,230	2,650	1,280	951	826	1,700
1907-8	794	758	939	917	809	1,140	1,500	1,500	1,110	723	635	610	953
1908-9	632	647	612	2,550	1,310	1,380	2,120	2,580	1,950	1,010	800	734	1,360
1909-10	731	1,200	1,010	844	908	2,160	1,780	1,250	768	662	602	623	1,040
1910-11	625	696	908				2,990	3,040	2,630	1,210	855	790	
1911-12	791	623	597	672	697	764	792	1,130	930	572	561	584	727
1912-13	605	705	604	585	591	664	1,680	1,510	978	685	586	554	812
1913-14	577	636	605	1,250	957	*1,450	1,510	1,950	1,660	787	1,100	1,180	1,140
1914-15	1,210	1,320	1,640	1,090	956	638	449	2,230	1,950	983	1,100	1,280	1,240
1915-16	1,340	1,370	771	1,340	1,590	1,380	1,000	1,170	928	1,070	1,420	1,590	1,250
1916-17	1,550	1,320	867	1,130	791	342	435	1,160	478	1,200	1,740	1,870	1,080
1917-18	1,060	1,550	1,010	821	434	178	97.5	100	402	865	1,130	817	784
1918-19	1,280	1,330	1,370	547	130	44.3	82.9	762	862	1,100	1,260	1,340	847
1919-20	1,420	1,240	1,030	627	426	46.9	17.5	12.9	445	1,140	1,130	877	703
1920-21	988	491	214	356	895	270	1,190	2,500	1,390	1,510	1,200	1,150	1,010
1921-22	1,090	745	848	692	382	1,080	351	1,910	1,300	917	936	975	941
1922-23	862	1,060	1,530	913	775	249	27.5	84.8	469	956	1,230	1,060	769
1923-24	1,040	1,020	726	633	294	349	269	403	798	897	421	416	607
1924-25	999	837	708	701	128	199	220	86.0	651	1,030	982	971	630
1925-26	731	743	595	465	604	244	151	461	831	1,130	1,370	1,360	724
1926-27	959	649	191	166	35.0	28.7	33.9	43.4	79.2	827	1,080	986	426
Av.---	977	921	830	859	773	809	1,010	1,360	1,160	979	980	953	945

North Fork of Feather River at Big Bar

1910-11						6,170	12,200	10,700	7,690	2,650	1,500	1,190	
1911-12	1,210	1,350	1,330	1,900	1,910	2,140	2,460	3,610	2,550	1,170	964	1,090	1,810
1912-13	980				1,500		5,430	5,370	2,760		975	859	
1913-14	885	1,200	2,040	9,500	6,070	7,510	9,580	7,320	3,710	1,680	1,540	1,580	4,370
1914-15	1,700	1,930	2,250	2,110	4,960	3,990	5,330	10,000	4,410	1,980	1,510	1,510	3,470
1915-16	1,540	1,780	1,930	3,360	7,630	8,670	9,080		3,410	2,270	1,950	1,900	
1916-17	1,950	1,980	2,340	1,930	4,360	3,140	7,430	6,680	3,760	2,270	2,270	2,180	3,340
1917-18	2,200	2,050	1,840	1,500	2,080	3,490	4,140	2,050	1,130	1,310	1,490	1,320	2,050
1918-19	1,860	1,980	2,000	1,510	3,260	2,650	6,080	4,390	1,790	1,740	1,740	1,810	2,560
1919-20	1,840	1,670	1,730	1,250	1,050	2,080	3,310	2,890	1,370	1,540	1,400	1,130	1,770
1920-21	1,330	3,530	2,950	4,790	4,570	5,660			3,240	2,440	1,750	1,440	
1921-22	1,490	1,120	1,550	1,580	2,350	3,470	5,910	12,500	5,540	1,780	1,330	1,270	3,330
1922-23	1,370	1,890	3,220	2,670	2,240	2,580	4,140	2,920	1,870	1,540	1,630	1,410	2,290
1923-24	1,430	1,360	1,120	1,170	2,110	1,010	1,230	838	664	723	819	852	1,110
1924-25	1,170	1,380	1,250	1,370	4,860	2,480	3,250	2,600	1,590	1,280	1,290	1,360	1,970
1925-26	1,270	1,260	1,600	1,380	4,400	2,790	5,500	2,430	1,420	1,640	1,750	1,700	2,240
1926-27	1,360	3,590	2,420	2,280	7,790	5,200	5,700	4,130	2,760	1,880	1,890	2,010	3,380
Av.---	1,470	1,870	1,970	2,550	3,820	3,940	5,670	5,230	2,920	1,740	1,520	1,450	2,590

North Fork of Feather River at Big Bend

[Drainage area, 1,940 square miles]

1904-5											1,080	1,030	
1905-6	1,060	1,120	1,150	6,490	5,150	9,680	9,910	9,430	7,570	2,980	1,540	1,310	4,780
1906-7	1,240	1,610	4,070	3,510	12,900	18,300	13,800	9,330	6,250	2,700	1,720	1,470	6,410
1907-8	1,520	1,580	2,980	3,770	2,990	4,590	5,660	5,130	3,700	1,590	1,010	987	2,960
1908-9	1,190	1,310	1,300							1,820	1,290	1,200	
1909-10	1,480	3,230	3,620	2,990	3,560	9,000	7,060	4,000	1,580	1,160	973	998	3,300
1910-11	1,010	1,280	2,240										

\* Storage at Lake Almanor began in March, 1914.

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Feather River at Oroville

[Drainage area, 3,640 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1901-2				1,980	16,800	9,970	16,700	10,700	5,650	2,190	1,410	1,200	
1902-3	1,420	3,530	5,890	7,390	5,240	11,900	18,900	9,430	4,270	2,280	1,810	1,590	6,140
1903-4	1,770	19,700	4,180	3,430	28,000	39,800	24,700	18,600	7,880	3,050	2,010	2,260	12,900
1904-5	4,290	2,750	6,230	10,400	10,200	14,300	10,100	7,630	4,220	1,810	1,350	1,270	6,210
1905-6	1,280	1,320	1,390	14,500	11,100	21,600	19,200	17,500	13,800	5,240	2,490	1,970	9,280
1906-7	1,920	2,410	7,070	7,130	21,500	36,900	29,500	23,400	15,200	6,000	2,650	1,900	13,000
1907-8	1,850	1,780	6,060	6,610	6,380	7,250	9,210	8,170	5,310	2,320	1,510	1,250	4,810
1908-9	1,650	1,750	1,910	39,900	18,400	13,400	15,900	14,000	9,060	3,270	1,800	1,821	10,200
1909-10	1,960	5,750	8,140	6,750	7,970	17,900	12,600	6,850	2,620	1,600	1,350	1,170	6,220
1910-11	1,200	1,860	3,400	8,960	10,200	15,800	30,100	22,100	15,600	3,870	1,650	1,310	9,670
1911-12	1,330	1,560	1,430	3,420	2,730	4,000	4,190	8,270	4,300	1,180	969	1,180	2,890
1912-13	1,010	2,810	1,740	3,370	2,660	3,660	10,600	10,000	4,060	1,650	1,170	1,010	3,690
1913-14	1,030	1,740	6,880	30,000	17,500	19,700	22,400	16,300	7,150	2,380	1,830	1,840	10,700
1914-15	2,060	2,380	3,030	4,570	16,800	11,000	14,900	27,200	8,900	3,130	2,150	2,060	8,130
1915-16	2,050	2,400	4,210	11,000	19,200	24,300	22,500	13,700	5,890	3,040	2,340	2,270	9,360
1916-17	2,610	2,660	4,820	3,060	12,100	6,820	19,100	15,300	7,280	2,760	2,360	2,240	6,700
1917-18	2,170	2,150	2,330	1,790	3,450	8,780	10,300	4,620	1,860	1,560	1,640	1,620	3,520
1918-19	2,270	2,530	2,510	2,560	9,150	6,420	14,100	9,510	2,760	1,990	1,900	1,820	4,750
1919-20	2,010	1,810	2,360	1,730	1,800	4,130	7,180	5,960	2,310	1,800	1,550	1,270	2,830
1920-21	1,580	9,190	8,300	13,200	10,100	14,700	11,700	13,300	6,650	2,810	1,860	1,650	7,900
1921-22	1,610	1,630	3,100	3,000	6,990	7,280	14,000	25,100	11,100	2,690	1,730	1,560	6,640
1922-23	1,650	2,380	6,240	5,040	3,630	4,930	9,430	6,270	3,050	1,890	1,710	1,590	3,900
1923-24	1,710	1,620	1,510	1,640	4,670	1,560	2,150	1,250	924	852	956	992	1,640
1924-25	1,510	2,110	2,210	2,410	14,100	5,090	7,710	5,580	2,730	1,770	1,670	1,710	3,970
1925-26	1,690	1,940	2,150	2,390	10,800	5,570	14,100	4,170	1,930	1,840	1,820	1,860	4,120
1926-27	1,720	7,250	4,310	5,280	24,700	10,900	14,200	9,800	4,630	2,110	1,860	1,790	7,240
Av...	1,810	3,480	4,060	7,750	11,400	12,600	14,800	12,100	6,120	2,500	1,750	1,620	6,660

Feather River at Nicolaus

1920-21									2,090	748	811	
1921-22									2,940	786	827	
1922-23	2,000								1,800	847	1,210	
1923-24	2,030	1,870	1,880						114	28.9	9.9	352
1924-25	1,520	2,780	4,060	4,850							543	824
1925-26	1,720	2,200	3,220						966	405	396	1,010
1926-27	1,780									1,610	709	1,060

Hamilton Branch of Feather River near Prattville

[Drainage area, 230 square miles]

1904-5										219	211	202	
1905-6	191	182	171	333	575	757	1,030	1,290	846	347	254	231	517
1906-7	212	218	343	282	1,220	1,840	1,710	1,460	877				

Butt Creek at Butte Valley

[Drainage area, 73 square miles]

1904-5										47.2	33.6	32.0	
1905-6	32.0	33.3	58.8	221	141	287	360	320	220	69.3	45.9	44.9	153
1906-7	42.6	48.7	90.2	95.1	312	367	500	343	186	67.1	43.8	39.6	178
1907-8	37.9	41.8	97.8	76.5	62.6	113	173	132	64.6	30.4	24.5	26.7	73.4
1908-9	27.1	28.2	29.5	460	178	159	280	233	104	40.8	33.0	32.1	134
1909-10	42.1	83.9	91.0	65.5	72.9	221	165	65.0	30.9	26.3	26.3	26.2	76.3
1910-11	26.4	34.7	52.7				353	404			34.9	32.4	
1911-12	32.5	38.9	29.3	69.5	55.4	69.1	79.0	120	60	25.6	23.9	34.9	53.2
1912-13	35.3	57.3	49.8	101	61.1	78.4	209	176	64.1	35.4	30.9	29.3	77.3
1913-14	30.2	43.7	54.5	212	142	278	387	321	134	68.6	49.3	46.8	147
1914-15	51.8	49.5	57.7	52.0	128	185	345	336	164	61.4	44.8	38.2	126
1915-16	39.8	48.4	82.5	155	159	258	339	337	165	61.5	44.8	38.2	144
1916-17	44.5	53.9	64.5	63.8	110	103	270	234	126	39.7	29.2	25.3	96.6
1917-18	23.7	30.1	38.4	30.5	54.2	116	181	87.9	25.3	13.7	12.4	20.8	52.8
1918-19	21.9	24.6	24.6	32.5	70.8	73.8	247	163	31.6	13.9	11.4	12.7	60.4
1919-20	15.0	17.3	46.3	34.5	28.5	56.7	133	111	29.8	12.3	8.42	9.93	41.9
1920-21	19.6	89.6	78.0	140	117	240	260						
Av...	32.6	45.2	59.1	121	113	174	268	226	100	40.9	31.1	30.6	101

232 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Indian Creek near Crescent Mills

[Drainage area, 740 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1905-6				868	824	2,000	2,550	1,790	1,010	226	53.1	57.9	
1906-7	94.8	132	534	504	2,210	2,930	3,860	2,110	1,000	241	91.3	88.9	1,150
1907-8	114	139	384	478	363	989	1,030	661	306	72.4	15.1	22.7	381
1908-9	58.8	94.4	124	2,910	1,380	1,200	2,540	2,020	962	240	35.3	36.9	967
1909-10	101	356	484										
1911-12	78.0	121	111	164	174	255	284	590	178	43.7	15.1	37.3	171
1912-13	49.5	135	116	145	201	298	1,090	679	225	85.4	44.9	33.5	258
1913-14	44.2	103	205	2,070	1,370	3,000	3,660	1,930	518	116	29.2	42.8	1,090
1914-15	74.8	94.0	121	178	779	923	1,320	1,750	320	75.9	26.5	33.2	472
1915-16	40.7	83.7	227	512	1,530	2,810	3,050	1,360	544	144	38.1	42.6	861
1916-17	81.3	119	205	140	712	582	2,710	1,900	674	121	30.4	30.9	605
1917-18	38.2	77.5	117	116	235	813							
Av....	70.5	132	239	735	889	1,440	2,210	1,480	574	137	37.9	42.7	662

Spanish Creek at Keddie

1911-12		77.2	79.6	157	110	196	186	313	154	45.5	24.8	46.9	
1912-13	49.3	90.5	83.9	120	120	200	479	380	134	55.7	47	28.5	149
1913-14	34.8	73.4	423	1,760	1,160	847	1,000	649	207	36.1	43.3	45.2	520
1914-15	56.4	63.8	83.9	118	1,060	685	748	1,430	267	82.4	40.4	38.9	385
1915-16	48.5	73.5	270	617	981	1,260	1,230	592	297	75.5	65.0	65.0	462
1916-17	70.0	127	177	176	564	461	1,440	793	287	139	60.2	42.2	359
1917-18	42.9	60.0	107	72.0	204	617	572	213	58.7	24.9	19.9	55.5	170
1918-19	68.1	66.7	78.1	120	667	479	758	392	77.8	29.6	20.0	24.9	228
1919-20	47.9	54.7	76.1	73.9	79.0	212	373	202					
1920-21						967	623	568	250	59.0	25.0	30.0	
1921-22	45.9	123	242	191	472	564	929	1,100	465	119	41.8	27.5	359
1922-23	41.8	168	281	232	166	239	427	256	116	36.6	24.4	38.6	169
1923-24	59.8	61.5	74.8	90.2	269	80.3	90.9	29.9	11.2	9.31	10.1	16.2	66.0
1924-25	50.0	89.8	84.7	98.9	499	215	320	197	59.8	22.5	20.4	32.3	138
1925-26	55.3	69.3	70.1	103	630	320	828	235	49.3	18.2	11.9	20.1	197
1926-27	51.8	375	174	246	1,200	604	777	509	241	62.6	26.5	37.1	352
Av....	51.6	105	154	278	545	497	674	491	178	54.4	32.0	36.4	273

Middle Fork of Feather River near Clio

1925-26	22.0	38.0	50.3	102	389	290	367	110	17.1	13.6	9.18	14.6	116
1926-27	21.1	143	152	218	1,710	922	1,210	534	191	50.1	23.6	32.2	433

Middle Fork of Feather River at Sloat

1910-11										488	146	77.1	
1911-12	90.0	136	137	216	259	215	261	591	332	66.6	48.4	59.9	201
1912-13	51.8	174	88.5	213	127	347	882	626	291	69.5	63.4	48.1	248
1913-14	48.0	76.4	423	2,580	2,750	3,740	2,670	1,740	733	199	75.5	62.2	1,250
1914-15	74.5	78.0	91.4	103	516	1,090	1,100	1,460	472	126	58.5	53.1	434
1915-16	57.9	74.2	187	328	1,560	3,620	2,680	1,260	706	249	79.0	64.9	903
1916-17	76.8	100	260	143	448	938	2,070	1,440	839	189	75.0	53.8	551
1917-18	54.4	69.9	114	97.0	248	955	1,440	543	182	54.5	43.3	68.8	322
1918-19	99.1	126	118	153	627	981	2,030	979	187	63.8	51.8	41.0	452
1919-20	53.8	60.0	190	128	196	425	835	650	300	125	31.3	31.9	252
1920-21	52.5	449	314	896	788	1,620	869	851	606	154	64.3	55.0	555
1921-22	64.4	73.5	131	161	404	397	3,490	3,290	1,230	232	89.8	60.7	800
1922-23	64.0	139	476	503	300	1,060	1,490	911	484	138	54.6	55.5	473
1923-24	72.2	79.4	88.7	131	300	116	199	120	38.4	27.9	24.0	25.9	101
1924-25	54.2	99.0	101	170	1,200	545	660	541	198	61.1	48.9	50.4	304
1925-26	64.7	81.0	113	173	786	574	1,000	427	91.8	46.3	36.9	41.0	282
1926-27	48.2	369	310	413	2,480	1,450	1,950	1,090	667	165	58.7	64.0	741
Av....	64.2	137	196	400	812	1,130	1,480	1,030	460	141	61.7	53.7	492

Middle Fork of Feather River near Nelson Point

1923-24				128	366	175	288	182	76.9	48.8	39.4	44.9	
1924-25	94.0	189	184	239	1,530	695	1,010	819	289	112	85.7	89.7	436
1925-26	104	122	155	218	883	744	1,510	614	159	87.6	69.9	66.6	390
1926-27	84.1	535	458	585	2,830	1,750	2,420	1,710	972	248	131	120	971

\*Station maintained at Cromberg previous to December, 1913

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Middle Fork of Feather River near Oroville

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1911-12	-----	437	358	769	857	1,240	1,470	3,040	1,300	367	215	264	-----
1912-13	237	834	495	938	815	1,200	3,710	4,020	1,260	433	263	193	1,200
1913-14	187	483	1,650	8,720	5,720	7,470	7,590	5,730	2,160	678	322	270	3,400
1914-15	326	341	430	894	4,440	3,920	5,730	8,090	2,630	729	354	269	2,330
1915-16	262	381	1,130	2,810	5,850	8,150	7,740	4,790	2,360	831	358	287	2,900
1916-17	383	532	1,430	707	2,980	3,020	6,720	5,830	3,290	700	300	223	2,160
1917-18	207	270	511	379	1,130	3,130	4,490	2,040	641	258	161	278	1,120
1918-19	414	496	449	655	3,060	2,830	6,250	4,030	798	328	196	173	1,630
1919-20	227	220	575	423	610	1,730	3,270	2,950	848	302	157	139	955
1920-21	303	2,780	2,840	4,710	3,490	5,840	4,360	4,390	2,090	586	300	248	2,660
1921-22	254	331	823	903	2,440	2,400	6,700	9,420	4,830	890	368	257	2,460
1922-23	304	547	2,140	1,800	1,160	2,190	4,440	3,090	1,220	473	239	243	1,490
1923-24	278	253	332	395	1,590	540	857	392	176	122	110	105	424
1924-25	255	480	582	765	5,070	2,140	3,400	2,480	1,010	372	242	259	1,390
1925-26	289	440	571	756	3,560	2,330	5,110	1,580	508	247	173	161	1,300
1926-27	250	2,270	1,590	2,140	8,680	5,160	6,350	4,720	2,080	561	284	226	2,800
Av.---	278	693	994	1,740	3,220	3,330	4,890	4,160	1,700	492	263	225	1,880

Grizzly Creek near Portola\*

[Drainage area, 51 square miles]

1905-6	-----	-----	-----	40.0	110	153	474	323	101	11.9	0.73	0.51	-----
1925-26	0.92	2.25	2.03	9.16	29.9	78.0	89.6	25.8	1.10	.34	.36	.55	19.9
1926-27	.63	22.4	21.6	26.4	109	151	185	103	23.3	2.46	.45	.7	53.4

South Fork of Feather River at Enterprise

1911-12	-----	38.0	34.4	131	140	286	332	572	168	9.70	1.40	12.5	-----
1912-13	15.5	143	60.9	205	154	217	702	754	166	14.7	1.50	1.24	203
1913-14	1.17	72.0	492	2,120	1,210	906	1,070	758	246	37.8	2.68	2.00	574
1914-15	18.3	28.1	68.6	231	1,130	762	1,190	1,840	403	77.6	15.0	2.47	476
1915-16	4.26	41.7	223	839	1,210	1,260	1,220	766	285	56.2	6.32	6.82	491
1916-17	44.1	53.1	248	148	947	451	1,130	873	383	33.5	.82	.53	354
1917-18	1.15	19.7	80.3	58.0	229	522	684	268	23.7	.80	.68	20.7	158
1918-19	34.2	58.6	59.4	104	841	469	944	616	77.5	2.89	.87	.73	263
1919-20	8.7	20.4	148	76.5	110	372	836	602	117	8.90	1.7	19.6	193
1920-21	66.2	993	815	1,130	580	1,060	786	714	247	23.2	2.68	5.00	535
1921-22	8.61	26.1	170	171	682	549	786	1,500	706	62.6	3.56	2.50	387
1922-23	14.4	61.0	481	316	216	273	840	445	90.6	9.34	.80	5.00	229
1923-24	7.84	4.23	18.7	43.4	420	69.6	137	12.3	1.0	1.0	1.0	1.0	58.8
1924-25	11.1	67.5	94.5	103	1,450	424	775	494	94.8	11.3	11.2	16.8	287
1925-26	12.7	32.1	46.4	128	796	226	937	173	18.5	1.60	1.21	1.68	192
1926-27	23.0	388	267	331	1,700	877	1,000	658	223	26.1	20.3	4.87	450
Av.---	18.4	128	207	383	739	545	836	690	203	23.3	4.48	6.46	323

Palermo Land & Water Co.'s canal at Enterprise

1911-12	-----	23.9	17.0	13.9	16.5	15.7	19.9	29.4	38.3	35.9	23.5	20.4	-----
1912-13	21.0	14.8	15.7	13.8	21.2	20.4	21.8	32.3	35.0	38.5	27.2	20.4	23.5
1913-14	19.3	10.6	10.5	1.23	13.4	20.1	21.0	33.5	35.1	38.3	32.8	27.9	22.0
1914-15	24.2	18.3	14.5	14.9	11.4	14.2	17.6	17.3	35.3	37.8	37.6	32.9	23.1
1915-16	30.6	21.7	16.9	6.99	9.74	9.97	18.0	31.5	33.8	36.1	35.8	29.7	23.4
1916-17	17.9	15.4	9.49	6.81	16.7	17.7	17.2	31.9	37.5	38.9	33.4	26.9	22.4
1917-18	24.2	19.3	9.45	10.1	17.9	12.7	20.6	35.4	38.8	23.8	16.6	16.7	20.4
1918-19	19.1	14.4	12.0	12.6	9.87	13.7	23.1	32.0	36.9	28.8	18.2	18.3	20.0
1919-20	20.8	16.0	12.0	12.4	11.6	14.3	5.33	28.6	36.6	28.3	16.4	15.9	18.2
1920-21	18.4	14.0	7.90	5.23	6.31	8.21	19.9	30.3	34.7	38.4	28.2	24.0	19.7
1921-22	22.8	17.5	9.34	12.3	7.89	10.9	16.6	28.7	34.4	39.8	33.8	24.2	21.6
1922-23	21.8	11.6	10.6	9.44	13.3	16.1	18.4	33.0	36.8	37.3	25.6	21.6	21.3
1923-24	28.7	21.9	14.4	12.1	9.59	14.0	22.6	34.2	16.9	10.6	15.7	10.1	17.6
1924-25	13.4	10.3	10.5	15.7	6.21	18.2	18.1	28.2	33.7	35.6	37.6	32.6	21.8
1925-26	20.0	16.0	12.5	12.6	10.4	16.9	13.9	29.4	37.1	31.7	30.0	26.7	21.5
1926-27	16.1	13.9	10.5	10.8	10.5	9.90	12.6	21.0	23.2	31.3	36.2	34.4	19.3
Av.---	21.2	16.2	12.1	10.7	12.0	14.6	17.9	29.8	34.0	33.2	28.0	23.9	21.1

\* Station maintained near Beckwith during 1905-6.

# 234 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

## Middle Fork of Yuba River at Milton

[Drainage area, 51 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1925-26				19.5	47.0	134	347	206	26.6	3.45	1.57	1.55	
1926-27	3.21	70.7	67.6	96.2	158	160	274	572	473	58.2	7.23	4.27	161

## Middle Fork of Yuba River near North San Juan

[Drainage area, 206 square miles]

1899-1900										128	74.1	66.9	
1910-11											108	73.3	
1911-12	98.1	110	89.4	217	178	292	371	928	520	112	52.3	65.5	253
1912-13	59.8	238	143	280	283	330	942	1,060	366	117	66.5	46.9	328
1913-14	42.1	128	605	2,290	1,220	989	1,320	1,490	714	190	63.0	46.4	756
1914-15	71.5	68.5	96.5	274	1,120	782	1,210	2,670	892	171	67.1	50.1	617
1915-16	48.5	83.4	274	896	1,550	1,640	1,630	1,380	842	226	70.0	57.0	721
1916-17	76.6	106	316	196	921	449	1,520	1,400	1,110	180	61.0	48.1	527
1917-18	45.7	55.5	93.5	77.4	286	719	1,020	678	248	50.2	37.6	73.7	282
1918-19	101	128	110	178	969	671	1,490	1,270	204	70.2	43.8	38.4	434
1919-20	57.1	55.5	173	94.7	104	416	870	897	297	80.6	35.9	34.8	260
1920-21	90.4	650	725	1,010	761	1,280	1,010	1,150	682	133	52.9	45.6	632
1921-22	46.9	58.6	210	207	776	680	1,160	2,640	1,850	239	68.8	43.8	663
1922-23	62.8	131	758	421	338	395	1,230	1,310	598	165	53.8	55.2	460
1923-24	65.7	54.5	78.4	88.9	334	116	315	180	45.3	25.7	23.5	24.9	111
1924-25	62.1	149	279	300	1,740	565	1,170	966	344	86.8	51.1	50.9	470
1925-26	62.1	83.8	123	209	903	481	1,210	477	121	45.4	29.0	30.1	309
1926-27	63.8	779	346	587	2,940	1,160	1,650	1,450	920	173	51.4	43.5	830
A v...	65.9	180	276	458	901	685	1,130	1,250	610	129	56.1	49.7	478

## Yuba River at Smartsville

[Drainage area, 1,220 square miles]

1902-3										2,910	897	516	479
1903-4	550	4,890	2,010	1,830	14,800	15,400	10,700	10,600	4,970	1,260	591	732	5,690
1904-5	1,880	1,070	2,350	4,900	5,010	7,110	6,750	6,070	3,100	782	471	429	3,330
1905-6	453	474	566	7,560	4,970	12,000	8,770	10,800	10,000	3,350	744	520	5,020
1906-7	403	757	4,130	4,990	14,100	17,300	13,100	8,750	6,750	3,060	736	505	6,220
1907-8	517	472	1,590	3,380	2,230	3,590	4,300	5,200	3,180	705	350	329	2,200
1908-9	521	478	764	23,000	9,740	5,330	7,340	8,450	6,520	1,360	605	431	5,380
1909-10	543	5,010	6,550	4,520	4,390	8,170	7,900	4,690	1,280	525	328	383	3,690
1910-11	388	653	1,400	7,840	6,840	8,680	10,900	8,560	9,490	2,590	607	453	4,870
1911-12	476	619	499	1,310	973	1,920	2,280	6,020	3,300	543	318	378	1,560
1912-13	351	1,570	713	2,060	1,470	1,840	5,540	6,670	1,910	507	291	230	1,930
1913-14	225	545	2,610	11,500	3,140	4,320	7,910	9,810	5,220	1,280	472	326	3,960
1914-15	412	401	666	1,610	7,770	5,050	7,280	12,700	4,400	785	404	318	3,450
1915-16	298	482	1,830	5,520	8,890	9,520	9,310	7,900	5,640	1,270	408	341	4,260
1916-17	488	670	2,610	1,510	6,510	3,630	7,760	7,300	6,540	1,040	311	266	3,190
1917-18	251	307	615	446	2,130	4,310	5,180	3,540	1,250	313	176	485	1,580
1918-19	594	728	630	1,200	6,360	4,090	6,230	7,390	1,260	333	202	180	2,410
1919-20	288	276	1,070	555	784	2,790	5,010	4,720	1,700	390	167	161	1,490
1920-21	569	4,230	5,190	6,570	4,770	7,060	5,990	7,150	4,720	821	351	256	3,970
1921-22	314	430	1,790	1,830	5,590	4,100	6,390	12,600	10,200	1,420	486	279	3,770
1922-23	342	873	4,610	2,580	1,890	2,160	6,290	6,140	3,100	1,090	429	379	2,490
1923-24	460	337	521	614	1,780	783	1,490	745	182	149	98.1	232	610
1924-25	456	795	1,590	1,560	9,240	3,240	5,680	5,790	1,670	637	335	275	2,560
1925-26	287	433	725	866	6,860	2,850	6,780	2,960	985	280	244	150	1,910
1926-27	362	4,610	2,830	3,290	12,800	6,280	9,570	7,930	5,140	868	336	273	4,450
A v...	476	1,300	1,990	4,210	5,960	5,900	7,040	7,190	4,220	1,050	399	352	3,330

## Yuba River at Parks Bar Bridge

[Drainage area, 1,230 square miles]

1899-1900											716	506	494
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Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Oregon Creek near North San Juan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1910-11													3.3
1911-12	5.4	13.5	6.6	67.7	36.8	84.1	63.9	107	22.1	5.7	2.5	3.9	35.0
1912-13	4.8	45.5	15.7	63.1	61.8	74.5	227	90.5	17.3	6.19	2.87	2.43	50.7
1913-14	3.11	14.0	146	692	336	163	146	53.1	21.5	7.47	3.10	3.83	132
1914-15	6.56	7.93	11.6	45.7	338	213	214	353	54.6	15.9	7.61	7.23	105
1915-16	8.56	18.4	63.5	267	453	359	182	66.9	19.4	8.53	5.79	5.78	120
1916-17	8.00	13.5	70.2	55.4	273	126	333	105	22.4	7.77	4.98	3.75	84.1
1917-18	3.04	4.90	9.02	6.15	49.3	175	129	23.8	5.72	2.99	2.40	7.26	34.7
1918-19	10.0	19.3	17.6	41.4	296	218	266	65.5	11.7	4.21	3.00	3.71	78.0
1919-20	7.58	10.5	39.8	22.0	23.7	147	275	72.4	14.0	4.40	1.95	2.63	51.7
1920-21	14.7	192	284	352	309	375	198	116	39.4	10.9	2.70	3.29	167
1921-22	8.14	15.6	79.5	84.4	298	263	351	353	90.1	15.8	4.51	2.48	129
1922-23	9.57	32.3	226	105	76.1	72.8	184	48.6	20.6	7.41	3.22	6.02	65.9
1923-24	12.0	16.2	22.9	23.5	71.0	11.9	35.4	8.40	2.27	1.73	1.64	1.65	17.1
1924-25	8.29	25.4	59.5	76.6	360	77.7	147	47.7	21.9	5.38	2.84	3.39	67.4
1925-26	6.38	13.6	18.0	33.3	201	59.2	141	27.7	7.37	1.91	1.27	1.61	41.4
1926-27	5.90	112	44.1	128	558	188	250	30.3	24.8	5.83	2.50	2.47	113
Av...	7.63	35.0	69.6	129	234	163	196	101	24.7	7.01	3.30	3.81	80.1

North Fork of Yuba River near Sierra City

1923-24				50.9	91.1	67.8	226	171	52.0	39.3	34.1	33.2	
1924-25	53.3	92.4	77.5	93.9	386	193	486	702	284	65.9	56.0	55.7	211
1925-26	64.3	69.7	77.9	72.2	175	225	576	402	102	52.9	41.4	30.5	157
1926-27	47.9	235	184	198	377	368	540	961	871	205	72.2	63.7	342

North Fork of Yuba River at Goodyear Bar

[Drainage area, 214 square miles]

1910-11		214	482	725	596	975	2,160	2,260	3,330	982	301	303	
1911-12	186	191	151	214	221	278	432	1,390	1,060	236	147	144	388
1912-13	130	287	163	212	272	326	1,000	1,740	832	271	158	125	461
1913-14	116	185	506	1,690	995	1,350	2,070	2,900	1,750	540	221	171	1,040
1914-15	195	174	175	233	706	718	1,460	2,860	1,710	423	198	146	748
1915-16	131	152	322	443	996	1,570	1,970	2,230	1,930	570	246	179	893
1916-17	202	190	364	214	572	549	1,400	1,930	2,090	492	224	167	697
1917-18	135	146	196	174	353	643	1,250	1,110	488	174	118	176	413
1918-19	222	224	195	217	707	626	1,680	2,230	570	225	147	133	597
1919-20	148	132	204	201	193	446	858	1,480	644	230	124	120	401
1920-21	169	814	662	935	783	1,280	1,360	1,860	1,510	462	260	170	855
1921-22	143	168	247	318	452	562	1,120	3,140	3,100	665	279	176	865
1922-23	196	232	538	468	397	513	1,090	1,810	1,000	452	265	204	598
1923-24	193	141	144	165	376	206	458	318	139	96.0	80.6	80.0	199
1924-25	155	212	256	296	1,400	653	1,260	1,440	577	226	164	143	559
1925-26	152	173	217	211	720	622	1,370	747	270	141	109	99.2	399
1926-27	126	735	465	556	1,790	1,140	1,560	2,160	1,780	451	222	171	921
Av...	162	257	311	427	678	733	1,320	1,800	1,340	390	192	153	627

North Fork of Yuba River near North San Juan

1899-1900										458	313	290	
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236 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

North Fork of North Fork of Yuba River at Downville

[Drainage area, 71.2 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1910-11		78.4	173	260	247	403	858	864	1,140	323	122	78.0	
1911-12	72.6	67.0	49.4	82.8	93.1	122	193	516	351	93.9	43.1	47.5	144
1912-13	43.4	110	57.9	67.9	110	137	410	646	308	111	60.4	44.4	176
1913-14	40.9	65.6	230	652	309	480	759	927	444	122	67.9	50.0	346
1914-15	57.8	57.9	57.7	78.4	253	286	598	1,200	554	144	87.7	68.0	287
1915-16	54.6	65.7	100	116	335	692	868	869	662	186	71.7	58.8	339
1916-17	65.2	68.9	119	62.8	258	239	753	859	824	199	82.2	60.0	298
1917-18	54.7	59.9	67.5	61.0	114	214	434	342	112	53.7	42.5	65.5	135
1918-19	146	68.4	65.4	79.3	251	244	877	997	227	95.1	50.9	30.1	257
1919-20	39.4	34.6	74.3	58.4	76.6	194	401	707	273	86.2	54.4	39.5	170
1920-21	77.8	611	416	475	290	675	631	788	540	162	80.3	57.3	401
1921-22	57.6	62.7	88.5	128	180	250	546	1,490	1,140	262	94.3	65.9	365
1922-23	73.0	76.8	205	187	141	181	402	535	305	123	74.6	57.4	197
1923-24	56.1	38.6	44.6	50.8	139	75.3	150	109	45.0	26.9	19.1	19.6	64.1
1924-25	59.5	67.5	72.6	85.4	246	211	550	264	73.3	52.0	45.0	37.3	146
1925-26	40.3	103	109	118	534	290	451	482	195	84.6	56.3	56.5	207
Av...	62.6	102	121	160	224	293	555	725	450	133	65.8	52.2	235

Rock Creek at Goodyear Bar

[Drainage area, 10.8 square miles]

1910-11		4.99	12.8	102	53.8	50.2	218	95.2	38.6	3.14	0.70	1.03	
1911-12	1.85	3.41	2.07	8.17	5.28	13.8	20.4	52.5	10.0	1.58	.56	1.33	10.1
1912-13	1.43	8.95	4.17	10.0	11.4	16.2	71.9	61.3	7.56	1.51	.80	.77	16.3
1913-14	1.11	4.97	36.5	175	87.4	70.7	83.6	43.9	11.3	1.60	1.00	1.00	43.0
1914-15	1.69	1.26	1.36	12.4	83.9	56.4	87.9	139	18.6	2.49	1.00	1.00	33.5
1915-16	8.7	2.30	25.3	57.5	110	118	118	95.8	54.1	11.1	2.58	1.35	39.9
1916-17	2.74	4.29	24.8	7.59	65.3	48.2	118	85.4	25.8	1.88	.99	1.07	31.8
1917-18	1.24	2.99	3.47	3.07	16.7	65.1	83.7	25.0	2.40	.52	.38	2.99	17.2
1918-19	3.27	6.86	4.59	9.00	66.6	49.3	104	44.5	3.23	1.02	.70	1.05	24.1
1919-20	3.10	4.03	8.83	5.92	6.04	35.7	76.1	47.7	5.89	1.12	.70	1.08	16.4
1920-21	4.03	52.1	58.1	85.2	59.7	91.8	62.9	50.1	9.92	1.07	.58	.76	39.6
1921-22	1.41	2.67	14.2	14.2	46.2	54.8	78.3	135	61.8	5.97	1.92	1.00	34.7
1922-23	3.52	8.39	46.7	33.6	22.5	26.6	67.4	35.9	7.87	3.21	.75	1.24	21.5
1923-24	2.69	2.12	2.39	5.31	23.4	6.76	-12.2	1.78	.86	.23	.24	.28	4.76
1924-25	7.98	5.92	10.5	16.3	108	50.4	71.2	30.7	11.3	1.60	1.22	1.19	25.7
1925-26	2.20	4.14	7.67	10.9	60.2	25.2	52.6	9.50	1.92	.48	.50	.57	14.3
1926-27	2.71	45.5	25.6	35.7	135	70.9	89.9	46.2	10.4	2.63	.61	.74	38.0
Av...	2.62	9.70	17.0	34.8	56.6	50.0	82.0	56.3	14.0	1.92	.82	1.09	25.7

Goodyear Creek at Goodyear Bar

[Drainage area, 12.2 square miles]

1910-11		9.8	32.2	146	175	354	236	154	62.5	10.0	5.2	5.0	
1911-12	5.0	7.1	5.0	14.9	16.9	32.7	48.7	81.3	20.8	6.2	4.5	4.7	20.7
1912-13	4.9	17.6	7.8	17.2	32.7	34.8	110	87.7	20.0	6.8	5.0	4.1	28.9
1913-14	4.18	12.4	58.5	206	110	131	138	74.6	16.1	4.81	2.26	2.0	63.2
1914-15	3.11	2.65	3.61	13.7	85.3	81.2	130	166	34.9	10.5	6.34	3.97	44.9
1915-16	4.69	8.09	34.1	63.1	149	175	156	92.9	23.4	9.28	4.27	3.91	59.9
1916-17	6.39	10.8	36.2	16.7	81.7	82.2	173	133	45.9	10.6	4.71	4.20	50.1
1917-18	3.87	7.00	10.8	8.19	33.5	97.6	130	46.6	8.07	3.08	2.08	5.91	29.6
1918-19	10.3	14.5	8.97	16.1	106	82.2	175	82.1	10.8	7.55	6.06	5.37	43.1
1919-20	6.32	8.00	19.2	15.2	14.3	61.7	114	72.5	12.4	4.94	3.00	4.07	28.0
1920-21	8.16	85.2	85.1	125	86.4	138	105	84.5	26.5	6.84	4.84	5.33	63.3
1921-22	8.35	10.4	22.0	17.6	42.5	46.3	95.7	187	80.4	12	6	6	44.5
1922-23	8.52	17.1	61.0	48.8	39.2	54.8	106	43.0	16.9	7.32	5.09	5.17	34.4
1923-24	3.81	6.23	7.56	11.5	34.0	9.18	23.8	4.52	3.14	2.46	1.84	3.23	9.14
1924-25	11.9	12.2	20.7	20.0	150	61.4	90.7	47.4	17.3	6.16	6.78	6.62	37.5
1925-26	7.87	18.8	20.8	18.6	79.6	47.0	75.7	20.4	7.63	4.42	3.23	3.69	25.2
1926-27	8.61	65.7	33.4	49.1	209	109	135	73.6	20.0	8.48	4.68	2.95	58.8
Av...	6.62	18.4	27.5	48.0	85.0	94.0	120	85.4	25.1	7.14	4.46	4.48	40.1

Canyon Creek above Jackson Creek

1925-26				28.2	58.4	75.0	208	151	31.5	14.3	13.7	13.2	
1926-27	10.4	136	50.6	67.9	134	83.7	148	306	321	52.4	49.1	42.7	116



Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Canyon Creek below Bowman Lake

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1925-26	-----	-----	-----	44.1	124	152	321	217	-----	-----	14.6	14.3	-----
1926-27	-----	-----	-----	-----	98.5	166	246	198	7.79	5.87	4.80	2.70	-----

Jackson Creek at mouth

1925-26	-----	-----	-----	-----	16.4	29.6	67.7	22.6	4.56	9.70	1.94	1.09	-----
1926-27	1.46	12.7	13.1	18.3	40.7	32.0	53.6	85.5	39.5	7.37	3.00	3.80	25.8

Bear River near Colfax

1911-12	-----	62.2	30.3	131	63.2	118	151	251	130	9.13	10.1	31.4	-----
1912-13	12.7	120	65.7	287	201	127	478	195	35.1	0	0	0	128
1914-15	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	79.2	-----
1915-16	71.8	126	255	1,090	1,350	1,110	283	165	159	109	102	89.7	407
1916-17	121	135	-----	-----	943	458	618	292	98.0	-----	-----	-----	-----

Bear River at Van Trent

[Drainage area, 263 square miles]

1904-5	-----	217	421	888	861	1,040	564	596	193	37.1	38.1	37.3	-----
1905-6	32.2	23.8	39.8	2,320	1,200	3,000	1,180	737	608	113	26.5	26.1	776
1906-7	26.7	90.7	310	1,300	2,810	4,450	1,300	404	282	84.7	39.7	38.0	1,010
1907-8	44.5	51.0	363	731	535	553	316	280	142	40.8	30.0	31.8	260
1908-9	52.1	54.2	145	4,820	2,160	748	409	166	88.7	46.8	37.2	40.0	731
1909-10	53.6	269	979	914	709	788	302	117	48.4	24.5	21.0	22.7	354
1910-11	35.5	46.2	105	3,600	1,580	1,910	726	278	124	45.4	40.8	34.4	710
1911-12	50.2	65.8	34.9	210	118	286	262	297	71.0	15.2	13.1	22.2	121
1912-13	27.0	177	123	490	148	203	346	139	49.2	27.6	17.9	17.6	147
1913-14	21.7	73.7	834	3,820	2,010	813	581	283	168	143	143	166	750
1914-15	179	179	184	481	3,190	813	609	1,740	331	149	58.2	120	653
1915-16	137	171	959	3,320	2,870	1,740	581	350	259	198	152	139	902
1916-17	165	185	726	400	1,910	834	893	377	167	42.6	18.4	40.5	470
1917-18	19.7	35.2	40.8	35.4	395	950	361	165	82.7	10.2	10.4	29.8	177
1918-19	44.3	197	198	172	2,350	1,230	670	206	70.2	26.3	10.4	7.9	418
1919-20	16.9	18.4	136	54.0	62.3	538	542	128	83.2	7.77	10.0	7.20	134
1920-21	25.1	541	1,740	2,130	1,450	1,120	381	215	106	32.6	11.4	15.5	645
1921-22	25.3	23.1	441	360	2,700	1,570	1,020	564	187	40.5	13.6	18.7	565
1922-23	51.4	173	1,670	1,130	658	472	1,150	329	224	93.6	47.7	34.0	503
1923-24	38.0	27.0	38.2	56.9	97.8	55.6	51.3	5.38	6.9	2.9	2.8	2.77	31.9
1924-25	27.3	42.1	141	95.4	1,630	664	857	290	154	91.7	65.0	31.2	331
1925-26	28.0	34.5	56.6	164	1,670	312	1,130	263	31.7	18.8	63.7	48.2	307
1926-27	19.2	556	149	665	3,660	786	1,480	93.0	52.4	77.2	79.5	123	621
Av---	50.8	142	471	1,220	1,510	1,080	683	349	153	59.5	41.3	45.8	483

Bear River Canal near Colfax

[Drainage area, 257 square miles]

1911-12	-----	-----	-----	29.1	29.7	19.9	29.3	45.8	50.5	50.3	51.9	42.0	-----
1912-13	30.6	-----	-----	-----	-----	-----	31.8	72.9	68.3	61.6	60.1	57.8	-----
1913-14	-----	-----	-----	-----	-----	-----	-----	69.8	79.2	104	93.1	89.7	-----
1914-15	55.0	48.9	55.2	59.0	28.1	54.9	79.6	58.4	80.2	103	75.3	82.8	65.3
1915-16	88.7	63.4	49.2	28.8	21.9	0	27.2	90.5	154	185	166	129	83.8
1916-17	67.9	36.1	95.1	157	171	212	173	213	235	173	177	172	157
1917-18	197	161	119	82.2	143	101	232	236	226	162	167	137	164
1918-19	199	238	243	175	186	225	251	266	233	168	176	138	206
1919-20	95.9	92.6	130	157	134	219	233	259	209	236	243	205	185
1920-21	153	257	252	249	193	251	267	275	256	230	237	223	237
1921-22	221	203	155	116	211	257	170	276	273	236	245	277	220
1922-23	241	171	137	1.8	3.9	192	236	275	261	228	233	256	188
1923-24	255	206	126	85.2	171	102	74.4	190	203	231	212	93.7	163
1924-25	40.1	105	281	257	265	251	286	278	285	285	257	246	236
1925-26	185	155	133	136	79.0	43.9	169	262	286	296	300	294	196
1926-27	222	104	188	240	129	109	252	261	300	296	293	300	225
Av---	147	142	151	127	126	146	168	196	200	190	187	171	179

238 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

North Fork of American River near Colfax

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1910-11												100	
1911-12	95.3	104	83.8	197	188	393	643	1,330	736	141	70.5		
1912-13			152	382	401	532	1,330	1,370	496	153	82.6	60.8	
1913-14	55.7	113				1,650	1,980	2,120	1,090	261	84.6	65.4	
1914-15	81.9	75.8	125	325	1,900	1,330	1,900	3,420	1,600	281	91.1	73.1	925
1915-16	64.1	77.8	287	1,400	2,250	2,770	2,290	1,870	1,200	264	78.4	69.2	1,050
1916-17	85.4	107	583	332	1,720	1,050	2,130	2,100	1,470	246	84.8	66.2	823
1917-18	50.3	62.3	103	88.4	355	1,130	1,550	1,060	365	87.1	55.1	103	417
1918-19	172	182	172	205	1,440	1,220	2,080	1,790	330	99.4	74.9	57.3	645
1919-20	51.4	47.8	197	122	136	722	1,330	1,180	423	102	56.9	51.6	368
1920-21	99.0	623	957	1,450	1,230	1,860	1,540	1,600	985	191	72.0	62.3	887
1921-22	59.7	61.8	311	359	1,530	1,270	1,750	3,300	1,990	298	81.1	66.9	918
1922-23	72.5	230	1,350	776	696	804	1,910	1,800	838	264	60.3	71.7	739
1923-24	81.8	62.8	72.8	102	465	181	508	268	32.0	22.1	21.9	24.3	152
1924-25	61.3	210	347	354	2,250	992	1,980	1,640	608	155	75.1	57.7	715
1925-26	58.2	75.8	144	245	1,110	786	1,520	623	167	63.0	46.0	45.1	401
1926-27	53.8	847	487	834	3,250	1,370	2,710	1,980	1,210	226	76.9	61.6	1,070
Av...	76.2	192	358	478	1,260	1,130	1,700	1,720	846	178	69.5	64.8	701

American River at Fair Oaks

[Drainage area, 1,910 square miles]

1904-5			1,000	3,270	4,230	6,150	6,880	6,120	3,010	695	270	138	
1905-6	147	194	254	7,260	5,930	14,200	12,100	15,100	16,000	6,340	1,020	419	6,580
1906-7	298	563	3,970	4,150	14,800	24,700	15,600	12,200	11,100	5,510	1,500	813	7,930
1907-8	693	821	1,790	2,600	1,960	3,290	4,490	4,590	2,600	870	200	123	2,000
1908-9	384	441	576	24,300	15,500	6,460	7,990	9,510	7,650	2,310	607	287	6,330
1909-10	511	4,590	7,670	8,520	5,240	10,500	10,500	7,950	2,260	516	213	201	4,900
1910-11	342	538	1,000	13,900	10,600	13,000	15,100	14,500	17,700	3,200	459	304	7,600
1911-12	350	430	400	1,130	800	1,920	2,870	6,840	4,470	830	209	330	1,740
1912-13	243	1,470	599	1,570	1,100	1,750	6,040	7,210	2,550	614	283	154	1,960
1913-14	155	487	2,150	17,100	7,210	8,110	9,420	11,700	6,590	2,110	451	191	5,400
1914-15	332	375	681	1,550	9,210	4,650	8,510	15,500	8,030	1,770	391	225	4,230
1915-16	217	378	1,310	7,740	10,200	13,100	11,800	9,870	6,710	1,970	340	220	5,800
1916-17	626	651	2,010	1,590	7,330	4,470	9,230	10,300	8,920	1,680	372	198	3,910
1917-18	185	181	520	284	2,230	5,090	7,400	5,000	1,940	322	69.9	415	1,960
1918-19	940	805	778	677	6,500	5,110	9,440	9,660	1,610	269	139	134	2,980
1919-20	159	151	688	633	650	3,870	6,070	7,140	2,720	547	178	157	1,920
1920-21	564	2,560	4,420	7,700	5,680	8,690	7,260	8,570	6,240	1,240	326	246	4,450
1921-22	399	785	2,210	1,910	6,690	5,500	8,190	16,600	11,300	1,600	358	264	4,620
1922-23	499	1,030	6,490	4,360	3,160	3,550	9,510	9,960	4,680	1,580	351	377	3,900
1923-24	646	468	470	619	2,000	879	2,000	1,490	206	26.8	15.8	24.4	731
1924-25	234	965	1,610	1,520	10,900	5,180	10,200	9,810	4,340	1,080	324	283	3,810
1925-26	438	542	893	793	4,660	3,150	7,980	3,210	812	247	168	206	1,900
1926-27	353	2,920	2,250	3,620	13,900	7,170	12,200	9,780	6,930	1,240	381	329	5,010
Av...	396	970	1,930	5,080	6,540	6,980	8,730	9,240	6,020	1,590	375	263	4,050

Middle Fork of American River near East Auburn

1911-12		141	148	326	340	757	1,090	3,820	1,960	298	97.3	146	
1912-13	95.9	557	308	921	517	550	3,530	4,970	1,490	367	187	75.4	1,130
1913-14	69.8	180	966	7,680	3,470	2,390	6,770	5,600	3,400	897	150	68.8	2,630
1914-15	73.0	91.9	321	801	6,120	4,770	4,550	9,560	3,170	471	203	94.4	2,490
1915-16	50.9	173	795	1,910	3,910	5,370	5,270	4,270	2,830	747	175	101	2,130
1916-17	222	243	874	452	2,140	1,700	4,420	4,660	3,840	664	163	92.5	1,610
1917-18	84.0	125	226	200	643	1,830	3,170	2,510	1,160	153	67.2	164	1,860
1918-19	337	326	286	306	2,210	1,850	5,230	3,760	1,665	151	73.2	63.2	1,260
1919-20	93.0	85.8	348	260	286	1,350	2,900	3,380	1,110	191	64.8	55.4	845
1920-21	195	1,190	1,440	2,430	2,050	3,520	3,250	3,690	2,560	485	111	79.6	1,750
1921-22	90.2	106	409	496	1,820	2,040	3,610	7,260	4,600	637	125	80	1,770
1922-23	200	406	2,610	1,590	1,270	1,870	3,840	4,230	1,810	724	145	114	1,670
1923-24	201	108	136	222	840	353	1,010	738	108	43.2	30.0	25.4	815
1924-25	122	357	627	596	3,610	1,900	3,960	3,560	1,580	429	120	90.1	1,990
1925-26	128	161	319	279	1,570	1,570	3,150	1,340	3,966	89.4	43.4	37.3	746
1926-27	75.7	1,230	790	1,440	5,150	2,840	5,080	4,470	2,960	581	137	88.5	2,040
Av...	136	343	663	1,240	2,250	2,170	3,800	4,240	2,100	433	118	86.0	1,600

Monthly discharge, in second-feet, at station in the Sacramento River Basin, Calif.—  
Continued

**Rubicon River at Rubicon Springs**

[Drainage area, 31.6 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1909-10	1.0	44.8	78.7	47.3	68.3	157	258	388	138	44.7	3.5	13.1	-----
1910-11	4.7	10.4	5.89	9.97	43.9	65.0	210	446	861	280	41.2	6.1	-----
1911-12	3.9	52.3	11.3	13.9	12.0	20.6	71.1	343	362	83.5	12.2	16.1	-----
1912-13	1.4	7.95	33.6	118	32.4	49.3	181	431	227	77.8	21.7	3.7	92.3
1913-14					75	124							

**Rubicon River near Quintette**

[Drainage area, 198 square miles]

1909-10			968	554	428	1,130	1,880	1,400	469	102	17.2	21.2	-----
1910-11	20.5	137	431	601	591	881	1,880	2,330	3,230	783	127	37.7	-----
1911-12	32.4	46.1	38.1	68.0	119	256	512	1,700	1,020	247	57.2	74.0	-----
1912-13	18.4	306	105	98.5	208	325	1,110	1,910	748	216	64.1	18.3	428
1913-14	9.5	54	296	1,180	749	1,240	1,870	2,770					

**Little Rubicon River near Rubicon Springs**

[Drainage area, 7 square miles]

1910-11		10.2	40.5	21.9	27.6	21.3	52.6	98.3	208	47.7	4.0		
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**Little South Fork of Rubicon River at South Fork sawmill, near Quintette**

[Drainage area, 16.6 square miles]

1909-10					55.3	105	161	99.5	18.3	1.58	0	0.41	-----
1910-11	1.77	6.85	25.9	58.4	63.0	67.0	179	265	274	29.6	3.4	1.1	-----
1911-12	2.7	4.3	8.2	9.2	11.5	14.6	48.2	169	77.8	5.5	1.0	3.7	-----
1912-13	1.9	25.7	9.6	8.5	17.5	25.7	102	164	50.7	9.15	2.43	1.5	34.9
1913-14	1.03	5.0	41.6	70.9	44.9	115	179	225	89.4				

**Little South Fork of Rubicon River below Gerle Creek, near Quintette**

[Drainage area, 49.6 square miles]

1909-10					116	352	452	257	30.4	5.2	4.9	6.0	-----
1910-11	9.4	14.1	90.5	137	195	226	541	752	682	56.6	8.8	15.1	-----
1911-12	15.3	21.8	22.5	11.7	17.4	39.5	125	440	172	24.0	22.6	5.3	-----
1912-13	4.4	62.2	13.1	13.9	46.7	77.5	276	437	93.3	11.1	5.2	4.0	87.1
1913-14	3.89	4.5	68.3	176	116	360	488	659					

**Little South Fork of Rubicon River at mouth, near Quintette**

[Drainage area, 57.8 square miles]

1909-10			260	204	158	380	476	292	49.6	5.9	3.9	7.4	-----
1910-11	12.0	15.2	120	191	248	298	692	841	736	103	39.7	18.0	-----
1911-12	12.8	24.3											

**Little South Fork ditch at sawmill, near Quintette**

1909-10										7.4	11.8	12.8	-----
1910-11	10.4	0.24	0	0	0	0	0	0	0	9.5	12.7	10.1	-----
1911-12	9.52	10.7								14.3	18.2	22.0	-----
1912-13	17.0	0	0	0	0	0	0	0	5.0	15.3	21.4	17.8	-----
1913-14	9.66	1.33											

**Gerle Creek near Rubicon Springs**

[Drainage area, 9 square miles]

1909-10											17.8	18.1	-----
1910-11	19.5	5.2	25.4	18.0	31.8	35.4	72.3	88.5	107	5.69	21.2	15.0	-----
1911-12	15.5	16.1	18.1	3.2	2.5	3.8	3.0		37.7	12.9	28.0		-----

240 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1928

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Pilot Creek near Quintette

[Drainage area, 18.7 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1909-10						156	105	29.8	8.9	7	7	8.1	
1910-11	7.7	4.9	9.2	123	98.4	127	246	117	45.9	11	6	5.7	
1911-12	10.6	15.1	8.5	18.6	8.1	9.2	30.5	63.6	16.5	10.9	9.9	15.1	
1912-13	11.3	12.7	8.6	19.6	18.0	23.7	86.7	37.3	13.4	9.1	9.3	5.5	21.2
1913-14	4.5	6.0	31.7	267	132								

Pilot Creek ditch near Quintette

1909-10						11.8	6.6	12.8	11.9	8.8	8.9	12.3	
1910-11	13.1	6.2	7.6	2.6	0	0	0	0	5.2	10.5	8.1	10.9	
1911-12	12.2	12.1	3.56	1.64	7.44	10.5	10.7	13.5	13.7	14.4	14.5	16.3	
1912-13	12.0	7.8	5.8	0	0	2.1	7.4	9.2	12.1	14.0	18.5	17.0	8.9
1913-14	11.4	10.2	10.7	18.5									

South Fork of American River below Silver Fork, at Kyburz

1905-6						385	810	1,830	2,870	1,480			
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South Fork of American River at Kyburz

1905-6								625	1,240	770	180	42.0	
1906-7	32.8	23.2						736	446	133	37.8	90.2	
1922-23								228	59.5	35.4	6.36	1.13	59.1
1923-24	34.4	22.7	37.9	31.4	60.0	35.3	158						

South Fork of American River near Kyburz

1906-7													55.3
1907-8	34.0	41.2											
1922-23	33.4	22.5	87.3	82.0	83.1	247	741	1,580	906	301	30.5	55.0	348
1923-24	52.5	56.7	20.8	9.28	18.1	2.48	172	265	76	62	.70	.54	50.0
1924-25	8.28	23.8	31.7	19.1	295	342	904	1,560	1,050	187	9.08	1.10	369
1925-26	4.77	5.65	28.4	11.3	16.1	169	662	601	107	6.35	.58	.56	135
1926-27	2.50	127	73.7	126	304	461	861	1,580	1,480	258	2.81	8.95	439

South Fork of American River near Camino

1922-23		90.6	833	564	521	927	2,390	3,280	1,640	497	28.2	54.3	
1923-24	69.5	25.3	29.1	98.3	337	146	620	572	13.8	8.73	11.7	12.3	161
1924-25	41.4	224	334	305	1,830	1,260	2,940	3,360	1,990	407	62.9	33.3	1,060
1925-26	59.5	73.4	171	126	532	831	1,950	1,210	259	37.2	11.8	12.6	437
1926-27	16.1	475	349	605	2,120	1,790	3,030	3,370	2,820	509	68.6	62.3	1,260

South Fork of American River near Placerville

1910-11													110
1911-12	119	161	145	323	247	516	779	2,710	2,190	361	90.6	136	648
1912-13	91.2	365	196	355	384	518	1,840	2,900	1,210	328	124	72.3	699
1913-14	81.8	152	355	3,650	2,200	2,520	3,410	4,650	3,220	1,040	186	88.8	1,790
1914-15	146	147	212	408	1,820	1,500	2,910	4,360	3,560	905	168	106	1,350
1915-16	95.8	133	348	1,560	2,360	3,460	4,300	3,910	3,170	883	188	105	1,700
1916-17	339	260	736	494	1,770	1,310	3,010	4,020	4,480	901	154	112	1,460
1917-18	99.4	98.0	152	139	469	1,460	2,650	2,610	1,490	141	63.3	153	793
1918-19	296	264	213	228	1,410	1,390	3,080	4,070	754	123	91.8	85.7	996
1919-20	111	91.3	300	218	230	1,130	1,890	3,220	1,390	293			
Av...	153	186	295	808	1,210	1,530	2,650	3,610	2,380	553	133	108	1,180

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

## Echo Lake flume near Wade

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23													7.2
1923-24									5.90	2.28	5.57		.01
1924-25													
1925-26											8.65		.02
1926-27										.43	15.0		9.35

## Medley Lakes outlet near Wade

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	24.6								26.4	2.90	19.0	55.1	
1923-24	8.25	0.74	6.02	4.0	0.5	1.0	3.05	6.14	38.2	35.4	1.25		8.80
1924-25	.52								64.9	49.3	45.1	54.8	
1925-26	5.21							13.7	35.0	88.2	3.82	0	
1926-27	.21	2.91	1.03	.4	5	52	12	25	36.5	43.8	42.9	60.8	23.6

## Silver Lake outlet near Kirkwood

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	26.8	19.9					46.0	164	95.5	25.6	7.55	0.16	
1923-24	.20	.20	5.15	28.0	10.6	0.10	.20	56.6	5.11	28.7	25.1	1.18	13.6
1925-26	39.8	7.74	7.77	1.39	.20	.18	84.1	85.4	24.7	15.1	38.4	3.89	25.9
1926-27	.24	5.40	6.99	24.6	28.0	28.0	36.8	179	202	20.8	42.3	30.1	50.3

## Silver Fork of South Fork of American River near Kyburz

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1923-24												56.5	
1924-25	42.3	63.1	70.5	75.9	213	230	540	772	462	129	60.9	29.7	224
1925-26	59.1	57.2	57.7	66.8	42.9	145	405	314	133	49.3	114	118	130
1926-27	65.9	106	82.0	114	204	267	507	780	644	159	74.9	76.3	256

## Twin Lakes outlet and spillway (combined) near Kirkwood

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	1.47	1.36	1.20	4.30	4.30	5.01	29.3	126	134	86.5	13.8	1.69	34.2
1923-24	21.4	9.41	1.54	.2	.20	.60	1.00	1.00	10.10	.20	40.2	48.9	11.2
1924-25	28.2	17.1	7.39	7.46	.20	.25	.79	.82	130	54.7	40.4	2.08	24.2
1925-26	7.79	33.0	25.4	45.1	2.54	.57	1.93	63.8	53.7	15.7	63.8	98.8	34.5
1926-27	54.2	28.2	10.1	2.12	.40	.58	.57	46.8	154	61.2	8.88	22.6	32.5

## El Dorado Canal near Kyburz

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	40.9	36.7	33.4	39.9	36.5	40.3	0	20.7	49.5	52.3	53.5	51.6	38.0
1923-24	29.5	1.3	38.1	67.5	104	74.1	115	124	98.7	79.4	76.9	54.7	71.8
1924-25	43.1	85.6	79.1	104	88.2	87.4	93.8	109	134	150	137	108	102
1925-26	93.1	84.2	78.7	85.2	83.2	110	130	108	148	152	137	128	112
1926-27	77.1	66.3	81.4	82.4	85.9	88.4	97.4	116	138	148	146	147	106

## Alder Creek near Whitehall

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	1.44	2.27	47.9	36.5	22.1	53.7	147	94.7	25.6	4.54	0.88	0.75	36.5
1923-24	1.04	1.00	1.10	3.30	17.1	5.22	14.7	5.06	.55	.19	.11	.13	4.05
1924-25	.69	7.38	13.3	16.0	95.6	80.4	162	98.4	23.2	4.20	.95	.41	41.4
1925-26	.79	1.62	2.34	5.32	22.9	47.7	97.9	19.2	3.23	.67	.25	.21	16.7
1926-27	.37	18.8	24.9	29.0	103	118	171	115	30.0	4.06	1.21	.49	50.8

## Plum Creek near Riverton

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23		1.8	52.1	18.3	16.2	17.4	45.3	6.50	1.60	0.5	0.3	0.75	
1923-24	0.45	.50	1.78	2.00	6.57	.92	2.17	.47	.22	.11	.15	.23	1.27
1924-25	.60	2.11	5.77	3.55	39.3	18.1	42.7	9.65	3.17	.72	.26	.21	10.3
1925-26	.48	.78	1.05	2.31	17.9	7.57	18.3	2.35	.65	.21	.18	.20	4.21
1926-27	.26	8.08	3.96	13.3	54.9	24.2	44.7	7.79	1.75	.47	.26	.26	13.0

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Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

## Silver Creek at Union Valley

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1924-25	12.4	72.6	90.0	100	570	340	649	825	420	78.7	11.6	7.89	262
1925-26	20.9	37.9	64.2	63.5	128	282	528	280	49.7	6.67	3.20	2.79	122
1926-27	6.33	131	112	156	373	390	676	846	644	97.0	11.6	6.97	286

## Silver Creek near Placerville

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1921-22	-----	-----	-----	152	223	310	868	2,250	1,350	214	70.2	54.2	-----
1922-23	54.2	88.3	401	291	251	466	1,130	1,330	631	226	60.2	51.8	416
1923-24	80.0	54.1	56.7	74.7	237	143	362	280	48.1	17.6	12.4	12.8	114
1924-25	40.7	141	211	201	976	684	1,300	1,390	750	191	47.5	38.7	493
1925-26	62.5	89.4	148	118	297	496	928	485	116	31.3	22.0	19.7	233
1926-27	28.9	297	242	381	1,040	896	1,330	1,450	1,110	258	60.7	37.7	589

## South Fork of Silver Creek at Ice House

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1921-22	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	9.6	3.0	-----
1924-25	3.61	23	30	32.8	91.7	83.4	207	383	232	63.7	6.82	2.46	96.5
1925-26	7.39	8.27	20.5	10.1	18.7	73.7	199	147	39.2	3.30	.63	.53	44.0
1926-27	1.13	35.7	29.1	39.4	70.4	79.3	165	348	345	77.9	9.66	1.76	100

## Finnon reservoir outlet near Placerville

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	3.30	4.06	10.2	6.58	7.32	6.35	8.95	7.85	3.04	4.26	4.20	2.75	5.73
1923-24	4.40	4.69	5.07	5.55	3.53	5.66	4.89	4.19	1.94	.07	1.34	1.67	3.59
1924-25	1.10	3.92	3.22	.59	10.6	5.33	8.02	3.65	3.97	3.21	3.19	3.33	4.11
1925-26	3.86	4.53	4.88	4.89	7.93	4.58	7.43	4.42	8.95	.14	0	0	4.26
1926-27	3.51	2.53	4.43	2.92	13.1	5.37	7.72	3.77	5.88	2.39	.19	7.65	4.88

## Western States Gas & Electric Co.'s flume near Camino

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1922-23	-----	104	105	104	105	105	105	106	106	106	101	104	-----
1923-24	107	106	105	102	107	107	107	108	83.6	42.0	38.8	41.2	87.7
1924-25	51.7	58.4	74.3	93.0	107	65.5	24.0	84.3	106	116	111	108	83.3
1925-26	113	109	106	109	108	106	105	105	110	106	87.4	90.7	105
1926-27	86.5	87.4	103	104	105	104	107	105	110	107	102	102	102

## Cache Creek at Lower Lake

[Drainage area, 500 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1900-1901	-----	-----	-----	460	722	832	587	461	330	213	126	55.4	-----
1901-2	28.8	23.3	63.8	64.7	422	1,750	1,440	897	569	389	261	182	508
1902-3	147	277	319	409	766	786	740	533	336	208	111	48.8	390
1903-4	21.3	53.6	168	230	588	2,510	2,660	1,460	762	483	302	188	786
1904-5	166	143	162	486	913	955	1,000	721	501	323	195	102	472
1905-6	56.0	30.3	30.7	328	696	1,220	1,510	907	659	450	285	165	528
1906-7	107	80.2	146	404	850	1,790	2,450	1,360	766	466	290	174	740
1907-8	119	96.7	129	292	634	726	566	381	228	132	71.5	26.2	283
1908-9	9.7	8.0	14.0	1,120	3,940	3,010	1,860	949	598	395	235	133	1,020
1909-10	90.4	86.0	163	253	462	555	576	402	248	132	66.5	18.4	254
1910-11	7.4	4.5	5.3	42.9	392	1,160	918	639	438	268	146	71.2	341
1911-12	45.7	35.3	27.6	40.4	77.2	138	155	138	94.9	48.4	13.8	8.8	68.5
1912-13	4.91	9.10	19.8	147	272	248	252	202	133	71.5	29.3	1.1	115
1913-14	3.21	1.75	59.7	1,780	2,960	2,100	1,040	696	492	314	190	111	800
1914-15	77.3	64.4	83.7	202	2,670	1,280	1,480	818	628	410	245	150	746
1915-16	101	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Av...	65.6	65.2	99.4	417	1,080	1,340	1,150	704	452	287	171	95.7	504

Monthly discharge, in second-feet, at stations in the Sacramento River Basin, Calif.—  
Continued

Cache Creek at Yolo

[Drainage area, 1,230 square miles]

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Mean
1902-3	0.0	410	295	1,070	1,730	1,530	1,240	670	351	83.2	1.0	0.0	1,230
1903-4	253	108	474	2,080	3,230	4,630	3,190	1,660	676	323	105	55.8	875
1904-5	32	0	0	2,250	1,700	3,270	2,440	1,300	784	333	166	69.4	1,030
1905-6	13.6	0	652	1,750	2,360	5,380	3,580	1,430	747	421	189	36	1,380
1906-7	40.1	67.5	188	792	1,950	1,270	662	310	66.6	4.48	.03	0	446
1907-8	0.0	0	0	5,390	8,450	4,040	2,070	908	496	240	86.3	7.17	1,810
1908-9	18.6	32.6	391	766	890	1,010	727	317	31.3	.58	0	0	349
1909-10	0	0	0	988	1,140	3,870	1,160	626	319	109	10.3	4.3	685
1910-11	.1	0	0	51.9	51.4	306	116	82.2	.5	0	0	0	50.9
1911-12	0	0	33.8	691	355	38.6	90.7	4.66	0	0	0	0	99.9
1912-13	0	31.4	1,340	7,450	5,330	2,850	1,460	746	305	116	16	6.7	1,620
1913-14	14	60.5	128	1,200	7,300	3,730	2,410	1,370	529	207	49.1	9.16	1,380
1914-15	3.03	26.9	690	4,400	2,930	2,080	994	200	22.5	6.55	3.52	2.91	943
1915-16	7.48	37.6	108	371	1,410	386	129	23.6	19.5	6.04	0	2.23	200
1916-17	15.5	19.6	20.4	18.2	185	210	32.2	1.09	0	0	0	12.6	42.1
1917-18	12.5	4.79	7.37	133	891	684	89.8	0	0	0	0	0	147
1918-19	0	0	0	0	0	0	48.1	0	0	0	0	0	3.94
1919-20	0	194	934	2,770	2,280	314	58.3	10.4	2.77	0	0	0	538
1920-21	2.15	0	147	70.5	1,030	351	144	4.84	0	0	0	0	140
1921-22	0	37.9	540	425	217	59.7	236	25.0	0	0	0	0	128
1922-23	.13	.21	.15	9.53	93	0	0	0	0	0	0	0	8.22
1923-24	0	0	107	62.9	1,960	186	644	1,000	127	11.6	0	12.5	331
1924-25	15.9	0	0	95.3	1,580	134	1,530	39.7	.20	0	0	0	272
1925-26	0	378	561	1,050	5,560	2,300	1,790	73.9	3.0	0	0	0	943
Av...	16.5	58.7	276	1,360	2,190	1,620	1,060	474	201	83.0	28.5	9.00	611

Putah Creek near Guenoc

[Drainage area, 91 square miles]

1903-4						2,000	284	89.2	31.1	16.3	10.6	13.0	
1904-5	79.8	42.1	542	1,280	619	629	288	120	85.0	12.4	8.8	10.0	310
1905-6	15.2	10.0	21.9	1,930	727	916	302	215	165	26.8			

Putah Creek at Winters

[Drainage area, 805 square miles]

1905-6	10	12.5	20.4	3,450	1,370	3,120	935	387	250	53.3	22.7	14.7	804
1906-7	13.7	30.6	738	2,320	1,860	5,150	919	230	110	39.9	16.3	15.1	954
1907-8	17.7	24.7	197	808	1,390	662	130	64.7	27.6	7.32	5.35	3.55	278
1908-9	3.61	6.73	138	7,370	5,500	1,180	437	137	72.6	23.5	11.1	10.6	1,240
1909-10	16.2	59.1	745	1,120	644	762	300	87.7	26.3	7.85	5.27	2.67	326
1910-11	3.24	7.98	34.7	2,390	1,520	3,470	535						
1911-12	9.9	15.6	23.5	238	75.3	392	91.4			2.99	.47		
1912-13	3.68	148	106	1,470	156	135	136	34.1	6.68	.13	0	0	184
1913-14	0	117	2,600	7,710	2,990	754	436	162	64.9	21	8.5	7.1	1,240
1914-15	8.9	9.1	157	1,870	6,770	1,770	705	679	155	53.1	29.5	13.9	980
1915-16	10.1	21.1	1,340	6,770	1,800	1,130	333	147	68.0	17.1	9.45	8.51	977
1916-17	12.6	15.5	468	411	3,040	565	283	96.9	25.3	5.47	2.93	2.08	393
1917-18	1.42	3.32	21.9	19.1	670	629	140	25.8	2.69	.11	0	0	123
1918-19	0	2.14	37.2	448	3,580	1,190	162	54.0	6.19	.27	0	0	436
1919-20	0	0	24.9	16.0	12.8	171	429	53.0	.36	0	0	0	58.7
1920-21	0	1,050	1,940	3,760	965	448	180	69.6	17.4	1.60	0	0	705
1921-22	0	0	562	139	2,370	578	247	64.9	14.5	.68	0	0	317
1922-23	0	221	2,290	885	416	151	528	73.3	19.2	2.45	0	0	394
1923-24	0	0	2.9	53.4	557	37.7	12.5	1.11	0	0	0	0	53.2
1924-25	0	135	421	168	3,880	458	531	367	104	10.0	.14	0	482
1925-26	0	.78	15.8	581	3,000	236	2,090	116	23.5	1.81	0	0	479
1926-27	0	1,060	614	938	4,250	636	1,650	141	48.1	10.5	1.83	.07	752
Av...	5.05	134	568	1,950	2,130	1,070	507	150	52.1	12.3	5.41	3.91	558