Surface Water Supply of the United States 1946

Part 14. Pacific Slope Basins in Oregon and Lower Columbia River Basin

Prepared under the direction of C. G. PAULSEN, *Chief Hydraulic Engineer*

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Prepared in cooperation with the States of Oregon and Washington, and other agencies

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J. A. Krug, *Secretary*

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W. E. Wrather, *Director*

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Oregon and Washington and other agencies, by personnel of the Water Resources Branch under the direction of:

C. G. Paulsen ..... Chief Hydraulic Engineer
J. V. B. Wells ..... Chief, Division of Surface Water
B. J. Peterson ..... Chief, Annual Reports Section

District Engineers (Surface Water)

G. H. Canfield ..... Portland, Oreg.
F. M. Veatch ..... Tacoma, Wash.

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SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN OREGON AND LOWER COLUMBIA RIVER BASIN, 1946

SCOPE OF WORK

This volume is one of a series of 14 reports preeenting results of measurements of stage and flow made on streams, lakes, and reservoirs in the United States during the water year ending September 30, 1946. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of the flow of streams and of the stage and contents of lakes and reservoirs have been made at about 10,900 gaging stations in the 48 States and also at many in the Territories of Alaska and Hawaii. In July 1946, 5,810 gaging stations, including those in Hawaii, were being maintained by the Geological Survey and cooperating organizations. Miscellaneous discharge measurements were made during the water year at many other points.

In the execution of the work many State and private organizations have cooperated, either by furnishing data or by assisting in collecting data. Cooperation of the first kind is acknowledged in connection with the description of each station affected; cooperation of the second kind is acknowledged, under the heading "Cooperation," in the introductory matter that precedes the gaging-station records in each volume. In the present volume, the section on cooperation of the second kind appears on page 12.

DEFINITION OF TERMS

The units in which stream-flow data are presented in this report and other terms used herein are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 fcot per second.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the runoff is distributed uniformly both as regards time and area.

"Runoff in inches" is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. It is used for comparing runoff with rainfall, which is usually expressed in inches.

An "acre-foot" is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in connection with storage for irrigation.

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

"Stage-discharge relation" is an abbreviation for the term "relation between gage height and discharge."

"Control" is a term used to designate a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural section, a reach of the channel, or an artificial structure.

"Contents" is a term applied to the volume of water in a reservoir. It is computed on the basis of a level pool and does not include bank storage unless otherwise indicated.

EXPLANATION OF DATA

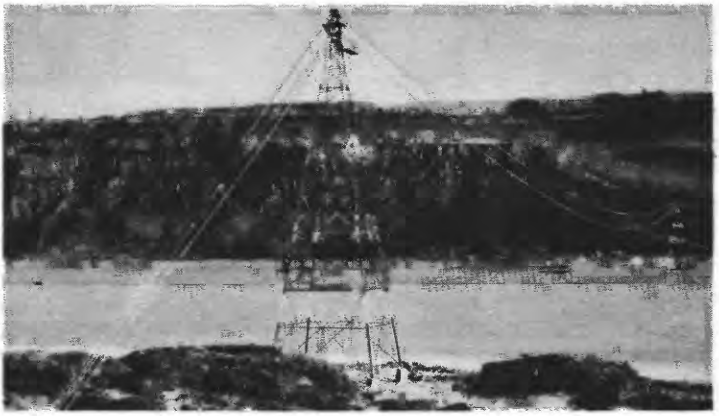
The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the records of stage and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily mean gage height to those rating tables gives ths daily mean discharge, from which ths monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. At times the stage-discharge relation for a station may be temporarily changed by the presence of aquatic growth or debris on the control. For such times the daily mean discharge is computed by what is essentially the "shifting-control" method, described above.

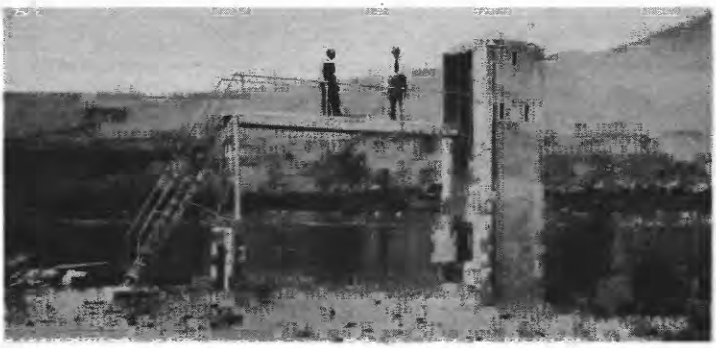
At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources, which necessitates the use of the "slope method," in which the slope or fall in a reach of the stream is a factor in the determination of discharge. Information requisite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

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, which makes it impossible to compute the discharge in the usual manner. Discharge for periods of ics effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for stations in ths same or nearby basins. For those stations at which the stage-discharge relation is affected by ice, the days included in the periods of ice effect either are indicatsd in the table by symbols referring to a footnote that states this fact or are givsn in a general nots following the table. The days on which discharge measurements were made during or between periods of ice effect, shortly before the first period, or shortly after the last period are similarly indicated by a footnote.

For most of the gaging stations on streams in the area covered by this report ths data presented comprise a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating



A. COLUMBIA RIVER NEAR THE DALLES, OREG.
Measuring cable.



B. COLUMBIA RIVER NEAR THE DALLES, OREG.
Gage shelter and stilling well.

C. WILLAMETTE RIVER AT ALBANY, OREG.

FIGURE 1.—GAGING-STATION STRUCTURES.

tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, its latitude and longitude as determined from the best available maps, and information in regard to diversions that decrease the flow at the gage, artificial regulation from pondage or storage, and the accuracy of the records. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more complete years of record. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. Selected peak discharges with the times of their occurrence are given, below the table of monthly discharge, for some stations. This supplementary information is generally omitted for a station at which the drainage area of the stream is less than 10 or more than 10,000 square miles or at which, on most days, the peak discharge exceeds the mean discharge by less than 10 percent.

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

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge, not the momentary discharge when the water surface was at crest stage. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents is given. A skeleton table of capacity at given stages is usually given in the first report in which data for a station are published but is omitted from succeeding reports.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

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

Yield at some stations as indicated by monthly means may vary widely from natural yield, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or other factors. For such stations figures of "second-feet per square mile" and "runoff in inches" are not published unless storage or diversion records are included indicating the extent of the regulation or diversion or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless its inclusion is indicated. Figures of second-feet per square mile and runoff in inches are also omitted if the drainage area includes large noncontributing areas or if the average annual rainfall over the drainage area is less than 20 inches.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not show the water supply available for further development, as prior appropriations below the station must first be satisfied.

The table of monthly discharge presents in summary the distribution of the flow past the station. The table of daily discharge affords opportunity for more detailed studies of the variation in flow. As further observations in each succeeding year may be expected to throw new light on data previously published, it should be borne in mind that such data are subject to revision in succeeding water-supply papers.

PUBLICATIONS

The results of stream-flow measurements are now published annually in 14 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

Part 1. North Atlantic slope basins (St. John River to York River).
2. South Atlantic and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River Basins.
6. Missouri River Basin.
7. Lower Mississippi River Basin.
8. Western Gulf of Mexico basins.
9. Colorado River Basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River Basin.
13. Snake River Basin.
14. Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be obtained or consulted as explained below.

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the offices of the water-resources branch of the Geological Survey as follows:

East of the Mississippi River:
Albany, N. Y., 528 Federal Building.
Asheville, N. C., 220 Post Office Building.
Atlanta, Ga., 410 Grand Theater Building.
Augusta, Maine, Statehouse.
Baton Rouge, La., 124 Geology Building, Louisiana State University.
Boston, Mass., 939 Post Office Building.
Charleston, W. Va., 408 Union Building.
Charlottesville, Va., House G, Dawson Row, University of Virginia.
Chattanooga, Tenn., 442 Post Office Building.
College Park, Md., 105 Engineering Building, University of Maryland.
Columbia, S. C., 207 Creason Building.
Columbus, Ohio, 404 Engineering Experiment Station, Ohio State University.
Harrisburg, Pa., 490 Education Building.
Hartford, Conn., 203 Federal Building.
Indianapolis, Ind., 205 Underwriters Building.
Jackson, Miss., 208 Millsaps Building.
Knoxville, Tenn., 337 Post Office Building.
Louisville, Ky., 531 Federal Building.
Madison, Wis., 666 State Office Building.
Montgomery, Ala., 507 Post Office Building.
Morgantown, W. Va., 406 Mineral Industries Building.
New Philadelphia, Ohio, Muskingum Watershed Conservancy District Building.
Ocala, Fla, 304 Post Office Building.
Pittsburgh, Pa., 515 Plaza Building.
Raleigh, N. C., 908 Capital Club Building.
St. Paul, Minn., 1427 New Post Office Building.
Trenton, N. J., 228 Federal Building.
Urbana, Ill., 14 Post Office Annex, Elm Street.
Washington, D. C., Federal Works Agency Building.
Williamsburg, Ky., Kentucky Highway Building.

West of the Mississippi River:
Albuquerque, N. Mex., 723 North Second Street.
Austin, Tex., 302 West Fifteenth Street.
Bismarck, N. Dak., 7 Eltinge Building.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 126 New Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 408 Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Lincoln, Nebr., 510 Rudge-Guenzel Building.
Los Angeles, Calif. 429-F United States Post Office and Courthouse.
Oklahoma City, Okla., 535 State Capitol.
Pierre, S. Dak., City Hall.
Portland, Oreg., 606 Post Office Building.
Rolla, Mo., Ramsey Building.
St. Louis, Mo., 1004 New Federal Building.
Salt Lake City, Utah, 303 Federal Building.
San Francisco, Calif., 702 Appraisers Building.
Santa Fe, N. Mex., 204 United States Courthouse.
Tacoma, Wash., 207 Federal Building.
Topeka, Kans., 305 Federal Building.
Tucson, Ariz., 210 Post Office Building.

A list of the Geological Survey publications may be obtained by applying to the Director, Geological Survey, Washington, D. C.

Prior to publication, records of discharge in provisional form for individual stations may usually be obtained from the district offices listed above.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Stream-flow data for the years 1884-1901, in reports of the Geological Survey

(A = Annual Report; B = Bulletin; W = Water-Supply Paper)

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to September 1890.
12th A, pt. 2	....do	1884 to June 30, 1891.
13th A, pt. 3	....do	1884-92.
14th A, pt. 2	Monthly discharge	1888-93.
B 131	Descriptions, measurements, gage heights, and ratings	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895.
W 11	Gage heights	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge	1895-96.
W 15	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
W 16	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1897.
W 27	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
W 28	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4.	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.

Papers on surface water supply containing records from 1899 to date, grouped by years and drainage basins, are listed by number on page 8. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

The records at most of the stations discussed in these reports extend over a series of years. Miscellaneous measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report, the streams and points of measurement listed appearing in the same relative order as the streams and gaging stations in the body of the report. An index of the records obtained prior to 1904 has been published in Water-Supply Paper 119.

Each of the reports on surface water supply for the year 1939, issued as Water-Supply Papers 871 to 884 (see table on p. 8), contains, for the area covered by that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record have been collected. These summaries are availabl also as separate reprints.

Numbers of water-supply papers containing results of stream measurements, 1899-1946

(For basins included see p. 5).

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1899 a...	35	b35, 36	36	36	36	c36, 37	37	37	d37, 38	38, e39	38, f39	38	38	38
1900 g...	47, h48	48	48, 149	49	49	49, j50	50	60	50	51	51	51	51	51
1901.....	66, 75	65, 75	65, 75	65, 75	k65, 66, 75	66, 75	k65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902.....	82	b82, 83	83	m82, 83	k83, 85	84	k83, 84	84	85	85	85	85	85	85
1903.....	97	b97, 98	98	97	k98, 99, n100	99	k98, 99	99	100	100	100	100	100	100
1904.....	o124, p125, q126	q126, 127	128	129	k128, 130	130, r131	k128, 131	132	133	133, s134	134	135	135	135
1905.....	o165, p166, q167	q167, 168	169	170	171	172	k169, 173	174	175, t177	176, s177	177	178	178	u177, 178
1906.....	o201, p202, q203	q203, 204	205	206	207	208	k205, 209	210	211, t213	212, s213	213	214	214	214
1907-8...	241	242	243	244	245	246	247	248	249	250, s251	251	252	252	252
1909.....	261	262	263	264	265	266	267	268	269	270, s271	271	272	272	272
1910.....	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911.....	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912.....	321	322	323	324	325	326	327	328	329	330	331	332-A	332-B	332-C
1913.....	351	352	353	354	355	356	357	358	359	360	361	362-A	362-B	362-C
1914.....	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915.....	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916.....	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917.....	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918.....	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919-20..	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921.....	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922.....	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923.....	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924.....	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925.....	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926.....	621	622	623	624	625	626	627	628	629	630	631	632	633	634
1927.....	641	642	643	644	645	646	647	648	649	650	651	652	653	654
1928.....	661	662	663	664	665	666	667	668	669	670	671	672	673	674
1929.....	681	682	683	684	685	686	687	688	689	690	691	692	693	694
1930.....	696	697	698	699	700	701	702	703	704	705	706	707	708	709
1931.....	711	712	713	714	715	716	717	718	719	720	721	722	723	724
1932.....	726	727	728	729	730	731	732	733	734	735	736	737	738	739
1933.....	741	742	743	744	745	746	747	748	749	750	751	752	753	754
1934.....	756	757	758	759	760	761	762	763	764	765	766	767	768	769
1935.....	781	782	783	784	785	786	787	788	789	790	791	792	793	794
1936.....	801	802	803	804	805	806	807	808	809	810	811	812	813	814
1937.....	821	822	823	824	825	826	827	828	829	830	831	832	833	834
1938.....	851	852	853	854	855	856	857	858	859	860	861	862	863	864
1939.....	871	872	873	874	875	876	877	878	879	880	881	882	883	884
1940.....	891	892	893	894	895	896	897	898	899	900	901	902	903	904
1941.....	921	922	923	924	925	926	927	928	929	930	931	932	933	934
1942.....	951	952	953	954	955	956	957	958	959	960	961	962	963	964
1943.....	971	972	973	974	975	976	977	978	979	980	981	982	983	984
1944.....	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014
1945.....	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044
1946.....	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064

a Rating tables and index to Water-Supply Papers 35-39, contained in Water-Supply Paper 39. Monthly discharge for 1899 in 21st Annual Report, part 4.
b James River only.
c Gallatin River.
d Green and Gunnison Rivers and Colorado River above Gunnison River.
e Mojave River only.
f Kings and Kern Rivers and south Pacific slope basins.
g Rating tables and index to Water-Supply Papers 47-52 contained in Water-Supply Paper 52. Monthly discharge for 1900 in 22d Annual Report, part 4.
h Wissahickon and Schuylkill Rivers to James River.
i Scioto River.
j Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.
k Tributaries of Mississippi River from east.
m Lake Ontario and tributaries to St. Lawrence River proper.
n Hudson Bay only.
o New England rivers only.
p Hudson River to Delaware River, inclusive.
q Susquehanna River to Yadkin River.
r Platte and Kansas Rivers.
s The Great Basin in California, except Truckee and Carson River Basins.
t Below mouth of Gila River.
u Rogue, Umpqua, and Siletz Rivers only.

Reports have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which have been revised), as well as some records not contained in the annual series of water-supply papers. The following table gives the numbers and titles of these reports, arranged alphabetically, some by States and some by drainage basins.

Reports containing compilations of records of discharge by States and drainage basins

Report	Period	Water-Supply Paper
STATE		
Alabama, Water powers of, with an appendix on stream measurements in Mississippi.	1895-1903	107
California, Water resources of, part 1, Stream measurements in Sacramento River Basin.	1887-1912	298
California, Water resources of, part 2, Stream measurements in San Joaquin River Basin.	1878-1912	299
California, Water resources of, part 3, Stream measurements in the Great Basin and Pacific Coast river basins.	1891-1912	300
California, southern, Surface water supply of Pacific slope of	1890-1918	447
California, Surface water supply of Sacramento River Basin	1895-1927	597-E
California, Surface water supply of San Joaquin River Basin	1895-1927	636-D
California, southern, Surface water supply of Pacific slope basins in	1894-1927	636-E
California, Surface water supply of minor San Francisco Bay, northern Pacific, and Great basins in.	1895-1927	637-A
Colorado, Water resources of	1884-1900	74
Georgia, Water resources of	1895-1905	197
Massachusetts, Surface waters of	1845-1915	415
Nebraska, Surface water supply of	1894-1906	230
Oregon, Surface water supply of	1878-1910	370
Texas, Summary of records of surface waters of	1898-1937	850
Vermont, Surface waters of	1875-1916	424
Washington, Summary of hydrometric data in	1878-1919	492
Washington, Summary of records of surface waters of	1919-35	870
Wisconsin, northern, Water power of	1895-1905	156
Wyoming, Surface waters of, and their utilization	1894-1921	469
DRAINAGE BASIN		
Colorado River (Ariz., Colo., N. Mex., Utah, Wyo.) and its utilization	1868-1914	395
Colorado River, upper (Colo., Utah), and its utilization	1897-1927	617
Colorado River Basin (Ariz., Calif., Colo., Utah, Wyo.), Surface waters at base stations in.	1891-1938	918
Colorado River Basin (Ariz., Calif., Nev., N. Mex., Utah), Surface waters at stations on tributaries in lower.	1888-1938	1049
Columbia River Basin, upper (Mont., Idaho), Surface waters of	1898-1938	916
Great Salt Lake Basin, Water powers of	1889-1920	517
Green River (Colo., Utah, Wyo.) and its utilization	1894-1925	618
Kennebec River Basin (Maine), Water resources of	1890-1906	198
Milk River. See St. Mary and Milk Rivers		
Missouri and St. Mary River Basins (Mont.), Surface waters of	1881-1908	917
New-Kanawha River Basin (N. C., Va., W. Va.), Surface water supply of	1895-1920	536
Penobscot River Basin (Maine), Water resources of	1904-9	279
Potomac River Basin (D. C., Md., W. Va.)	1895-1905	192
Rio Grande Basin (Colo., N. Mex., Tex.), Water resources of	1888-1913	358
St. Mary and Milk Rivers (Mont., Canada), Water supply of	1898-1917	491
St. Mary River. See St. Mary and Milk Rivers; Missouri and St. Mary River Basin.		
Sevier Lake Basin (Utah), Utilization of surface water resources of	1889-1937	920
Susquehanna River Basin (Pa., Md.), Hydrography of	1890-1904	109

Records of discharge have been published also in State reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Alabama	1895-1915	Bull. 17, Water powers of Alabama	Geolcgical Survey of Alabama.
Arkansas	1857-1928	Stream-gaging Rept. 1	Arkansas Geological Survey.
Colorado	1881-1935	Water resources of Colorado, Appendix 2, Data on stream-gaging stations of Colorado.[1]	State Planning Commission, Water Conservation Board, State engineer.
Do	1881-1938	Water resources of Colorado, Appendix 3, vols. 1 and 2, Stream-flow data of Colorado.	Do.
Connecticut	1900-1927	Bull. 44, Water resources of Connecticut	State Geological and Natural History Survey.
Do	1912-33	5th biennial report[2]	State Water Commission.
Georgia	1895-1906	Bull. 16, Water powers of Georgia	Geological Survey of Georgia.
Do	1907-19	Bull. 38, Water powers of Georgia	Do.
Illinois	1908-11	Water resources of Illinois	Rivers and Lakes Commission.
Do	1900-1934	Stream-flow data of Illinois	Division of Waterways.
Indiana	1923-27	Pub. 72, Surface water supply of Indiana	Department of Conservation.
Do	1927-30	Pub. 112, Surface water supply of Indiana	Do.
Iowa	1873-1932	Stream-flow records of Iowa	State Planning Board.
Do	1873-1940	Water-Supply Bull. 1, Summaries of yearly and flood flow relating to Iowa streams.	Iowa Geological Survey.
Do	1941-42	Water-Supply Bull. 2, Surface water resources of Iowa.	Do.

1 Contains records of yearly discharge only.
2 Contains records of monthly discharge in second-feet per square mile.

State reports containing compilations of records of discharge--Continued

State	Period	Report	Issued by
Kansas.....	1895-1919	Surface waters of Kansas.....	Kansas Water Commission.
Do.....	1919-24	....do.....	Do.
Do.....	1924-28	Report of Division of Water Resources.....	State Board of Agriculture.
Do.....	1928-35	Stream-flow data of Kansas.....	Do.
Do.....	1935-39	....do.....	Do.
Kentucky.....	1910-20	Surface waters of Kentucky.....	Kentucky Geological Survey.
Louisiana....	1903-38	Geol. Bull. 16, Surface water supply of Louisiana.	Department of Conservation.
Maine.....	1887-1920	1st annual report[2].....	Maine Water Power Commission.
Maryland.....	1929-37	Flow data and draft storage curves for major streams in Maryland.	State Planning Commission and Water Resources Commission.
Do.....	1892-1943	Bull. 1, Summary of records of surface waters of Maryland and the Potomac River Basin.	Department of Geology, Mines, and Water Resources.
Minnesota....	1909-12	Water-resources investigation of Minnesota.	State Drainage Commission.
Missouri.....	1857-1926	Vol. 20, 2d series, Water resources of Missouri.	Missouri Bureau of Geology and Mines.
Do.....	1927-39	Vol. 26, 2d series, Surface waters of Missouri.	Missouri Geological Survey and Water Resources.
Montana.....	1889-1911	5th biennial report.....	Office of the State Engineer.
Do.....	1881-1938	Special Rept. 10, vols. 1-4, Water resources of Montana.	Montana Agricultural Experiment Station.
Nebraska.....	1894-1914	1st hydrographic report.....	Bureau of Water Power, Irrigation, and Drainage.
Do.....	1914-28	2d hydrographic report.....	Do.
New Hampshire	1889-1922	Annual and statistical report, vol. 12[2]...	Public Service Commission.
New Jersey...	1892-1928	Bull. 33, Surface water supply of New Jersey.	Department of Conservation and Development.
Do.....	1928-34	Special Rept. 5, Surface water supply of New Jersey.	State Water Policy Commission.
Do.....	1934-40	Special Rept. 9, Surface water supply of New Jersey.	Do.
New Mexico...	1888-1925	Surface water supply of New Mexico.....	Office of the State Engineer.
North Carolina.	1889-1923	Bull. 34, Discharge records of North Carolina streams.[3]	Department of Conservation and Development.
Do.....	1889-1936	Bull. 39, Discharge records of North Carolina streams.[4]	Do.
Do.....	1866-1945	Hydrologic Data on the Neuse River Basin	Do.
Do.....	1820-1945	Hydrologic Data on the Cape Fear River Basin.	Do.
North Dakota.	1919-21	Report to Governor of North Dakota on flood control.	State chief engineer.
Do.....	1882-1938	Surface water in North Dakota.....	State Planning Board.
Do.....	1882-1944	Supplement B, 4th biennial report.....	State Water Conservation Commission.
Ohio.....	1898-1921	Bull. 73, Ohio stream flow, Part 1.....	Engineering Experiment Station, Ohio State University.
Do.....	1898-1944	Bull. 127, Ohio stream flow, Part 2.....	
Do.....	1902-39	Bull. 200, Compilation of stream-flow records of Ohio.	Department of Agriculture, Division of Conservation and Natural Resources.
Do.....	1898-1939	Bull. 111, Ohio stream-drainage areas and flow-duration tables.	Engineering Experiment Station, Ohio State University.
Oregon.....	1878-1914	Bull. 4, Water resources of the State of Oregon.	Office of the State Engineer.
Do.....	1914-24	Bull. 7, Water resources of the State of Oregon.	Do.
Do.....	1924-30	Bull. 8, Water resources of the State of Oregon.	Do.
Do.....	1930-36	Bull. 9, Water resources of the State of Oregon.	Do.
Pennsylvania.	1890-1911	Report of the Water Supply Commission of Pennsylvania.	Water Supply Commission of Pennsylvania.
Do.....	1928-32	Stream-flow records of Pennsylvania.....	Department of Forests and Waters.
Rhode Island.	1929-41	7th annual report.....	Department of Public Works.
Tennessee....	1874-1924	Bull. 34, Water resources of Tennessee....	Department of Education.
Do.....	1920-30	Bull. 40, Surface waters of Tennessee[3]....	Do.
Utah.....	1889-1905	5th biennial report.....	Office of the State Engineer.
Do.....	1906-10	7th biennial report.....	Do.
Do.....	1911-16	10th biennial report.....	Do.
Virginia.....	1895-1927	Bull. 31, Water resources of Virginia.....	Virginia Geological Survey.
Do.....	1927-42	Bull. 4, Surface water supply of Virginia (Potomac, Rappahannock, and York River Basins).	Virginia Conservation Commission.
Do.....	1927-42	Bull. 5, Surface water supply of Virginia (James River Basin).	Do.
Do.....	1927-42	Bull. 6, Surface water supply of Virginia (Roanoke and Chowan River Basins).	Do.
Do.....	1927-42	Bull. 7, Surface water supply of Virginia (New, Tennessee, and Big Sandy River Basins).	Do.
Washington...	1878-1933	Bull. 5, Monthly and yearly summaries of hydrometric data.	Department of Conservation and Development.
Wisconsin....	1888-1914	1st report of Railroad Commission of Wisconsin to Legislature on water powers.	Railroad Commission of Wisconsin.
Do.....	1914-23	2d report of Railroad Commission of Wisconsin to Legislature on water powers.	Do.

2 Contains records of monthly discharge in second-feet per square mile.
3 Contains records of weekly discharge.
4 Contains records of maximum and minimum daily, weekly, and monthly discharge and yearly mean discharge.

Note.- In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: California, Colorado, Connecticut, Idaho, Indiana, Kansas, Maine, Missouri, Montana, Nebraska, Nevada, New Mexico, New York (also New York City Board of Water Supply and city of Rochester), North Dakota, Oregon, Pennsylvania, Rhode Island, Washington, and Wyoming.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier noteworthy floods. The following list gives the numbers and titles of these reports:

Water-Supply Paper	Title
88	The Passaic flood of 1902.
92	The Passaic flood of 1903.
96	Destructive floods in the United States in 1903.
147	Destructive floods in the United States in 1904.
162	Destructive floods in the United States in 1905.
334	The Ohio Valley flood of March-April 1913.
426	Southern California floods of January 1916.
487	The Arkansas River flood of June 3-5, 1921.
488	The floods in central Texas in September 1921.
520-G	Some floods in the Rocky Mountain region.
636-C	The New England flood of November 1927.
771	Floods in the United States, magnitude and frequency.
773-E	The New York State flood of July 1935.
796-B	Flood on Republican and Kansas Rivers, May and June 1935.
796-C	Flood in La Canada Valley, Calif., January 1, 1934.
796-G	Major Texas floods of 1935.
798	The floods of March 1936, part 1, New England rivers.
799	The floods of March 1936, part 2, Hudson River to Susquehanna River region.
800	The floods of March 1936, part 3, Potomac, James, and upper Ohio Rivers.
816	Major Texas floods of 1936.
836-A	Stages and flood discharges of the Connecticut River at Hartford, Conn.
838	Floods of Ohio and Mississippi Rivers, January-February 1937.
842	Floods in Canadian and Pecos River Basins of New Mexico, May and June 1937.
843	Floods of December 1937 in northern California.
844	Floods of March 1938 in southern California.
847	Maximum discharges at stream-measurement stations through September 1938.
867	Hurricane floods of September 1938.
869	Flood of August 1935 in Muskingum River Basin, Ohio
914	Texas floods of 1938 and 1939.
966	Minor floods of 1938 in North Atlantic States.
967-A	Floods of September 1939 in Colorado River Basin below Boulder Dam.
967-B	Flood of July 5, 1939, in eastern Kentucky.
967-C	Flood of August 21, 1939, in town of Baldwin, Maine.
994	Cloudburst floods in Utah, 1850 to 1938.
997	Floods in Colorado.
1046	Texas floods of 1940.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table contains a list of gaging stations for the area covered by this report at which records of daily discharge were collected during the water year October 1945 to September 1946 by agencies other than the Geological Survey. The records for these stations are not contained in the publications of the Geological Survey. Records on many canals, not here listed, have been collected by the Oregon State engineer and the Bureau of Reclamation in connection with the water supply for irrigation projects.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by
Big Butte Creek, North Fork..	SW¼ sec. 2, T. 35 S., R. 2 E., 1 mile north of Butte Falls, Oreg.	1928-46	Oregon State engineer.
Big Butte Springs.....	Sec. 17, T. 35 S., R. 3 E., 6 miles east of Butte Falls, Oreg.	1930-46	Do.
Big Marsh Creek.....	NE¼ sec. 20, T. 24 S., R. 7 E., at Hoey Ranch, near Crescent, Oreg.	1924, 1928-46*	Do.
Butter Creek.....	SE¼ sec. 22, T. 2 N., R. 27 E., at Foley Bridge, 15 miles southwest of Hermiston, Oreg.	1933-46	Do.
Charlton Creek.....	Sec. 1, T. 21 S., R. 7 E., near Lapine, Oreg.	1934, 1938-46	Do.
Cultus Creek.....	Sec. 19, T. 20 S., R. 8 E., above Crane Prairie Reservoir, near Lapine, Oreg.	1938-46*	Do.

* Records for some earlier years contained in water-supply papers published by the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey--Continued

Stream	Location	Period	Collected by
Deer Creek	Sec. 36, T. 20 S., R. 7 E., near Lapine, Oreg.	1938-46*	Oregon State engineer.
Deschutes River	NW¼NW¼ sec. 28, T. 21 S., R. 8 E., below Sheep Springs, near Lapine, Oreg.	1938-46	Do.
Do	N½ sec. 7, T. 20 S., R. 11 E., ½ mile below Little Deschutes River, at Peters Ranch, near Camp Abbott, Oreg.	1945-46	Do.
Do	On line between sec. 31, T. 19 S., R. 11 E. and sec. 6, T. 20 S., R. 11 E., ½ mile below Spring River, at Camp Abbott, Oreg.	1945-46	Do.
Do	SW¼ sec. 9, T. 19 S., R. 11 E., below Benham Falls, near Bend, Oreg.	1943-46	Do.
Do	SW¼ sec. 27, T. 18 S., R. 11 E., above Lava Island, near Bend, Oreg.	1943-46*	Do.
Do	SW¼ sec. 4, T. 19 S., R. 11 E., ½ mile above Dillon Falls, at Ryan Ranch, near Bend, Oreg.	1943-46	Do.
Do	Near center sec. 7, T. 18 S., R. 12 E., ¼ mile above head of mill pond, near Bend, Oreg.	1943-46	Do.
Do	NE¼ sec. 14, T. 15 S., R. 12 E., 1,500 feet dam above dam at Cline Falls, Oreg.	1928-46*	Do.
Evans Creek	Sec. 20, T. 34 S., R. 2 W., 3 miles above West Fork, 12 miles northeast of Wimer, Oreg.	1941-46	Do.
Do	NE¼ sec. 34, T. 34 S., R. 3 W., at Bybee Springs, near Wimer, Oreg.	1940-46*	Do.
Fish Lake Dam, tunnel at	SW¼ sec. 3, T. 37 S., R. 4 E., 16 miles east of Lake Creek, Oreg.	1929-46	Do.
Grave Creek	NW¼SW¼ sec. 7, T. 34 S., R. 5 W., 1½ miles west of Placer, Oreg.	1929-30, 1932-46	Do.
Jumpoff Joe Creek	SW¼ sec. 32, T. 34 S., R. 5 W., 7 miles northwest of Merlin, Oreg.	1929-46*	Do.
Little Butte Creek	SE¼ sec. 19, T. 36 S., R. 2 E., at Lake Creek, Oreg.	1922-24, 1927-46	Do.
Little Butte Creek, North Fork.	Sec. 21, T. 36 S., R. 2 E., above Rogue River Valley Canal intake, near Lake Creek, Oreg.	1931-45*	Do.
Little Butte Creek, South Fork.	NW¼ sec. 21, T. 37 S., R. 4 E., 1 mile south of Big Elk ranger station, near Lake Creek, Oreg.	1931-46*	Do.
Little Deschutes River	SE¼ sec. 30, T. 20 S., R. 11 E., 4 miles above mouth, at Johnson Ranch, near Bend, Oreg.	1943-46*	Do.
Little Walla Walla River	George St., in Milton, Oreg.	1916, 1932-46	Do.
Ochoco Creek	NE¼ sec. 6, T. 15 S., R. 17 E., below Ochoco Reservoir, 6 miles east of Prineville, Oreg.	1919-46	Do.
Ochoco Reservoir	SW¼ sec. 5, T. 15 S., R. 17 E., 6 miles east of Prineville, Oreg.	1918-46	Do.
Ochoco Springs	NE¼ sec. 6, T. 15 S., R. 17 E., 6 miles east of Prineville, Oreg.	1920-46	Do.
Rancheria Creek	SE¼ sec. 17, T. 35 S., R. 3 E., 10 miles northeast of Lake Creek, Oreg.	1935-46	Do.

* Records for some earlier years contained in water-supply papers published by the Geological Survey.

Note.- Records through 1936 collected by the Oregon State engineer (some of them in cooperation with the Bureau of Reclamation of the U. S. Department of Interior) are contained in the bulletins published by that officer. (See p. 10 "State reports containing compilation of records of discharge.") The other records listed in this table have not been published.

COOPERATION

In Oregon the work was done under cooperative agreements with the State of Oregon, Charles E. Stricklin, State engineer; Umatilla County Court; and the cities of Corvallis, McMinnville, and Portland. In Washington the work was done under cooperative agreements with the State Department of Conservation and Development, Art Garton, director, and Charles J. Bartholet, consultant engineer for the department; Columbia County; and Walla Walla County.

Financial assistance was furnished by the Corps of Engineers, U. S. Army, for the operation of 36 gaging stations in Oregon and 15 in Washington.

Financial assistance was also furnished by the Bureau of Reclamation of the United States Department of Interior.

Assistance in collecting records was rendered by the following organizations:

Oregon: Counties of Crook, Deschutes, Jackson, Jefferson, Josephine, Klamath, and Umatilla; city of Grants Pass; The California Oregon Power Co., California Public Utilities, Pacific Power & Light Co., and Portland General Electric Co.

Washington: Northwestern Electric Co. and Pacific Power & Light Co.

DIVISION OF WORK

The stream-gaging work was conducted by the water resources branch of the Geological Survey--Glenn L. Parker, chief hydraulic engineer (until Feb. 12, 1946) succeeded by Carl G. Paulsen and Joseph V. B. Wells, chief of the division of surface water since Sept. 17, 1946. The data for the gaging stations were collected and prepared for publication under supervision of district engineers as follows: In Oregon, G. H. Canfield, the work being done in collaboration with Charles E. Stricklin, State engineer; in Washington, F. M. Veatch.

The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, hydraulic engineer in charge, and F. J. Flynn, associate engineer, section of reports.

COLUMBIA RIVER MAIN STEM

Columbia River near The Dalles, Oreg.

Location.- Water-stage recorder, lat. 45°39', long. 120°58', in NE¼ sec. 20, T. 2 N., R. 15 E., just upstream from Celilo Falls, 3 miles downstream from Deschutes River, and 11 miles east of The Dalles. Datum of gage is at mean sea level, datum of 1929.
Drainage area.- 237,000 square miles.
Records available.- June 1878 to September 1946. Prior to October 1931 records based on staff gage at The Dalles, supplemented for a few short periods by gage-height records at Umatilla and Cascade Locks. Maximum stages for each year in period 1858 to 1877 from readings of gage at Lower Cascades Landing.
Average discharge.- 68 years, 193,900 second-feet.
Extremes.- Maximum discharge during year, 583,000 second-feet May 30 (elevation, 144.00 feet); minimum, 71,200 second-feet Oct. 17 (elevation, 128.75 feet).
1858-1946: Maximum discharge, 1,170,000 second-feet June 6, 1894 (elevation, 106.5 feet on gage at The Dalles, 160.1 feet at present site); minimum observed, 35,000 second-feet Jan. 12, 1937 (elevation, 126.0 feet).
Remarks.- Records excellent. Storage and diversions for irrigation are only a small part of total runoff. Some regulation by Franklin D. Roosevelt Lake above Grand Coulee Dam during year, the total increase in contents during the year ending Sept. 30, 1946, being 8,200 acre-feet.
Cooperation.- Recorder inspected and gages read by Corps of Engineers, War Department.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

129	76,500	133	181,000	138	357,000
130	99,000	134	213,000	140	431,000
131	124,000	135	247,000	142	507,000
132	151,000	136	283,000		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83,700	87,200	104,000	169,000	89,900	124,000	191,000	356,000	575,000	394,000	209,000	128,000
2	83,000	86,500	99,700	155,000	87,200	128,000	187,000	351,000	568,000	387,000	207,000	128,000
3	82,300	85,000	93,400	145,000	87,000	123,000	183,000	347,000	564,000	380,000	205,000	127,000
4	81,900	85,200	91,300	135,000	87,600	123,000	181,000	341,000	562,000	368,000	202,000	125,000
5	79,500	86,700	89,000	130,000	87,600	127,000	177,000	343,000	568,000	359,000	199,000	118,000
6	76,900	87,900	88,800	124,000	86,100	123,000	175,000	356,000	572,000	348,000	195,000	116,000
7	75,200	92,700	88,100	126,000	87,600	124,000	179,000	386,000	570,000	344,000	192,000	114,000
8	74,800	93,200	87,200	125,000	90,800	125,000	182,000	411,000	566,000	338,000	185,000	112,000
9	73,800	89,200	87,400	122,000	89,500	123,000	181,000	424,000	557,000	329,000	180,000	119,000
10	73,600	89,500	89,200	119,000	89,000	122,000	185,000	442,000	544,000	323,000	177,000	120,000
11	74,000	87,400	88,600	115,000	86,500	125,000	186,000	456,000	532,000	321,000	172,000	112,000
12	75,700	84,800	87,000	110,000	86,100	128,000	185,000	457,000	519,000	321,000	164,000	114,000
13	75,000	84,100	85,600	107,000	85,900	132,000	185,000	459,000	505,000	314,000	157,000	118,000
14	73,600	83,200	83,200	105,000	84,500	143,000	192,000	463,000	494,000	304,000	152,000	119,000
15	72,700	85,900	81,500	100,000	83,900	153,000	202,000	469,000	485,000	298,000	148,000	119,000
16	72,100	87,200	80,800	98,300	81,500	153,000	214,000	467,000	485,000	292,000	147,000	116,000
17	71,900	85,600	80,400	96,400	81,200	147,000	227,000	461,000	483,000	286,000	144,000	115,000
18	75,200	84,100	78,400	94,800	81,500	141,000	241,000	456,000	474,000	281,000	141,000	113,000
19	75,400	85,900	75,900	92,000	79,500	135,000	260,000	461,000	471,000	279,000	140,000	116,000
20	74,400	86,500	75,900	90,200	80,800	133,000	281,000	477,000	456,000	276,000	139,000	114,000
21	74,800	86,500	76,100	86,300	82,100	131,000	310,000	493,000	448,000	273,000	138,000	116,000
22	73,600	86,700	74,600	85,600	84,500	133,000	320,000	500,000	446,000	268,000	137,000	116,000
23	73,100	85,000	76,100	91,500	86,100	144,000	308,000	496,000	445,000	259,000	134,000	114,000
24	73,400	85,200	76,700	94,300	87,600	152,000	294,000	498,000	440,000	248,000	131,000	112,000
25	74,200	82,800	77,100	96,600	90,400	155,000	285,000	504,000	434,000	241,000	128,000	111,000
26	74,000	81,000	78,200	99,200	96,600	153,000	287,000	509,000	431,000	238,000	127,000	111,000
27	72,900	81,200	78,600	96,800	104,000	148,000	306,000	516,000	428,000	235,000	124,000	111,000
28	74,200	83,400	86,500	94,100	111,000	147,000	328,000	535,000	421,000	232,000	125,000	107,000
29	78,800	91,500	111,000	92,200	-	158,000	334,000	567,000	413,000	228,000	127,000	103,000
30	82,300	102,000	137,000	92,900	-	173,000	350,000	581,000	405,000	220,000	127,000	99,500
31	85,000	-	177,000	91,800	-	186,000	-	578,000	-	215,000	129,000	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	2,361,000	85,000	71,900	76,160	0.321	0.37	4,683,000
November	2,603,100	102,000	81,000	86,770	.366	.41	5,163,000
December	2,784,300	177,000	74,600	89,820	.379	.44	5,523,000
Calendar year 1945	55,368,900	505,000	70,000	151,700	.640	8.70	109,800,000
January	3,380,000	169,000	85,600	109,000	.460	.53	6,704,000
February	2,456,000	111,000	79,500	87,710	.370	.39	4,871,000
March	4,312,000	186,000	122,000	139,100	.587	.68	8,553,000
April	7,116,000	350,000	175,000	237,200	1.00	1.12	14,114,000
May	14,160,000	581,000	341,000	456,800	1.93	2.22	28,086,000
June	14,861,000	575,000	405,000	495,400	2.09	2.33	29,476,000
July	9,199,000	394,000	215,000	296,700	1.25	1.44	18,246,000
August	4,882,000	209,000	124,000	157,500	.665	.77	9,683,000
September	3,481,500	128,000	99,500	115,400	.487	.54	6,866,000
Water year 1945-46	71,575,900	581,000	71,900	196,100	.827	11.23	142,000,000

WALLA WALLA RIVER BASIN

South Fork Walla Walla River near Milton, Oreg.

Location.- Water-stage recorder, lat. 45°50', long. 118°10', in NE¼ sec. 15, T. 4 N., R. 37 E., 1 mile upstream from Pacific Power & Light Co.'s penstock intake and 13 miles southeast of Milton. Altitude of gage, about 2,050 feet (from river-profile map).

Drainage area.- 63 square miles.

Records available.- February to October 1903 (gage heights only), August 1906 to November 1917 (incomplete), May 1931 to September 1946.

Average discharge.- 22 years (1908-15, 1931-46), 164 second-feet.

Extremes.- Maximum discharge during year, 1,560 second-feet Dec. 28 (gage height, 3.37 feet), from rating curve extended above 360 second-feet; minimum, 88 second-feet Oct. 14-16.

1906-17, 1931-46: Maximum discharge recorded, that of Dec. 28, 1945; minimum, 72 second-feet Feb. 14, 1932.

Maximum stage known, about 6 feet Mar. 31, 1931, present site and datum.

Remarks.- Records good except those for period of shifting control and those above 400 second-feet, which are fair. No diversion or regulation above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Apr. 25 to May 28)

Oct. 1 to Dec. 2e				Dec. 29 to May 28				May 29 to Sept. 30			
1.0	87	1.8	280	1.4	139	2.1	370	1.3	103	1.8	219
1.1	100	2.0	365	1.5	160	2.3	495	1.4	120	2.0	290
1.2	116	2.2	480	1.7	214	2.6	720	1.5	140	2.2	385
1.4	157	2.5	700	1.9	280			1.6	163		
1.6	212										

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91	97	182	256	141	224	194	304	312	154	106	103
2	91	139	160	233	139	205	168	325	308	152	108	103
3	91	126	150	217	137	197	180	394	304	147	108	103
4	91	111	153	217	133	182	182	462	294	142	106	106
5	91	120	148	230	133	178	191	456	299	138	106	110
6	91	110	155	214	137	202	197	424	317	138	106	106
7	91	106	182	205	133	197	202	412	282	134	106	108
8	92	105	174	188	130	194	217	430	270	140	106	105
9	92	105	157	172	130	217	202	418	254	176	106	103
10	91	105	150	165	130	246	191	400	241	147	105	103
11	90	105	146	156	128	246	208	365	234	138	105	103
12	90	108	137	147	124	270	273	360	228	132	105	103
13	90	108	131	145	124	277	306	340	228	130	105	103
14	88	116	127	143	124	240	355	316	238	128	105	103
15	88	148	126	141	126	220	360	308	222	128	105	108
16	88	150	124	139	131	202	382	308	207	124	103	113
17	90	137	124	137	135	197	418	330	196	122	102	108
18	90	133	120	141	137	194	476	340	190	120	102	105
19	94	135	118	147	141	194	443	335	185	118	102	103
20	96	124	a120	147	160	194	388	330	185	118	102	103
21	92	118	a120	147	178	191	312	325	187	117	102	105
22	95	113	126	165	180	208	273	316	187	115	102	105
23	94	111	144	188	182	214	284	304	187	113	102	103
24	94	111	160	200	165	211	350	308	174	112	100	102
25	95	120	170	197	194	200	488	316	171	112	106	103
26	94	187	172	175	a200	205	537	355	163	112	103	103
27	94	487	188	162	263	258	430	476	156	112	102	102
28	94	352	769	156	270	249	400	537	171	110	102	102
29	94	338	760	150	-	243	388	433	171	110	103	102
30	95	232	412	143	-	227	330	375	158	110	106	102
31	96	-	304	141	-	208	-	335	-	110	103	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	2,853	96	88	92.0	1.46	1.68	5,660
November	4,555	487	97	152	2.41	2.69	9,030
December	6,207	769	118	200	3.17	3.66	12,310
Calendar year 1945	64,526	769	87	177	2.81	38.08	128,000
January	5,344	256	137	172	2.73	3.15	10,600
February	4,323	270	124	154	2.44	2.55	8,570
March	6,688	277	178	216	3.43	3.95	13,270
April	9,347	537	180	312	4.95	5.52	18,540
May	11,437	537	304	369	5.86	6.75	22,680
June	6,719	317	156	224	3.56	3.97	13,330
July	3,959	176	110	128	2.03	2.34	7,850
August	3,234	108	100	104	1.65	1.91	6,410
September	3,131	113	102	104	1.65	1.85	6,210
Water year 1945-46	67,797	769	88	186	2.95	40.02	134,500

a No gage-height record; discharge computed on basis of records for North Fork Walla Walla River near Milton.

Walla Walla River below Freewater, Oreg.

Location.- Water-stage recorder, lat. 45°59', long. 118°23', in NW¼NE¼ sec. 25, T. 6 N., R. 35 E., at McCoy Bridge, 2 miles upstream from Birch Creek and Oregon-Washington State line, and 2.5 miles north of Freewater. Datum of gage is 845.28 feet above mean sea level, datum of 1929.

Records available.- April 1941 to September 1946.

Extremes.- Maximum discharge during year, 1,030 second-feet Dec. 29 (gage height, 6.20 feet); no flow at times.
1941-46: Maximum discharge, 1,340 second-feet June 26, 1942, from rating curve extended above 500 second-feet; maximum gage height, that of Dec. 29, 1945; no flow at times each year.

Remarks.- Records poor. Many diversions above station for irrigation. Little Walla Walla River, a natural distributary, diverts 3 miles above station. No regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 10-16)

Oct. 1 to Dec. 28						Dec. 28 to Sept. 30					
3.0	0.3	3.5	7.0	4.2	79	2.9	3	3.4	92	4.7	418
3.1	.9	3.6	11	4.4	116	3.0	11	3.6	144	5.2	576
3.2	1.8	3.7	16	4.7	179	3.1	25	3.8	189	5.8	820
3.3	3.0	3.8	23	5.0	251	3.2	43	4.0	234		
3.4	4.7	4.0	46	5.3	332	3.3	64	4.3	306		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	177	351	153	259	220	229	257	4		
2		12	155	324	158	229	207	209	229	3		
3		21	130	316	144	218	196	229	209			
4		15	118	306	124	198	187	284	169			
5		17	99	351	95	189	185	337	134			
6		16	86	337	97	211	180	298	196			
7		15	108	329	103	216	153	271	146			
8		14	101	309	92	207	162	296	114			
9		14	99	276	89	222	156	281	100			
10		16	93	262	89	255	136	274	75	a2		
11		16	84	246	86	259	142	241	51			
12		17	79	218	84	301	193	220	36			
13		19	72	213	75	351	222	198	27			
14		20	85	207	75	304	298	176	27			
15		37	64	191	81	276	316	144	25			
16		54	a63	185	92	282	356	111	22			
17		56	a61	182	103	250	370	122	18	1.5		
18		52	h62	171	103	250	422	142	12			
19		60	a60	178	106	252	455	146	11			
20		56	a65	178	116	250	440	156	9			
21		49	a65	167	139	243	365	158	7	a1		
22		56	a75	196	149	248	294	160	6			
23		40	142	207	151	250	264	162	6			
24		31	159	252	193	250	281	160	5			
25		18	186	279	294	256	370	167	5			
26		30	168	239	234	229	490	202	5	0		
27		285	177	216	262	279	399	416	3	0		
28		272	575	200	316	275	343	569	4	0		
29		290	811	193	-	271	332	532	4	0		
30		219	587	174	-	252	279	410	5	0		
31		-	428	167	-	243	-	319	-	0		

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0	0
November	1,817	290	0	60.6	3,600
December	5,194	811	60	168	10,300
Calendar year 1945	37,753	811	0	103	74,880
January	7,420	351	167	239	14,720
February	3,803	316	75	136	7,540
March	7,736	351	189	250	15,340
April	8,413	490	136	280	16,690
May	7,619	569	111	246	15,110
June	1,917	257	3	63.9	3,800
July	11.5	4	0	.37	23
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1945-46	43,930.5	811	0	120	87,120

a No gage-height record; discharge interpolated, or computed on basis of records for South Fork Walla Walla River near Milton and North Fork Walla Walla River near Milton.
h Computed from staff-gage reading.

North Fork Walla Walla River near Milton, Oreg.

Location.- Water-stage recorder, lat. 45°54', long. 118°18', in NW¼NE¼ sec. 22, T. 5 N., R. 36 E., at bridge, half a mile upstream from confluence with South Fork Walla Walla River and 4.5 miles southeast of Milton. Datum of gage is 1,405.69 feet above mean sea level, datum of 1929.

Drainage area.- 47 square miles.

Records available.- October 1940 to September 1946 in reports of Geological Survey; December 1929 to September 1936 in reports of State engineer; October 1936 to September 1940 (unpublished) in files of State engineer.

Average discharge.- 16 years, 43.4 second-feet.

Extremes.- Maximum discharge during year, 724 second-feet Dec. 29 (gage height, 5.17 feet), from rating curve extended above 120 second-feet; minimum, 1.6 second-feet Aug. 21-24.

1929-46: Maximum daily discharge observed, 970 second-feet Feb. 28, 1940, probably exceeded by flood of Mar. 31, 1931, when gage was washed out; minimum, 1 second-foot Aug. 8-19, 1936, Aug. 7-11, 1940.

Remarks.- Records fair except those for Oct. 1-31, Dec. 30 to Jan. 14, Feb. 25 to Mar. 12, Apr. 26 to May 30, and those above 300 second-feet, which are poor. Diversions above station for irrigation of about 220 acres; no regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge in second-feet)
(Shifting-control method used Oct. 7 to Dec. 27, Dec. 29 to Jan. 2, Apr. 20 to June 2)

Oct. 1 to Dec. 28

2.8	9.8	3.2	55
2.9	18	3.3	73
3.0	28	3.5	119
3.1	40	3.7	171

Dec. 29 to Sept. 30

2.7	3.9	3.2	37	4.0	235
2.8	7.3	3.3	51	4.3	345
2.9	12	3.4	69	4.6	475
3.0	18	3.6	115		
3.1	26	3.8	170		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	9.8	62	105	41	123	87	105	131	19	4.2	5.6
2	5.7	28	48	87	44	103	78	103	118	17	3.2	7.0
3	5.7	36	38	84	43	96	69	115	113	16	3.2	7.3
4	6.3	24	39	82	38	84	67	159	96	14	2.9	7.3
5	6.3	21	35	103	35	80	71	182	96	13	2.9	9.2
6	6.3	19	35	108	36	108	78	188	115	12	2.9	9.6
7	6.3	16	44	98	37	105	80	167	89	12	3.2	11
8	6.3	16	44	82	35	98	89	173	80	12	3.9	10
9	6.3	15	40	69	35	103	89	167	69	24	3.4	9.6
10	6.3	16	35	62	33	110	76	162	60	18	3.2	9.2
11	6.3	16	32	55	30	115	78	137	51	15	2.9	7.8
12	6.3	16	28	48	28	134	108	118	47	13	2.9	7.3
13	6.3	17	26	48	26	162	126	108	44	12	2.6	7.0
14	5.7	18	23	43	27	131	145	98	45	12	2.6	7.0
15	5.7	29	20	43	33	110	156	84	41	12	2.6	8.7
16	5.7	42	20	43	37	103	156	76	37	12	3.4	8.7
17	6.3	40	19	43	43	105	170	73	34	11	3.4	8.2
18	6.3	38	16	44	43	96	200	98	29	9.6	3.6	8.2
19	6.3	42	15	47	43	96	210	108	27	8.7	3.9	7.8
20	8.6	38	18	44	44	96	197	103	24	7.3	3.6	7.3
21	8.6	30	19	43	53	93	156	93	22	6.6	2.4	7.3
22	8.1	26	26	60	58	98	118	91	23	4.6	1.9	7.3
23	8.6	24	69	71	60	105	98	87	24	4.6	1.6	7.3
24	8.6	23	88	91	91	103	98	84	24	5.6	1.9	7.0
25	8.6	28	88	103	153	96	148	91	22	5.3	2.6	6.6
26	8.6	38	86	80	105	93	224	113	21	5.3	3.2	6.6
27	8.6	107	88	67	134	120	194	194	20	5.6	3.2	6.6
28	8.1	112	177	58	167	120	162	361	20	5.6	2.9	6.6
29	8.1	112	480	53	-	115	145	321	26	5.3	2.9	6.3
30	8.1	86	221	45	-	103	120	204	22	5.6	3.9	6.3
31	9.2	-	145	41	-	93	-	156	-	5.3	3.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	217.9	9.2	5.7	7.03	432
November	1,082.8	112	9.8	36.1	2,150
December	2,124	480	15	68.5	4,210
Calendar year 1945	22,145.8	480	2.2	60.7	43,930
January	2,050	108	41	66.1	4,070
February	1,552	167	26	55.4	3,080
March	3,297	162	80	106	6,540
April	3,793	224	67	126	7,520
May	4,319	361	73	139	8,570
June	1,570	131	20	52.3	3,110
July	329.0	24	4.6	10.6	653
August	94.9	4.2	1.6	3.06	188
September	231.7	11	5.6	7.72	460
Water year 1945-46	20,661.3	480	1.6	56.6	40,980

Mill Creek near Walla Walla, Wash.

Location.- Water-stage recorder, lat. 46°00', long. 118°07', in SE¼SE¼ sec. 12, T. 6 N., R. 37 E., 4 miles downstream from city of Walla Walla diversion dam, 4½ miles upstream from Blue Creek, and 11½ miles southeast of Walla Walla. Datum of gage is 2,000 feet above mean sea level, unadjusted.

Drainage area.- 54 square miles.

Records available.- August 1913 to September 1917, April to September 1938, October 1939 to September 1946.

Average discharge.- 11 years (1913-17, 1939-46), 87.5 second-feet.

Extremes.- Maximum discharge during year, 1,880 second-feet Dec. 28 (gage height, 17.85 feet), from rating curve extended above 920 second-feet; minimum, 28 second-feet Oct. 3-5, 12-16.
1913-17, 1938, 1939-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 16 second-feet Oct. 11-15, 1939.

Remarks.- Records good except those for periods of shifting control, which are fair. City of Walla Walla diverts about 22 second-feet 4 miles above station for municipal use.

Rating tables, water year 1945-46, except periods of shifting control
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28		Dec. 28 to Sept. 30			
14.2	31	13.5	35	15.5	590
14.5	81	13.8	89	16.0	815
14.8	148	14.1	150	16.5	1,070
15.1	233	14.5	247	17.0	1,370
15.5	387	15.0	404	17.5	1,670
16.0	647				

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	43	124	223	115	269	146	123	146	61	47	33
2	30	79	98	200	117	234	125	127	123	61	47	33
3	28	62	83	184	113	210	117	164	115	61	42	35
4	28	51	86	200	107	190	115	215	107	61	38	35
5	28	66	81	337	101	a185	117	215	110	61	38	37
6	29	55	87	275	105	a190	123	195	140	59	37	35
7	29	51	109	225	103	a188	121	177	115	57	37	37
8	29	45	102	168	95	a185	133	184	107	63	37	35
9	29	43	89	142	95	190	121	174	101	68	35	33
10	29	48	79	129	93	212	115	157	95	54	35	33
11	29	51	70	109	89	225	138	131	95	52	33	33
12	28	60	62	103	87	308	215	123	89	50	32	33
13	28	62	53	99	85	331	228	119	85	48	32	33
14	28	70	48	95	83	253	239	115	85	50	32	35
15	28	111	43	93	85	215	242	111	80	56	33	37
16	28	115	42	91	99	179	250	107	74	54	32	35
17	29	104	40	91	111	157	255	109	70	54	30	32
18	29	98	39	99	111	146	293	113	66	54	30	30
19	36	106	38	105	115	146	302	113	65	52	32	30
20	38	92	36	105	127	144	267	111	63	52	32	30
21	31	77	38	105	140	137	220	111	63	50	32	30
22	39	68	40	284	142	161	170	113	61	50	29	32
23	35	64	73	242	150	168	154	107	63	50	29	30
24	34	64	98	281	241	172	188	107	61	48	29	30
25	34	92	109	281	334	152	266	113	63	48	33	30
26	33	129	109	215	253	179	280	121	59	48	33	30
27	33	415	138	165	350	255	223	205	57	48	32	30
28	33	320	1,200	140	358	242	195	275	63	47	30	52
29	33	250	638	133	-	231	200	284	70	47	32	32
30	36	171	377	117	-	215	154	231	63	47	35	32
31	42	-	281	111	-	188	-	190	-	45	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	973	42	28	31.4	1,930
November	3,062	415	43	102	6,070
December	4,510	1,200	36	145	8,950
Calendar year 1945	35,943	1,200	26	98.5	71,280
January	5,147	337	91	168	10,210
February	4,004	358	83	143	7,940
March	6,257	331	137	202	12,410
April	5,712	302	115	190	11,330
May	4,740	284	107	153	9,400
June	2,554	146	57	85.1	5,070
July	1,656	68	45	53.4	3,280
August	1,058	47	29	34.1	2,100
September	982	57	30	32.7	1,950
Water year 1945-46	40,655	1,200	28	111	80,640

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Note.- Shifting-control method used Oct. 1 to Dec. 28, Sept. 15-30.

Mill Creek at Walla Walla, Wash.

Location.- Water-stage recorder, lat. 46°04'40", long. 118°17'00", in NE¼ sec. 22, T. 7 N., R. 36 E., at bridge, 0.9 mile downstream from diversion dam and 1.0 mile east of Walla Walla.

Drainage area.- 90 square miles.

Records available.- April 1941 to September 1946.

Extremes (regulated).- Maximum discharge during year, 2,760 second-feet Dec. 28 (gage height, 4.0 feet); minimum, 1.2 second-feet Oct. 13, 14 (gage height, 0.90 foot).
1941-46: Maximum discharge, that of Dec. 28, 1945; minimum, 0.6 second-foot Sept. 16, 1944.

Remarks.- Records good except those above 1,000 second-feet and those for periods of shifting control or no gage-height record, which are fair. Some regulation at diversion dam, 0.9 mile above station, where water is diverted into Yellowhawk Creek and Garrison Creek for stock and irrigation. City of Walla Walla diverts water for municipal supply. Other small diversions above station for irrigation. Monthly discharge adjusted for Yellowhawk Creek and Garrison Creek diversions.

Rating tables, water year 1945-46, except period of shifting control
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30			
1.0	3.3	1.6	50	1.4	4.0	2.3	385
1.2	10	1.8	105	1.6	22	2.6	670
1.4	25	2.0	192	1.8	80	3.0	1,170
				2.0	155	3.5	1,930

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	5.7	117	335	210	421	142	69	106	7.8	5.1	5.1
2	4.3	7.9	101	335	217	368	80	63	80	7.0	5.1	5.1
3	4.3	8.3	87	343	210	326	63	73	60	7.0	5.1	5.7
4	4.0	7.1	84	360	175	224	54	100	49	7.0	5.1	5.1
5	4.3	8.3	75	504	175	106	54	111	34	7.0	4.5	5.7
6	4.3	6.7	75	448	189	117	60	91	57	6.3	5.7	5.7
7	4.3	6.3	94	351	175	123	57	80	47	6.3	5.1	6.3
8	4.3	5.7	91	265	168	100	63	80	39	6.3	5.7	6.3
9	4.3	5.7	78	215	155	100	60	73	32	9.4	5.7	5.7
10	4.0	7.1	69	200	142	117	54	69	29	7.8	5.7	5.1
11	4.8	7.9	59	180	75	135	57	54	28	7.8	6.3	5.1
12	6.0	8.7	54	160	39	419	100	49	22	7.0	5.1	5.1
13	2.0	9.1	45	148	34	620	117	45	18.5	5.7	5.7	5.7
14	1.8	9.1	34	130	34	475	142	39	24	5.1	5.1	5.1
15	6.0	32	33	120	37	394	175	34	20	4.5	4.5	6.3
16	2.6	57	32	125	45	326	196	32	17.5	4.5	5.1	6.3
17	2.8	55	28	130	49	293	224	32	16.0	4.0	5.1	6.3
18	2.8	59	21	140	52	293	210	34	16.0	7.0	5.1	6.3
19	3.0	109	21	145	54	278	247	34	14.0	6.7	4.5	7.0
20	4.3	94	21	150	60	224	217	34	13.0	6.4	5.1	6.3
21	3.5	66	21	145	60	142	162	31	7.8	6.1	4.0	7.0
22	4.5	39	21	285	57	192	117	34	7.0	5.8	4.0	6.3
23	5.1	36	35	394	60	286	95	34	10.5	5.5	4.0	6.3
24	4.8	35	69	532	102	301	83	32	9.4	5.2	4.0	6.3
25	4.3	48	84	570	385	286	95	34	9.4	4.9	5.1	5.7
26	3.8	63	91	448	309	189	203	43	8.6	4.6	7.0	5.7
27	4.3	151	101	368	428	247	142	142	8.6	4.3	6.3	5.1
28	4.8	148	1,300	301	551	293	106	286	7.8	4.0	4.5	5.7
29	4.5	137	1,510	270	-	301	111	309	10.5	5.1	4.5	5.1
30	4.8	121	620	203	-	286	87	293	8.6	5.1	6.3	5.1
31	5.7	-	421	189	-	255	-	135	-	5.1	5.7	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Yellowhawk Creek and Garrison Creek diversions (acre-feet)	Adjusted for diversion: Runoff in acre-feet	Mean discharge in second-feet
October	6.0	1.8	4.16	256	1,620	1,880	30.6
November	151	5.7	45.1	2,680	2,910	5,590	93.9
December	1,510	21	177	10,890	2,390	13,280	216
Calendar year 1945	1,510	1.1	79.2	57,330	26,690	84,020	116
January	570	120	273	16,800	1,510	18,310	298
February	551	34	152	8,420	3,720	12,140	219
March	620	100	266	16,340	4,760	21,100	343
April	247	54	119	7,090	7,730	14,820	249
May	309	31	82.9	5,100	5,760	10,860	177
June	106	7.0	27.0	1,610	3,620	5,230	87.9
July	9.4	4.0	6.01	370	2,220	2,590	42.1
August	7.0	4.0	5.15	317	1,210	1,530	24.9
September	7.0	5.1	5.79	344	2,260	2,600	43.7
Water year 1945-46	1,510	1.8	97.0	70,220	39,710	109,900	152

Note.- No gage-height record Jan. 8-12, 14-22, July 19-27; discharge computed on basis of records for stations on nearby streams. Shifting-control method used Dec. 29 to Jan. 13.

Blue Creek near Walla Walla, Wash.

Location.- Water-stage recorder, lat. 46°03'40", long. 118°07'50", in SE¼NW¼ sec. 25, T. 7 N., R. 37 E., 1 mile upstream from mouth and 10 miles east of Walla Walla. Datum of gage is at mean sea level, unadjusted.

Drainage area.- 17.0 square miles.

Records available.- October 1939 to September 1946.

Extremes.- Maximum discharge during year, 725 second-feet Dec. 28 (elevation, 1,743.35 feet), from rating curve extended above 400 second-feet; minimum, 0.4 second-foot Aug. 18, 22.

1939-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 0.1 second-foot Oct. 14, 1939, but may have been less during period of no gage-height record Oct 1-11, 1939.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. No known diversion or regulation.

Rating table, water year 1945-46, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 28, June 20 to June 28)

40.2	0.8	41.3	57
40.4	3.1	41.6	105
40.6	8.9	42.0	204
40.8	18	42.5	360
41.0	29	43.0	560

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	1.6	*22	49	27	58	35	14	18	1.9	0.8	0.8
2	.5	2.7	15	44	29	48	32	13	14	1.8	.8	.8
3	.5	2.5	11	44	27	41	28	12	11	1.7	.8	.7
4	.8	2.4	11	47	24	35	25	13	9.3	1.5	.8	1.0
5	.8	2.9	9.8	81	22	34	26	13	8.5	1.5	.7	1.1
6	.8	2.5	12	69	25	38	27	11	14	1.4	.8	1.1
7	.8	2.7	16	59	24	37	25	10	12	1.4	.8	1.3
8	.9	2.5	17	49	22	34	26	11	10	1.8	.8	1.2
9	.9	2.7	14	42	21	33	26	9.7	9.7	2.9	.8	1.0
10	.8	4.1	13	38	20	34	24	8.9	8.5	1.9	.8	1.0
11	.8	4.8	11	34	18	34	27	7.8	7.2	1.6	.7	.9
12	.9	6.1	9.3	29	17	45	36	7.2	6.3	1.5	.7	.8
13	.8	8.5	8.3	28	15	42	38	6.9	5.4	1.5	.8	.8
14	.8	8.3	8.3	26	16	34	40	6.3	5.7	1.5	.8	.9
15	.8	16	4.8	24	20	31	38	5.4	5.4	1.4	.8	1.6
16	.8	20	4.3	23	25	29	37	4.3	4.6	1.5	.8	1.5
17	.9	16	3.8	24	27	a28	36	4.0	4.0	1.3	.7	1.2
18	.9	21	b3.5	27	26	a28	37	4.0	3.3	1.2	.6	1.1
19	1.1	26	b3.5	31	27	a27	37	3.8	2.9	1.1	.6	1.0
20	1.4	17	b4.0	31	27	a26	33	3.5	2.7	1.1	.6	1.0
21	1.1	14	b5.0	29	30	a27	25	3.3	2.7	1.0	.6	1.0
22	1.4	11	11	69	31	a32	20	4.0	2.7	1.0	.6	1.0
23	1.2	9.3	20	159	34	a33	18	3.8	2.9	1.0	.6	1.0
24	1.1	9.8	27	*185	61	a35	18	3.8	2.7	.9	.6	1.0
25	1.0	22	27	*116	95	34	22	4.6	2.7	.9	.8	1.0
26	1.0	31	29	67	56	38	25	10	2.3	.9	.8	1.0
27	1.1	44	40	48	125	51	20	21	2.2	1.0	.8	1.0
28	1.0	31	424	38	107	54	16	32	2.9	1.0	.8	1.0
29	1.0	28	188	34	-	51	25	35	3.5	.9	.8	1.0
30	1.1	23	114	27	-	46	17	29	2.2	.9	1.0	1.0
31	1.5	-	64	24	-	41	-	22	-	.8	.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	28.8	1.5	0.5	0.93	0.055	0.06	57
November	391.4	44	1.6	13.0	.765	.86	776
December	1,150.6	424	3.5	37.1	2.18	2.52	2,280
Calendar year 1945	5,056.2	424	.3	13.9	.818	11.07	10,030
January	1,595	185	23	51.5	3.03	3.49	3,160
February	998	125	15	35.6	2.09	2.18	1,980
March	1,158	58	26	37.4	2.20	2.53	2,300
April	839	40	16	28.0	1.65	1.84	1,660
May	337.3	35	3.3	10.9	.641	.74	669
June	189.3	18	2.2	6.31	.371	.41	575
July	41.6	2.9	.8	1.34	.079	.09	83
August	23.3	1.0	.6	.75	.044	.05	46
September	30.8	1.6	.7	1.03	.061	.07	61
Water year 1945-46	6,783.1	424	.5	18.6	1.09	14.84	13,450

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Yellowhawk Creek at Walla Walla, Wash.

Location.- Water-stage recorder, lat. 46°04'20", long. 118°16'55", in NW¼SW¼ sec. 23, T. 7 N., R. 36 E., 1 mile downstream from point of diversion from Mill Creek and 1 mile east of Walla Walla.

Records available.- April 1941 to September 1946.

Extremes (regulated).- Maximum discharge during year, 284 second-feet Dec. 28 (gage height, 2.68 feet); minimum, 2.6 second-feet Nov. 21 (gage height, 0.53 foot).
1941-46: Maximum discharge not determined, occurred June 7, 1941 (gage height, 4.00 feet); minimum, 2.4 second-feet Sept. 16, 1941 (gage height, 0.50 foot), but may have been less during period of ice effect Jan. 1-24, 1942.

Remarks.- Records good except those for periods of ice effect, which are poor. Regulation at Mill Creek diversion dam, 1 mile above station. Yellowhawk and Garrison Creeks divert water from Mill Creek for stock and irrigation. Many small diversions above station for irrigation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	30	35	23	12	77	87	95	65	57	21	23
2	13	48	28	48	13	62	110	92	65	62	19	24
3	13	48	*27	48	13	49	109	98	69	52	18	20
4	13	40	28	53	13	74	107	110	63	46	18	24
5	17	50	28	66	14	107	105	117	73	44	18	44
6	18	46	29	33	16	126	109	109	92	39	18	60
7	20	44	37	25	14	126	107	104	81	38	20	65
8	19	42	38	27	13	114	112	105	76	39	19	62
9	20	41	36	27	12	112	109	102	70	47	18	58
10	19	44	34	12	12	117	104	100	63	42	16	53
11	20	48	32	13	42	126	109	92	60	53	16	54
12	19	53	b30	21	58	116	138	89	54	50	15	49
13	18	54	b29	20	56	35	147	85	57	37	16	56
14	22	58	b28	24	55	16	145	77	62	38	17	48
15	22	62	b27	30	61	30	132	72	58	38	15	45
16	19	58	b26	19	67	30	104	69	54	34	15	30
17	24	56	b25	9.6	72	35	96	70	49	33	16	28
18	23	39	b24	11	74	33	157	76	44	31	16	26
19	25	6.8	b23	12	74	31	165	77	41	28	15	25
20	29	2.8	b25	12	79	60	145	77	38	25	18	24
21	26	15	b28	12	100	92	123	76	36	24	13	25
22	26	39	b32	32	110	84	104	79	41	24	14	26
23	26	38	b37	*14	112	27	93	77	45	21	14	24
24	24	37	b42	22	149	28	107	74	43	24	16	24
25	24	44	47	*18	187	25	151	79	44	21	21	24
26	24	46	48	10	116	85	167	93	40	22	30	24
27	24	54	46	11	138	125	125	87	38	28	23	24
28	25	51	99	16	109	93	110	73	44	24	14	24
29	24	46	66	14	-	81	116	82	60	22	16	24
30	25	42	44	12	-	58	105	74	56	21	24	24
31	29	-	31	11	-	52	-	81	-	22	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	663	29	13	21.4	1,320
November	1,282.6	62	2.8	42.8	2,540
December	1,111	99	23	35.8	2,200
Calendar year 1945	11,758.6	99	2.8	32.2	23,320
January	705.6	66	9.6	22.8	1,400
February	1,791	187	12	64.0	3,550
March	2,226	126	16	71.8	4,420
April	3,598	167	87	120	7,140
May	2,691	117	69	86.8	5,340
June	1,681	92	36	56.0	3,330
July	1,086	62	21	35.0	2,150
August	553	30	13	17.8	1,100
September	1,059	65	20	35.3	2,100
Water year 1945-46	18,447.2	187	2.8	50.5	36,590

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

Garrison Creek at Walla Walla, Wash.

Location.- Water-stage recorder, lat. 46°04'25", long. 118°17'10", in NE¼ sec. 22, T. 7 N., R. 36 E., 30 feet downstream from county bridge, 1 mile downstream from point of diversion from Mill Creek, and 0.9 mile east of Walla Walla.

Records available.- April 1941 to September 1946.

Extremes (regulated).- Maximum discharge during year, 25 second-feet Feb. 25 (gage height, 2.39 feet); minimum, 0.1 second-foot Jan. 11.
1941-46: Maximum discharge, 32 second-feet Jan. 15, 1943; no flow May 10, 1941.

Remarks.- Records good except those for periods of ice effect or faulty gage-height record, which are poor. Regulation at Mill Creek diversion dam, 1 mile above station. Yellowhawk and Garrison Creeks divert water from Mill Creek for stock and irrigation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	4.6	3.2	1.9	1.1	3.2	11	9.4	8.0	1.6	1.5	2.2
2	9.4	7.6	2.6	2.4	1.3	2.6	13	9.4	7.6	1.8	1.5	1.9
3	9.8	7.3	*2.4	3.2	1.2	3.0	12	9.4	8.3	1.3	1.6	1.9
4	9.8	6.0	2.8	3.2	1.3	7.3	10	12	7.3	1.2	1.5	1.9
5	6.3	7.6	2.8	3.2	1.3	6.0	11	5.2	8.0	1.0	1.6	1.9
6	4.4	7.3	3.0	2.8	1.5	3.4	12	6.3	9.8	1.2	1.6	2.1
7	4.6	6.6	4.1	2.1	1.4	5.2	12	4.9	6.6	1.3	1.5	2.2
8	4.6	6.3	4.6	2.4	1.2	3.9	12	4.9	6.0	1.2	1.3	2.4
9	4.6	6.3	4.4	2.6	1.0	3.4	12	5.2	7.6	1.2	1.3	2.2
10	4.6	7.3	4.1	.7	1.0	9.6	11	4.4	6.6	1.3	1.2	2.4
11	4.9	7.6	3.2	.7	1.9	12	12	4.9	5.7	1.5	1.0	2.4
12	4.9	8.6	2.4	1.9	2.8	3.2	5.4	7.6	4.4	1.4	1.3	2.4
13	3.4	8.6	b2.2	1.8	2.8	3.2	3.9	7.6	4.6	1.3	1.6	2.4
14	3.9	8.6	b2.0	2.2	4.1	3.2	3.9	7.0	4.9	1.3	2.1	2.8
15	3.6	9.0	b1.8	3.0	7.0	3.2	3.9	6.3	4.4	1.3	2.2	3.4
16	3.0	8.3	b1.7	1.6	7.6	3.2	2.6	5.7	3.9	1.3	2.1	3.6
17	3.9	7.6	b1.6	.7	8.0	3.0	3.0	5.7	3.6	1.0	2.1	3.4
18	3.9	5.7	b1.5	.8	5.2	3.4	12	6.0	3.2	.9	1.9	3.4
19	4.1	3.9	b1.3	1.0	5.4	3.2	15	5.4	3.0	1.1	1.9	3.4
20	4.6	4.1	b1.8	1.1	3.0	3.6	14	5.2	2.8	1.1	1.8	3.4
21	4.4	4.6	b2.5	1.1	3.0	10	13	5.4	3.2	.9	1.2	3.2
22	4.4	6.0	b3.0	3.0	3.2	7.6	11	6.0	2.1	.8	1.6	3.4
23	4.4	5.7	b3.5	*1.2	3.2	2.6	8.6	5.4	2.6	.8	1.9	3.2
24	3.9	5.4	b4.0	2.1	3.2	2.6	9.6	4.9	3.2	.8	2.1	3.0
25	3.6	6.0	4.6	1.8	4.9	2.4	13	5.4	3.2	.6	2.4	2.6
26	3.9	6.3	4.9	.8	3.4	6.6	11	7.6	3.0	.9	2.6	2.6
27	3.9	5.4	5.2	.9	3.4	15	8.6	9.4	2.6	1.3	2.4	2.4
28	4.1	3.0	5.7	1.6	3.4	12	8.0	6.6	1.9	1.5	1.5	2.6
29	3.9	3.6	3.2	1.3	-	9.6	11	9.8	1.9	1.6	1.4	2.8
30	4.1	3.9	2.7	1.3	-	7.3	10	9.0	1.8	1.8	1.9	2.8
31	4.4	-	2.2	.9	-	6.3	-	10	-	1.6	2.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	153.3	10	3.0	4.95	304
November	188.8	9.0	3.0	6.29	374
December	95.0	5.7	1.3	3.06	188
Calendar year 1945	1,695.1	13	.6	4.64	3,362
January	55.3	3.2	.7	1.78	110
February	87.8	8.0	1.0	3.14	174
March	173.6	15	2.4	5.60	344
April	295.7	15	2.6	9.86	587
May	214.0	12	4.4	6.90	424
June	145.8	9.8	1.6	4.86	289
July	37.9	1.8	.6	1.22	75
August	53.6	2.6	1.0	1.74	107
September	80.3	3.6	1.9	2.68	159
Water year 1945-46	1,581.3	15	.7	4.33	3,140

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- Faulty intake action Dec. 30, 31, Mar. 10, 12-17, 26-26, Apr. 17-21, 26-28; disoharge computed on basis of records for Yellowhawk Creek at Walla Walla. Shifting-control method used Oct. 24 to Apr. 16, Apr. 29 to June 9, July 3 to Sept. 7, Sept. 25-30.

East Fork Touchet River near Dayton, Wash.

Location.- Water-stage recorder, lat. 46°16'45", long. 117°54'05", in NW¼NW¼ sec. 11, T. 9 N., R. 39 E., 250 feet upstream from city of Dayton's water-supply headworks, 1,000 feet upstream from Hatley Creek, three-quarters of a mile downstream from Wolf Creek, 3 miles upstream from confluence with South Fork, and 4 miles southeast of Dayton. Datum of gage is 1,768.3 feet above mean sea level (river-profile survey).

Drainage area.- 102 square miles.

Records available.- April 1941 to September 1946.

Extremes.- Maximum discharge during year, 1,190 second-feet Dec. 28 (gage height, 4.99 feet); minimum, 30 second-feet Nov. 10.
1941-46: Maximum discharge, that of Dec. 28, 1945; minimum, 29 second-feet Sept. 9, 12, 13, 14, 1944.

Remarks.- Records good except those for periods of ice effect, no gage-height record, or shifting control, which are fair. No regulation. Small diversions above station for irrigation during summer months.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	46	121	264	143	267	207	196	160	73	45	39
2	36	56	102	239	141	242	190	190	155	71	43	38
3	35	53	92	218	134	218	177	204	150	70	43	40
4	36	49	*89	230	128	196	172	239	148	67	40	41
5	37	54	87	310	121	183	167	264	145	66	40	42
6	38	50	92	280	130	190	170	254	170	64	41	43
7	38	49	121	248	121	177	167	239	148	63	41	46
8	36	49	110	218	115	172	177	239	139	64	41	45
9	37	49	98	188	110	170	170	236	130	75	41	42
10	37	49	94	175	108	180	160	224	125	66	40	40
11	37	49	87	160	104	190	165	210	119	63	40	38
12	37	50	b80	148	100	280	190	199	113	60	40	38
13	37	50	b70	139	96	317	221	193	108	60	40	38
14	37	50	b65	152	96	270	245	188	115	60	41	39
15	37	66	b60	125	98	248	254	180	110	58	40	43
16	38	71	b55	121	102	218	261	172	104	57	39	48
17	38	67	b52	119	106	204	280	177	98	57	39	46
18	38	64	b50	119	110	201	335	185	92	54	38	42
19	42	a75	b48	121	113	196	376	183	89	52	38	40
20	44	a63	b45	121	121	190	353	180	84	51	38	39
21	42	a60	b50	125	128	188	300	177	84	49	38	40
22	44	a58	b60	236	134	196	248	177	88	49	38	40
23	43	a56	b70	230	143	196	227	175	90	48	39	40
24	42	a56	83	362	192	201	233	170	86	48	40	39
25	42	a80	90	339	273	193	297	172	84	46	43	39
26	41	a130	96	264	239	204	357	177	81	48	43	40
27	41	247	108	221	307	251	293	230	77	49	40	40
28	42	218	595	193	328	270	254	215	81	46	38	40
29	42	188	645	172	-	270	257	199	84	45	38	38
30	42	148	419	150	-	251	221	183	77	48	40	38
31	43	-	317	*141	-	230	-	167	-	45	39	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,211	44	35	39.1	0.383	0.44	2,400
November	2,350	247	46	78.3	.768	.86	4,660
December	4,151	645	45	134	1.31	1.51	8,230
Calendar year 1945	34,237	645	32	93.8	.920	12.48	67,920
January	6,108	362	119	197	1.93	2.23	12,120
February	4,041	328	96	144	1.41	1.47	8,020
March	6,759	317	170	218	2.14	2.46	13,410
April	7,124	376	160	237	2.32	2.80	14,130
May	6,194	264	167	200	1.96	2.26	12,290
June	3,332	170	77	111	1.09	1.21	6,610
July	1,772	75	45	57.2	.561	.65	3,510
August	1,244	45	38	40.1	.393	.45	2,470
September	1,221	48	38	40.7	.399	.45	2,420
Water year 1945-46	45,507	645	35	125	1.23	16.59	90,270

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations on nearby streams.
b Stage-discharge relation affected by ice.
Note.- Shifting-control method used Apr. 26 to Sept. 30.

Touchet River near Touchet, Wash.

Location.- Water-stage recorder, lat. 46°05'25", long. 118°39'40", in NE¼ sec. 15, T. 7 N., R. 33 E., 100 feet downstream from county road bridge, 3½ miles north of Touchet, and 4½ miles upstream from mouth.

Drainage area.- 726 square miles.

Records available.- April 1941 to September 1946.

Extremes.- Maximum discharge observed during year, 4,070 second-feet Dec. 29 (gage height, 8.44 feet, probably higher sometime during period of faulty gage-height record), from rating curve extended above 1,600 second-feet; minimum, 10 second-feet Aug. 25.
1941-46: Maximum discharge observed, that of Dec. 29, 1945; minimum discharge, 6.4 second-feet Sept. 13, 14, 1944 (gage height, 1.45 feet).

Remarks.- Records good except those for periods of ice effect or faulty gage-height record, which are poor. Many large diversions above station for irrigation. No regulation.

Rating tables, water year 1945-46, except period of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 27						Feb. 28 to Sept. 30					
1.8	25	2.9	150	5.0	896	1.7	19	2.7	129	4.5	715
2.0	38	3.2	212	5.5	1,140	1.9	32	3.0	187	5.0	960
2.2	56	3.6	318	6.0	1,420	2.1	49	3.5	322	5.5	1,210
2.4	77	4.0	451	7.0	2,050	2.4	82	4.0	500		
2.6	102	4.5	660	8.0	2,750						

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	49	318	650	340	1,000	500	397	265	81	26	20
2	38	49	249	570	429	750	453	355	238	72	25	20
3	37	58	201	500	384	600	411	332	225	67	25	21
4	36	67	177	600	334	520	376	355	210	62	25	19
5	35	59	161	800	315	450	358	418	201	58	24	21
6	36	61	148	550	408	410	345	422	285	56	24	27
7	36	64	212	470	365	430	329	386	294	55	22	32
8	36	82	234	405	286	415	329	369	228	54	21	38
9	34	82	205	365	276	405	355	362	201	138	20	40
10	34	80	182	343	267	400	325	348	181	88	18	36
11	34	66	171	321	257	450	319	322	164	66	17	34
12	33	67	152	301	246	500	345	291	151	57	16	31
13	33	68	127	286	234	800	397	274	140	51	16	29
14	33	66	b110	273	229	900	432	257	147	47	16	28
15	33	69	b105	262	234	720	472	240	156	46	16	32
16	35	104	b95	252	241	620	472	220	140	47	16	42
17	33	126	b90	250	249	550	472	212	133	44	16	43
18	33	115	b85	250	259	500	496	218	119	42	17	46
19	36	127	b83	250	265	480	580	228	104	39	16	44
20	41	152	b80	255	273	470	625	230	95	35	16	40
21	46	124	b85	270	289	460	560	228	83	33	16	36
22	45	108	b90	1,420	321	450	484	225	74	31	14	35
23	46	97	b100	1,300	346	470	394	240	78	30	14	36
24	47	90	b130	2,000	388	470	345	230	86	28	13	35
25	44	92	b200	1,700	500	500	366	222	85	28	11	34
26	43	121	501	900	700	480	500	272	82	28	16	34
27	43	366	525	700	600	600	560	308	77	28	17	33
28	43	640	2,800	*525	900	670	464	460	75	28	19	32
29	44	459	3,070	*486	-	838	411	386	96	27	17	32
30	46	*419	1,000	401	-	648	540	335	101	26	18	32
31	48	-	800	359	-	560	-	294	-	26	18	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,200	48	33	38.7	2,380
November	4,067	640	49	136	8,070
December	12,486	3,070	80	403	24,770
Calendar year 1945	68,117	3,070	13	187	135,100
January	17,994	2,000	250	580	35,690
February	9,935	900	229	355	19,710
March	17,516	1,000	400	565	34,740
April	13,015	625	319	434	25,810
May	9,434	460	212	304	18,710
June	4,514	294	74	150	8,950
July	1,518	138	26	49.0	3,010
August	565	26	11	18.2	1,120
September	982	46	19	32.7	1,950
Water year 1945-46	93,226	3,070	11	255	184,900

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- Faulty intake action Dec. 28, Dec. 30 to Jan. 7, Jan. 17-21, 23-27, Feb. 25 to Mar. 27; discharge computed on basis of records for East Fork Touchet River near Dayton and Mill Creek near Walla Walla.

Umatilla River above Meacham Creek, near Gibbon, Oreg.

Location.- Water-stage recorder, lat. 45°43', long. 118°20', in SW¼ sec. 21, T. 3 N., R. 36 E., 0.8 mile downstream from Ryan Creek, 2½ miles upstream from Meacham Creek, and 2½ miles northeast of Gibbon. Datum of gage is 1,855.25 feet above mean sea level, datum of 1929.

Drainage area.- 125 square miles.

Records available.- June 1939 to September 1946. April 1933 to June 1939 at site 1 mile downstream.

Average discharge.- 13 years, 202 second-feet.

Extremes.- Maximum discharge during year, 5,040 second-feet Dec. 28 (gage height, 7.86 feet), from rating curve extended above 900 second-feet by logarithmic plotting; minimum, 39 second-feet Aug. 16, 17.
1933-46: Maximum discharge, that of Dec. 28, 1945; minimum, 28 second-feet Sept. 27, 1935, Jan. 9, 1937.

Remarks.- Records good except those above 1,500 second-feet, which are fair. No diversion or regulation above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	50	308	470	169	576	370	515	510	121	51	45
2	41	77	230	406	177	485	353	520	471	116	50	46
3	41	73	185	378	174	430	333	631	435	108	48	45
4	41	62	177	383	163	370	337	781	400	103	47	50
5	42	74	164	470	156	353	370	805	395	96	47	54
6	42	65	159	445	158	475	420	703	471	91	48	52
7	42	62	206	388	153	485	425	661	370	88	48	63
8	42	60	203	317	136	450	465	844	333	93	48	55
9	42	58	175	264	134	548	420	781	307	121	47	50
10	42	59	159	243	132	644	378	739	279	96	48	49
11	42	62	148	210	128	598	430	631	254	85	46	48
12	42	78	135	191	120	792	674	570	240	80	45	47
13	42	92	122	180	114	912	786	532	233	78	45	46
14	42	107	113	172	116	650	891	466	240	75	48	45
15	42	169	107	161	124	538	912	420	213	72	47	49
16	43	177	104	156	144	450	940	405	197	71	44	55
17	43	159	98	153	186	410	1,050	430	188	68	43	52
18	43	148	b94	156	163	370	1,210	455	173	68	44	49
19	45	164	b93	161	180	353	1,170	445	166	63	44	48
20	48	144	b92	158	233	345	984	425	163	61	44	46
21	44	128	94	156	282	337	751	400	166	60	44	46
22	48	114	102	337	282	388	581	380	168	59	43	46
23	47	100	177	313	313	392	576	365	173	58	44	46
24	46	98	248	337	521	388	709	351	153	56	43	45
25	45	120	266	333	760	345	1,050	370	145	55	54	45
26	45	234	276	268	485	365	1,200	455	134	55	53	45
27	44	1,160	336	226	762	582	876	1,090	125	55	46	45
28	45	804	2,680	210	850	554	751	1,260	138	54	44	45
29	44	774	1,990	194	-	516	727	922	158	53	45	45
30	47	463	940	166	-	475	608	721	132	52	51	45
31	48		632	163	-	420	-	592	-	52	45	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,351	48	41	43.6	0.349	0.40	2,680
November	5,935	1,160	50	198	1.58	1.77	11,770
December	10,813	2,680	92	349	2.79	3.22	21,450
Calendar year 1945	94,783	2,680	41	260	2.08	28.20	188,000
January	8,165	470	153	263	2.10	2.43	16,200
February	7,295	850	114	261	2.09	2.17	14,470
March	14,996	912	337	484	3.87	4.46	29,740
April	20,747	1,210	333	692	5.54	6.17	41,150
May	18,665	1,260	351	602	4.82	5.55	37,020
June	7,530	510	125	251	2.01	2.24	14,940
July	2,361	121	52	76.2	.610	.70	4,680
August	1,442	54	43	46.5	.372	.43	2,860
September	1,447	63	45	48.2	.386	.43	2,870
Water year 1945-46	100,747	2,680	41	276	2.21	29.97	199,800

b Stage-discharge relation affected by ice.

Umatilla River at Pendleton, Oreg.

Location.- Water-stage recorder, lat. 45°40', long. 118°48', in NE¼ sec. 10, T. 2 N., R. 3E E., at Pendleton, 2½ miles upstream from McKay Creek. Datum of gage is 1,062.54 feet above mean sea level, datum of 1929. Temporary water-stage recorder 600 feet upstream at different datum used in low-water periods.
Drainage area.- 637 square miles.
Records available.- February 1891 to July 1892, May 1903 to June 1905, October 1934 to September 1946. May 1921 to September 1934 at site about 2¼ miles downstream.
Average discharge.- 23 years (1923-46), 449 second-feet.
Extremes.- Maximum discharge during year, 12,400 second-feet Dec. 29 (gage height, 7.92 feet), from rating curve extended above 7,500 second-feet; minimum, 17 second-feet Aug. 6.

1891-92, 1903-5, 1921-46: Maximum discharge, 13,500 second-feet Apr. 1, 1931 (gage height, 8.8 feet, site and datum then in use), computed on basis of records for Umatilla River at Umatilla and near Yoakum, and Birch Creek at Rieth; minimum, 7 second-feet Aug. 14, 1924.

Flood of May 30-31, 1906, reached a stage of 11.0 feet, present site and datum (discharge, 15,500 second-feet, estimated by Corps of Engineers).

Maximum flood known, 17,000 second-feet Dec. 14, 1882, (date and discharge from data furnished by Corps of Engineers).

Remarks.- Records excellent except those for Nov. 26 to June 20 which are good, and those for periods of shifting control or no gage-height record, which are fair. Records based on auxiliary water-stage recorder 600 feet above station for periods Oct. 1 to Nov. 25, Dec. 12-23, June 21 to Sept. 30. Small diversions above station for irrigation; no regulation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a45	55	916	1,510	441	1,880	1,020	1,040	846	169	40	38
2	a43	a56	675	1,250	476	1,510	937	946	718	160	37	38
3	41	a72	527	1,190	478	1,340	894	1,040	655	146	37	38
4	41	a78	460	1,180	427	1,180	902	1,290	602	137	37	38
5	42	a74	416	1,440	399	1,080	991	1,430	553	128	34	50
6	42	a80	378	1,520	406	1,180	1,190	1,250	678	115	32	54
7	42	81	406	1,290	399	1,320	1,260	1,160	574	109	35	56
8	41	83	424	1,050	392	1,240	1,380	1,440	504	115	37	67
9	41	78	402	858	340	1,360	1,310	1,490	448	140	35	58
10	41	83	374	726	333	1,640	1,160	1,390	413	146	32	50
11	41	83	354	610	326	1,680	1,130	1,180	368	124	29	46
12	41	93	279	539	314	1,920	1,700	1,030	340	115	30	46
13	41	111	248	497	294	2,770	2,020	937	320	104	32	44
14	41	120	223	462	274	2,070	2,340	846	326	101	32	44
15	41	169	205	427	294	1,650	2,340	750	320	95	32	44
16	40	239	192	399	333	1,380	2,300	686	294	87	32	50
17	41	248	188	378	392	1,200	2,500	686	274	82	30	54
18	43	234	a160	372	434	1,110	2,720	718	249	77	29	54
19	45	263	h135	372	455	1,070	2,870	702	231	70	29	50
20	49	289	a130	372	532	1,060	2,450	662	219	65	29	46
21	50	248	a140	366	662	1,010	1,890	625	205	60	29	42
22	51	226	158	686	758	1,090	1,460	602	205	56	27	42
23	55	202	234	782	758	1,170	1,290	581	201	54	27	44
24	54	167	468	836	1,000	1,130	1,370	546	201	52	27	42
25	52	174	595	838	1,620	1,030	1,860	553	190	48	27	42
26	51	264	650	718	1,360	955	2,560	678	176	48	35	44
27	51	3,120	800	632	1,490	1,390	1,920	1,230	166	52	44	44
28	52	2,580	3,200	567	2,380	1,550	1,540	2,160	169	52	35	a43
29	53	2,190	8,870	525	-	1,440	1,440	1,720	216	46	35	a43
30	54	1,450	3,340	469	-	1,510	1,260	1,290	194	46	40	a43
31	56	-	2,130	427	-	1,170	-	1,020	-	44	40	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,421	56	40	45.8	2,820
November	13,188	3,120	55	440	26,160
December	27,677	8,870	130	893	54,900
Calendar year 1945	219,976	8,870	26	603	436,300
January	23,270	1,520	366	751	46,160
February	17,765	2,380	274	634	35,240
March	42,885	2,770	955	1,383	85,060
April	50,004	2,870	894	1,667	99,180
May	31,678	2,160	546	1,022	62,830
June	10,853	846	166	362	21,530
July	2,843	169	44	91.7	5,640
August	1,026	44	27	33.1	2,040
September	1,394	67	38	46.5	2,760
Water year 1945-46	224,004	8,870	27	614	444,300

a No gage-height record; discharge computed on basis of records for station above Meacham Creek, near Gibbon.
h Computed from staff-gage reading.
Note.- Shifting-control method used Dec. 30 to Feb. 26.

Umatilla River at Yoakum, Oreg.

Location.- Water-stage recorder, lat. 45°41', long. 119°02', in SW¼ sec. 2, T. 2 N., R. 30 E., at highway bridge, half a mile northeast of Yoakum station and 2½ miles downstream from abandoned Furnish Reservoir. Datum of gage is 770.41 feet above mean sea level, datum of 1929.

Drainage area.- 1,280 square miles.

Records available.- May 1903 to August 1916 (flow slightly regulated by storage in Furnish Reservoir, 1910-16), October 1934 to September 1946. June 1915 to September 1934 at site 5 miles upstream, above Furnish Reservoir.

Average discharge.- 43 years, 658 second-feet.

Extremes.- Maximum discharge during year, 12,000 second-feet Dec. 29 (gage height, 9.50 feet), from rating curve extended above 5,200 second-feet by logarithmic plotting; minimum, 46 second-feet Oct. 3.

1903-46: Maximum discharge, 20,000 second-feet May 30, 1906 (gage height, about 15.0 feet, datum then in use, from floodmarks), from rating curve extended above 6,600 second-feet on basis of records for station near Umatilla; minimum, 12 second-feet Aug. 10-12, 1908.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record and those above 6,000 second-feet, which are fair. Diversions above station for irrigation. Flow regulated to some extent by mills at Pendleton, and since 1927 by McKay Reservoir.

Rating tables, water year 1945-46, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30					
0.8	56	2.0	440	0.5	64	1.8	460	5.0	3,310
.9	72	2.4	660	.6	82	2.1	605	6.0	4,740
1.0	91	2.9	975	.8	126	2.5	845	7.0	6,490
1.2	138	3.4	1,345	1.0	175	3.0	1,190	8.0	8,530
1.4	200	4.0	1,870	1.2	231	3.5	1,610		
1.7	310	4.6	2,500	1.5	334	4.0	2,110		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	76	989	a1,590	478	a1,990	a1,120	1,210	949	294	389	428
2	55	76	726	h1,330	515	a1,540	a1,030	1,110	890	327	385	428
3	52	89	562	a1,260	515	a1,340	989	1,140	826	375	327	415
4	52	93	480	a1,260	474	a1,230	968	a1,390	762	361	316	386
5	50	91	440	h1,500	433	a1,130	1,040	a1,670	720	346	327	330
6	50	98	395	a1,530	442	h1,140	1,220	a1,550	806	346	385	298
7	52	100	390	a1,470	446	a1,370	1,330	a1,440	744	357	369	284
8	50	100	418	a1,170	407	a1,320	1,430	1,680	654	365	389	294
9	53	102	413	h968	377	a1,470	1,410	1,760	600	407	390	288
10	53	104	388	a816	377	a1,720	1,250	a1,650	545	424	390	270
11	53	104	368	a700	365	h1,790	1,180	a1,410	464	398	386	288
12	49	118	b318	h627	350	a2,080	1,710	a1,210	415	377	381	260
13	49	126	b285	a575	354	h3,120	2,200	a1,020	386	389	260	257
14	48	158	b252	a511	323	a2,190	2,820	a918	361	388	237	253
15	48	174	a253	a480	327	a1,780	2,670	819	398	386	231	244
16	48	250	a225	451	350	a1,480	2,620	732	377	402	234	103
17	48	280	a212	428	402	a1,280	2,810	702	365	448	309	90
18	50	272	a190	411	460	a1,180	a3,020	708	361	420	334	80
19	55	283	b180	407	478	a1,150	a3,170	690	338	388	338	77
20	59	299	a182	402	525	h1,140	a2,680	684	342	381	369	68
21	62	287	a175	390	649	a1,100	a2,210	644	381	386	381	81
22	66	276	a197	704	750	a1,180	a1,620	616	386	381	381	59
23	69	254	a267	956	744	a1,250	a1,740	605	411	381	407	61
24	72	239	436	990	962	a1,220	h1,950	570	411	377	411	59
25	69	232	600	1,050	1,740	a1,110	a2,280	570	330	389	420	56
26	67	261	636	864	1,580	a1,030	a2,830	669	291	365	415	54
27	69	2,140	768	726	a1,880	h1,300	a2,180	1,200	274	330	428	54
28	69	2,720	2,460	638	a2,480	a1,720	a1,760	2,220	277	274	420	58
29	69	2,160	9,150	580	-	a1,550	a1,660	1,800	323	234	420	54
30	70	1,480	4,160	530	-	a1,420	a1,450	1,350	316	222	424	58
31	74	-	a2,210	482	-	a1,270	-	1,070	-	257	424	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,781	74	48	57.5	3,530
November	13,022	2,720	78	434	25,830
December	28,681	9,150	160	925	56,850
Calendar year 1945	270,257	9,150	48	740	536,000
January	25,594	1,590	390	826	50,760
February	18,923	2,480	323	876	37,530
March	45,590	3,120	1,030	1,471	90,430
April	56,127	3,170	968	1,671	111,300
May	34,807	2,220	570	1,123	69,040
June	14,703	949	274	490	29,160
July	11,127	446	222	359	22,070
August	11,197	428	231	361	22,210
September	5,693	428	54	190	11,290
Water year 1945-46	267,225	9,150	48	732	530,000

a No gage-height record; discharge computed on basis of records for Umatilla River at Pendleton, McKay Creek near Pendleton, and Birch Creek near Rieth.
b Stage-discharge relation affected by ice.
h Computed from staff-gage reading.

Umatilla River near Umatilla, Oreg.

Location.- Water-stage recorder, lat. 45°54', long. 119°20', in NW¼ sec. 21, T. 5 N., R. 28 E., 1½ miles downstream from West Division main canal of Umatilla project and 2 miles upstream from Umatilla and mouth of River. Datum of gage is 330.57 feet above mean sea level, datum of 1929.

Drainage area.- 2,290 square miles.

Records available.- October 1903 to September 1946.

Average discharge.- 43 years, 492 second-feet.

Extremes.- Maximum discharge during year, 8,140 second-feet Dec. 29 (gage height, 7.18 feet); minimum, 14 second-feet June 12-15.
1903-46: Maximum discharge observed, 19,600 second-feet May 31, 1906 (gage height, 11.0 feet); no flow at times.

Remarks.- Records good except those for Oct. 1-22, which are fair, and those above 2,000 second-feet, which are poor. Many diversions above station for irrigation; Brownell Canal diverts below station. Flow regulated by McKay and Cold Springs Reservoirs.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-22)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
2.2	18	2.8	138	3.7	830	2.1	12	2.8	149	4.2	1,570
2.3	28	3.0	230	4.1	1,310	2.2	20	3.0	245	4.6	2,230
2.4	40	3.2	360	4.6	2,090	2.3	30	3.2	375	5.1	3,160
2.6	76	3.4	525	5.1	2,990	2.4	43	3.5	645	5.7	4,390
						2.6	83	3.8	1,000	6.4	6,040

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	167	1,130	2,210	361	2,410	975	645	481	74	53	65
2	53	159	753	1,630	361	1,810	744	473	391	31	30	171
3	53	151	572	1,460	383	1,590	645	447	326	26	30	189
4	53	146	457	1,240	368	1,340	565	545	229	33	29	171
5	56	146	400	1,300	340	1,170	575	767	180	31	27	153
6	43	146	346	1,730	328	1,090	678	1,000	145	28	29	175
7	34	146	304	1,510	333	1,260	815	767	214	27	46	180
8	36	146	339	1,240	305	1,270	851	803	142	34	57	162
9	38	146	339	1,010	281	1,260	1,050	1,230	89	27	52	153
10	43	146	304	779	257	1,540	975	1,080	67	25	43	149
11	46	151	290	656	251	1,780	733	863	23	25	55	131
12	40	155	266	545	240	1,790	962	656	15	31	89	117
13	34	151	236	473	224	2,740	1,650	527	14	36	101	120
14	40	146	210	439	214	2,590	2,140	375	14	39	92	104
15	37	146	190	375	203	2,060	2,370	281	21	36	65	98
16	21	258	205	340	209	1,680	2,340	158	25	31	60	115
17	17	346	195	312	229	1,360	2,370	98	45	40	48	146
18	16	368	195	299	281	1,240	2,480	52	26	60	43	281
19	22	346	284	281	312	1,230	2,700	65	18	76	48	269
20	25	230	284	281	340	1,160	2,480	60	16	67	38	155
21	28	220	339	275	423	1,140	2,080	43	16	67	36	57
22	54	190	332	319	555	1,090	1,480	57	16	98	38	65
23	72	167	332	791	595	1,230	1,060	89	32	48	38	83
24	76	155	432	744	667	1,160	1,200	55	45	43	35	74
25	68	155	670	1,100	1,330	1,050	1,210	45	48	39	33	89
26	60	146	764	839	1,750	815	1,870	57	35	34	40	52
27	108	590	929	689	1,330	803	1,860	243	39	78	34	52
28	190	2,900	1,580	575	2,540	1,500	1,330	1,560	40	175	36	48
29	190	2,260	4,610	500	-	1,480	1,090	1,650	78	40	39	53
30	200	1,780	6,020	455	-	1,330	1,000	1,160	124	39	43	57
31	180	-	3,140	383	-	1,190	-	722	-	42	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,975	200	16	63.7	3,920
November	12,359	2,900	146	412	24,510
December	26,447	6,020	190	853	52,460
Calendar year 1945	183,003	6,020	1	501	363,000
January	24,780	2,210	275	799	49,150
February	15,008	2,540	203	536	29,770
March	45,158	2,740	803	1,457	89,570
April	42,278	2,700	565	1,409	83,860
May	16,573	1,650	43	535	32,870
June	2,954	481	14	98.5	5,860
July	1,480	175	25	47.7	2,940
August	1,433	101	27	46.2	2,840
September	3,712	281	48	124	7,360
Water year 1945-46	194,157	6,020	14	532	385,100

McKay Creek near Pilot Rock, Oreg.

Location.- Water-stage recorder, lat. 45°33', long. 118°46', in NE¼ sec. 23, T. 1 N., R. 32 E., 400 feet downstream from county road bridge, three-quarters of a mile upstream from maximum flow line (altitude, 1,322 feet) of McKay Reservoir, and 6 miles northeast of Pilot Rock. Datum of gage is 1,335.85 feet above mean sea level, datum of 1929 (Pacific Power & Light Co. bench mark).

Drainage area.- 178 square miles.

Records available.- May to August 1921, October 1926 to September 1946 (1927-29 incomplete).

Average discharge.- 18 years (1926-27, 1929-46), 88.4 second-feet.

Extremes.- Maximum discharge during year, 1,650 second-feet Dec. 28 (gage height, 4.82 feet), from rating curve extended above 590 second-feet); minimum, 0.3 second-foot Aug. 24.

1921, 1926-46: Maximum discharge, 6,000 second-feet Apr. 1, 1931 (gage height, 10.4 feet, site and datum then in use); no flow at times.

Remarks.- Records good except those for period of shifting control and those below 5 second-feet, which are fair. Many small diversions above station for irrigation; none between station and McKay Reservoir.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used May 26 to June 20)

Oct. 1 to Dec. 28					Dec. 29 to Sept. 30					
1.0	1.9	1.6	23	2.7	198	1.2	0.8	1.8	37	3.1	425
1.1	3.7	1.7	31	2.9	275	1.3	2.9	2.0	68	3.4	590
1.2	5.9	1.9	51	3.2	420	1.4	6.3	2.2	106	3.7	790
1.3	8.7	2.1	74	3.5	600	1.5	11	2.4	153	4.0	1,010
1.4	12	2.3	102	3.9	870	1.6	17	2.6	212		
1.5	17	2.5	143			1.7	25	2.8	285		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	5.2	84	253	90	470	190	106	81	9.6	1.2	0.4
2	2.6	6.5	68	212	90	395	175	94	72	8.2	1.0	.6
3	3.2	7.3	59	209	88	334	164	90	60	6.8	.8	.5
4	3.3	7.6	50	215	81	277	164	86	54	4.9	.8	.6
5	3.7	7.0	46	261	77	253	178	84	48	4.3	.8	1.0
6	3.7	6.5	40	277	75	290	222	79	57	3.2	.8	1.4
7	2.1	7.0	42	238	75	269	228	77	46	2.7	.7	2.3
8	1.8	7.6	40	200	72	253	249	136	38	3.2	.7	2.3
9	1.8	7.9	36	164	72	261	242	133	33	3.6	.7	2.5
10	1.8	8.7	36	146	73	298	228	113	31	3.9	.6	1.6
11	1.9	8.7	34	126	72	273	277	98	26	4.3	.6	1.4
12	2.1	9.7	31	108	68	334	352	86	24	4.3	.6	1.0
13	2.3	11	28	100	65	415	380	77	23	4.3	.6	1.0
14	2.8	12	26	92	62	344	400	66	25	4.3	.6	1.0
15	2.1	14	25	82	68	312	375	60	24	4.6	.6	1.4
16	2.3	20	23	77	79	273	348	52	23	3.9	.6	1.6
17	2.4	21	25	72	90	245	334	44	21	3.9	.7	1.6
18	2.8	21	25	66	96	242	330	40	18	3.6	.7	1.8
19	3.5	25	25	65	100	249	316	36	15	3.2	.7	1.6
20	4.1	27	25	62	102	257	277	32	11	2.9	.7	1.6
21	4.6	27	a26	62	117	249	225	32	10	2.9	.7	1.4
22	4.4	25	a30	235	133	261	187	32	11	2.3	.5	1.4
23	4.4	22	42	232	148	257	164	35	12	2.1	.4	1.4
24	4.4	22	121	242	235	238	153	31	12	1.8	.5	1.4
25	4.4	23	156	257	357	219	159	30	13	1.6	.7	1.4
26	3.9	35	171	196	285	215	178	38	12	1.4	.7	1.4
27	3.2	365	202	159	528	277	159	127	11	1.4	.7	1.4
28	3.3	213	968	136	632	261	136	212	11	1.4	.6	1.6
29	3.5	180	1,040	119	-	253	136	150	13	1.2	.6	1.6
30	3.9	113	514	100	-	228	121	119	12	1.2	.6	1.6
31	4.4	-	344	90	-	206	-	98	-	1.2	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	97.0	4.6	1.8	3.13	192
November	1,265.7	365	5.2	42.2	2,510
December	4,362	1,040	23	141	8,690
Calendar year 1945	47,952.6	1,040	.2	131	95,110
January	4,853	277	62	157	9,630
February	4,030	632	62	144	7,990
March	8,708	470	206	281	17,270
April	7,047	400	121	235	13,980
May	2,493	212	30	80.4	4,940
June	847	81	10	28.2	1,680
July	108.2	9.6	1.2	3.49	215
August	21.0	1.2	.4	.68	42
September	41.6	2.5	.4	1.39	83
Water year 1945-46	33,893.5	1,040	.4	92.9	67,220

a No gage-height record; discharge computed on basis of weather records.

McKay Reservoir near Pendleton, Oreg.

Location.- Staff gage, lat. 45°36', long. 118°48', at dam on McKay Creek in SE¼ sec. 34, T. 2 N., R. 32 E., 4 miles south of Pendleton. Datum of gage is at mean sea level (surveys by Bureau of Reclamation).

Records available.- October 1930 to September 1946.

Extremes.- Maximum contents observed during year, 71,300 acre-feet Apr. 30, May 31 (elevation, 1,320.0 feet); minimum observed, 17,110 acre-feet Oct. 31 (elevation, 1,253.0 feet).

1930-46: Maximum contents observed, 71,890 acre-feet July 1, 1942 (elevation, 1,320.5 feet); minimum observed, 3,051 acre-feet Oct. 1, Nov. 1, Dec. 1, 1935 (elevation, 1,217.6 feet).

Remarks.- Reservoir is formed by gravel-fill dam with concrete facing completed in 1926; storage began in 1927. Capacity, 73,660 acre-feet between elevations 1,182 feet (floor of trash-rack structure) and 1,322 feet (top of spillway gates). Dead storage not known. Water is used for irrigation of lands along Umatilla River near Echo, Stanfield, and Hermiston. Gage read to nearest foot or half-foot on last day of each month, occasionally at other times.

Cooperation.- Gage readings and capacity table furnished by Bureau of Reclamation.

Monthly elevation and contents, water year October 1945 to September 1946

Date	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	1,253.0	17,110	
Oct. 31	1,253.0	17,110	0
Nov. 30	1,257.0	19,220	+2,110
Dec. 31	1,271.0	27,490	+8,270
Calendar year 1945..	-	-	+12,620
Jan. 31	1,283.5	36,050	+8,560
Feb. 28	1,294.0	44,470	+8,420
Mar. 31	1,312.0	62,050	+17,580
Apr. 30	1,320.0	71,300	+9,250
May 31	1,320.0	71,300	0
June 30	1,316.0	66,550	-4,750
July 31	1,298.5	48,460	-18,090
Aug. 31	1,269.5	26,520	-21,940
Sept.30	1,257.0	19,220	-7,300
Water year 1945-46..	-	-	+2,110

McKay Creek near Pendleton, Oreg.

Location.- Water-stage recorder, lat. 45°37', long. 118°48', in sec. 34, T. 2 N., R. 32 E., just upstream from irrigation diversion dam, a quarter of a mile downstream from McKay Dam, and 4 miles south of Pendleton.

Records available.- November 1918 to September 1923, October 1924 to September 1946 (diversions by irrigation canal at gage not included since 1932).

Extremes.- Maximum discharge during year, 512 second-feet (regulated) Apr. 23 (gage height, 1.61 feet); no flow during most of period Oct. 1 to Apr. 16, Sept. 16-30. 1918-46: Maximum discharge observed, 3,250 second-feet Feb. 10, 1921 (gage height, 4.4 feet, site and datum then in use), from rating curve extended above 1,110 second-feet; no flow at times.

Remarks.- Records good except those below 30 second-feet, which are fair. Diversions above station for irrigation. Flow completely regulated since 1927 by McKay Reservoir.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 22 to Sept. 15)

0.1	2.6	0.6	70
.2	10.0	.8	127
.3	22	1.0	194
.4	36	1.2	277
.5	53	1.4	380

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	43	107	128	336	374
2							-	43	137	187	320	369
3							-	41	133	225	282	364
4							-	39	133	225	282	325
5							-	163	130	251	315	255
6							-	255	130	264	330	225
7							-	246	130	282	330	217
8							-	205	127	287	336	214
9							-	156	127	287	358	217
10							-	153	78	287	358	217
11							-	153	46	287	352	217
12							-	109	46	291	316	214
13							-	35	46	306	202	214
14							-	26	48	311	202	214
15							-	6	86	311	202	131
16							-	5	80	347	202	0
17							4	5	83	369	277	0
18							7	10	104	347	320	0
19							8	15	107	336	325	0
20							7	15	130	336	369	0
21							17	15	176	336	380	0
22							22	15	190	330	386	0
23							313	9	217	330	404	0
24							252	6	183	330	404	0
25							121	5	107	325	398	0
26							75	6	93	325	392	0
27							44	6	93	253	392	0
28							44	6	90	206	366	0
29							44	6	93	170	386	0
30							43	6	90	170	380	0
31							-	11	-	238	374	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 17-30	1,001	313	4	71.5	1,990
May	1,814	255	5	58.5	3,600
June	3,340	217	46	111	6,620
July	8,677	369	128	280	17,210
August	10,296	404	202	332	20,420
September	3,767	374	0	126	7,470
The period	28,895	-	-	-	57,310

Birch Creek at Rieth, Oreg.

Location.- Water-stage recorder, lat. 45°39', long. 118°53', in SE¼ sec. 13, T. 2 N., R. 31 E., a quarter of a mile upstream from mouth and half a mile southwest of Rieth.

Drainage area.- 291 square miles.

Records available.- May 1921 to September 1923 and April 1927 to September 1946.

Average discharge.- 17 years (1929-46), 37.1 second-feet.

Extremes.- Maximum discharge during year, 299 second-feet Apr. 19 (gage height, 2.93 feet); minimum, 0.1 second-foot Oct. 3-9, 11-17.
1921-23, 1927-46: Maximum discharge, 1,640 second-feet Jan. 29, 1928 (gage height, 6.00 feet, site and datum then in use), from rating curve extended above 300 second-feet; no flow at times.

Remarks.- Records good Dec. 29 to June 10, others fair except those for periods of ice effect or no gage-height record and those below 5 second-feet, which are poor. Several small diversions above station for irrigation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	10	16	89	35	93	99	79	20	1.5	0.3	0.2
2	5.1	10	16	79	34	89	92	72	22	1.4	.3	.2
3	3.2	10	16	78	33	85	85	62	23	1.3	.4	.2
4	.1	9.8	16	75	29	81	79	51	21	1.3	.3	.2
5	.1	10	17	77	30	76	78	53	26	1.1	.3	.2
6	.1	11	17	76	31	73	85	44	51	.9	.2	.2
7	.1	12	17	71	31	72	92	37	20	.8	.3	.4
8	.1	11	a17	66	29	70	103	53	23	.7	.4	1.4
9	1.3	11	a17	60	29	70	109	62	12	.6	.3	.9
10	5.1	12	18	56	29	75	103	56	12	.7	.2	.7
11	2.5	12	18	50	29	79	99	54	11	.7	.2	.7
12	.1	11	18	44	28	82	119	54	5.3	.7	.2	.6
13	.1	11	b15	43	26	88	148	50	3.7	.6	.2	.6
14	.1	12	b12	41	26	87	178	42	2.6	.6	.2	.6
15	.1	12	b13	40	27	85	188	33	.9	.8	.2	.6
16	.1	12	b13	38	28	83	191	28	1.1	.7	.2	.8
17	.2	13	b12	36	29	79	212	21	2.7	.8	.2	.9
18	2.5	13	a10	34	31	77	214	21	4.9	.6	.2	.7
19	3.0	14	9.5	33	33	79	266	6.5	1.4	.6	.2	.7
20	3.5	14	12	32	34	82	227	2.0	1.2	.5	.2	.8
21	4.4	14	15	31	35	83	189	1.2	1.2	.5	.2	1.1
22	5.1	14	17	33	37	85	144	1.5	.9	.5	.2	.6
23	6.1	14	17	36	38	88	130	1.0	.9	.4	.2	.6
24	6.4	13	19	37	41	88	127	1.2	.7	.4	.2	.6
25	5.6	14	a21	40	51	84	139	2.0	.9	.4	.2	.6
26	5.8	14	25	41	61	81	159	1.5	.9	.4	.2	1.5
27	6.4	14	27	40	64	102	138	18	1.1	.4	.2	4.0
28	6.9	14	42	40	82	119	120	39	2.7	.4	.2	4.0
29	6.6	14	180	39	-	120	115	33	5.2	.4	.2	4.4
30	7.2	15	136	37	-	116	103	31	2.0	.4	.2	3.7
31	8.3	-	106	37	-	108	-	24	-	.3	.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	101.0	8.3	0.1	3.26	200
November	370.8	15	9.8	12.4	735
December	904.5	180	9.5	29.2	1,790
Calendar year 1945	18,038.6	306	.1	49.4	35,770
January	1,529	89	31	49.3	3,030
February	1,010	82	26	36.1	2,000
March	2,679	120	70	86.4	5,310
April	4,131	266	78	138	8,190
May	1,029.9	79	1.0	33.2	2,040
June	261.3	31	.7	8.71	518
July	21.0	1.5	.3	.68	42
August	7.2	.4	.2	.23	14
September	32.7	4.4	.2	1.09	65
Water year 1945-46	12,077.4	266	.1	33.1	23,930

a No gage-height record; discharge computed on basis of records for Butter Creek near Pine City.
b Stage-discharge relation affected by ice.

Butter Creek near Pine City, Oreg.
(Called North Fork Butter Creek on some maps)

Location.- Water-stage recorder, lat. 45°33', long. 119°18', in S½ sec. 22, T. 1 N., R. 28 E., half a mile below Mattlock Canyon, 6 miles southeast of settlement of Pine City, and 20 miles south of Hermiston.

Records available.- October 1945 to September 1946 in reports of Geological Survey. March 1921 to April 1928 at site half a mile south of Pine City, and May 1928 to September 1936 at present site (incomplete), in reports of State engineer; October 1936 to September 1945 (unpublished) in files of State engineer.

Average discharge.- 14 years (1929-30, 1931-32, 1933-41, 1942-46), 17.5 second-feet.

Extremes.- Maximum discharge during year, 399 second-feet Dec. 29 (gage height, 3.86 feet); no flow part of Oct. 10.
1921-46: Maximum discharge, 1,600 second-feet Jan. 28, 1942 (gage height, 7.91 feet), from rating curve extended above 300 second-feet; no flow at times.

Remarks.- Records good except those below 5 second-feet, which are fair, and those for periods of no gage-height record, which are poor. No regulation. Small diversions above station for irrigation; for about 20 days each year not over 30 second-feet may be diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River Basin.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	2.9	6.5	63	19	80	68	56	20	5.8		
2	.9	2.9	6.2	54	18	71	62	52	18	4.6		
3	.9	2.9	5.2	58	18	66	58	51	16	4.2		a0.9
4		3.1	5.9	51	15	58	57	54	16	4.0	a0.8	
5		3.1	5.9	55	15	53	59	56	14	4.0		
6	a.6	3.6	6.2	51	17	60	74	47	16	3.8		h1.0
7		3.8	7.2	46	16	59	74	45	17	3.6	h.7	1.5
8		3.8	6.5	40	15	54	78	55	14	3.3		1.2
9		3.8	6.2	34	14	58	74	60	12	3.8		
10	h.4	4.2	5.2	32	15	65	68	56	11	5.2		
11	a.6	4.2	6.2	28	15	66	68	50	8.8	5.2		
12	.8	4.6	6.2	22	14	63	84	45	8.0	4.4		
13	.9	4.0	4.9	25	14	81	90	37	7.3	4.0		
14	.9	4.0	4.0	23	14	67	95	33	8.0	3.8		a1.1
15	1.2	4.2	4.4	21	14	61	97	30	12	3.8	a.6	
16	1.8	4.2	4.6	20	14	55	98	26	12	4.0		
17	1.8	4.2	4.2	18	14	51	102	22	12	2.9		
18	1.8	4.6	3.8	18	15	56	106	19	9.9	3.1		h1.0
19	1.9	5.2	3.8	17	15	61	108	17	8.4	2.7		
20	1.9	4.6	4.2	17	16	72	100	17	7.6	2.7		
21	2.1	4.4	4.6	16	17	108	86	18	6.7	2.4	h.6	
22	1.9	4.2	4.9	17	19	107	74	20	6.4	2.1		
23	1.9	4.2	5.9	21	20	96	69	21	7.0	1.9		a1.1
24	2.1	4.2	8.2	23	31	86	69	22	7.3	1.8		
25	2.1	4.6	8.6	28	65	77	74	24	7.3	1.5		
26	2.1	4.6	9.9	26	61	72	86	21	7.0	1.2	a.7	
27	2.1	4.9	12	25	64	102	81	26	6.7	1.2		
28	2.2	4.9	59	23	127	92	73	31	18	1.1		
29	2.4	5.9	250	21	-	90	69	26	7.3	a1.1		
30	2.5	6.5	121	18	-	83	66	23	6.7	a1.0		1.2
31	2.9	-	81	20	-	76	-	21	-	a1.0		-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	44.6	2.9	-	1.44	88
November	126.3	6.5	2.9	4.21	251
December	672.4	250	3.8	21.7	1,330
Calendar year 1945	9,154.e	250	-	25.1	18,160
January	931	63	16	30.0	1,850
February	711	127	14	25.4	1,410
March	2,246	108	51	72.5	4,450
April	2,367	108	57	78.9	4,690
May	1,081	60	17	34.9	2,140
June	328.4	20	6.4	10.9	651
July	95.2	5.8	1.0	3.07	189
August	20.9	-	-	.67	41
September	32.4	-	-	1.08	64
Water year 1945-46	8,656.2	250	-	23.7	17,150

a No gage-height record; discharge interpolated.
h Computed from staff-gage reading.

Principal diversions from Umatilla River between Pendleton and Umatilla, Oreg.

The following canals divert water from Umatilla River between Pendleton and Umatilla: Furnish Canal, from right bank of Umatilla River in sec. 36, T. 3 N., R. 29 E. Umatilla project feed canal, from right bank of Umatilla River in SW¼ sec. 22, T. 3 N., R. 29 E., to feed Cold Springs Reservoir of Bureau of Reclamation. Western Land Canal, from left bank of Umatilla River in NE¼ sec. 21, T. 3 N., R. 29 E.; gage is 1 mile downstream from intake. Allen Canal, from right bank of Western Land Canal, half a mile downstream from head gate of that canal. Maxwell Canal, from right bank of Umatilla River in SW¼ sec. 28, T. 4 N., R. 28 E.; at times it receives water from Cold Springs Reservoir. West Division main canal, from left bank of Umatilla River in SW¼ sec. 28, T. 5 N., R. 28 E. Brownell Canal, from right bank of Umatilla River 2 miles below West Division main canal diversion and 1½ miles above mouth of Umatilla River.

Water diverted by all these canals is used for irrigation of lands on both sides of Umatilla River near and below Echo, except that diverted by West Division main canal, which is applied to lands along Columbia River in vicinity of Irrigon.

Several smaller canals also divert water between Pendleton and Umatilla, but no records for them were obtained.

Records of monthly discharge of the canals, published as a group, are available from March 1926 to September 1946; records for some of the canals published separately prior to 1926.

Diversions, in acre-feet, water year October 1945 to September 1946

Month	Furnish Canal	Umatilla project feed canal	Western Land Canal	Allen Canal	Maxwell Canal	West Division main canal	Brownell Canal
October	0	167	-	920	a60	9,910	11
November	0	7,510	-	b19	-	0	0
December	0	7,430	-	-	-	0	0
January	0	12,890	-	-	-	0	0
February	0	11,710	-	-	-	0	0
March	617	9,010	c4,220	-	d1,360	2,880	0
April	5,890	8,850	10,670	e1,160	3,930	10,030	906
May	8,320	15,090	12,730	923	4,660	12,010	1,260
June	8,370	4,670	9,820	1,280	3,720	10,720	929
July	7,160	0	13,400	858	2,900	9,730	1,340
August	9,070	0	10,690	913	1,830	11,530	1,310
September	2,270	0	6,470	1,270	1,730	8,940	1,130
Water year 1945-46	41,697	75,130	68,000	-	-	75,750	6,890

a Oct. 1-7.
b Nov. 1-7.
c Mar. 6-31.
d Mar. 7-31.
e Apr. 4-30.

Note.- No gage-height record for months of little or no flow and for a few days and short periods at other times. Discharge for some periods interpolated, or computed on basis of information furnished by watermaster.

John Day River at Prairie City, Oreg.

Location.- Water-stage recorder, lat. 44°27', long. 118°43', in NE¼ sec. 10, T. 13 S., R. 33 E., 600 feet upstream from power plant and outlet of Prairie power canal, a third of a mile below Dixie Creek, and three-quarters of a mile southwest of Prairie City. Datum of gage is 3,496.99 feet above mean sea level, datum of 1929.
Drainage area.- 231 square miles.
Records available.- October 1926 to September 1946. October 1916 to September 1917 (gage heights only) and March 1925 to September 1926 at site below outlet of Prairie power canal.
Average discharge.- 21 years, 107 second-feet, including flow of Prairie power canal.
Extremes.- Maximum discharge during year, 995 second-feet Dec. 28 (gage height, 4.57 feet); minimum, 7.0 second-feet Aug. 24.
1926-46: Maximum discharge observed, 1,550 second-feet Mar. 19, 1932 (gage height, 4.7 feet), from rating curve extended above 500 second-feet; minimum, 2 second-feet Dec. 8, 21, 22, 1932, Aug. 10, 1934.
Remarks.- Records good except those above 400 second-feet, which are fair. Diversions above station for irrigation and for power. (See p. 39 for records for Prairie power canal at Prairie City.)

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30			
1.4	9	1.8	45	2.7	238	1.5	9.5	2.2	111
1.5	15	2.0	76	3.0	333	1.6	16	2.4	160
1.6	25	2.2	115	3.4	480	1.7	24	2.7	240
1.7	33	2.4	160			1.8	35	3.0	335
						2.0	67	3.4	480

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	11	26	135	30	210	148	228	279	51	a12	17
2	12	20	21	121	30	190	138	205	249	109	a12	18
3	12	21	21	113	28	162	125	198	231	80	a12	19
4	13	19	20	108	20	135	123	205	225	62	a10	22
5	14	14	18	104	28	140	133	234	228	51	a10	22
6	14	14	18	90	38	148	138	261	249	36	12	25
7	11	13	23	88	28	121	138	255	213	35	13	45
8	8.0	13	19	82	22	121	158	288	190	35	14	28
9	8.5	13	13	56	30	130	158	310	172	71	11	24
10	10	17	21	71	23	158	138	300	150	46	11	22
11	11	18	17	58	22	175	128	273	125	34	10	20
12	13	20	13	39	21	208	150	248	118	30	9.5	19
13	15	24	12	58	22	240	198	228	97	25	9.0	33
14	17	22	13	67	22	180	228	208	102	19	9.0	35
15	16	25	11	39	22	182	258	198	106	19	9.5	33
16	16	23	13	49	22	138	285	185	133	18	9.5	18
17	20	22	21	43	22	123	349	172	155	15	9.5	15
18	19	22	19	30	22	130	405	180	118	13	8.5	13
19	14	39	14	26	32	138	436	192	86	13	8.5	15
20	16	26	15	28	73	150	402	219	60	11	8.5	12
21	14	19	26	24	93	142	332	219	63	10	8.5	11
22	14	17	43	39	102	140	273	243	123	9.5	a8.0	11
23	13	17	45	34	145	130	248	304	168	11	7.5	11
24	13	19	44	74	205	135	249	255	182	9.5	8.5	10
25	12	28	41	54	210	118	297	249	116	9.0	15	10
26	12	28	39	34	165	118	388	335	88	9.0	11	9.5
27	11	52	75	33	422	155	370	430	63	10	10	9.0
28	12	45	483	34	300	182	310	452	67	9.5	11	8.5
29	11	38	477	32	-	198	294	416	95	9.5	13	8.0
30	11	28	222	28	-	178	276	349	67	a12	18	7.5
31	11	-	165	30	-	182	-	304	-	-	18	-

Month	River only				River and Prairie power canal			
	Maximum	Minimum	Mean	Runoff in acre-feet	Maximum	Minimum	Mean	Runoff in acre-feet
October	20	8.0	13.1	806	75	42	58.7	3,490
November	52	11	22.8	1,360	123	76	90.1	5,360
December	483	11	64.8	3,980	561	34	127	7,820
Calendar year 1945	483	7.0	54.5	39,450	561	18	110	79,750
January	135	24	58.7	3,610	193	86	112	6,900
February	422	20	78.3	4,350	476	70	142	7,870
March	240	118	155	9,550	306	177	220	13,500
April	436	123	242	14,420	502	191	309	18,410
May	452	172	263	16,150	520	236	329	20,230
June	279	60	143	8,520	340	129	211	12,580
July	109	9.0	28.1	1,730	181	37	78.1	4,800
August	18	7.5	10.9	668	72	22	36.0	2,210
September	45	7.5	18.4	1,090	114	54	68.5	4,080
Water year 1945-46	483	7.5	91.5	66,230	561	22	148	107,200

a No gage-height record; discharge computed on basis of records for stations on Strawberry Creek and Prairie power canal.

John Day River at Picture Gorge, near Dayville, Oreg.

Location.- Water-stage recorder and concrete control, lat. 44°31'20", long. 119°37'30", in sec. 20, T. 12 S., R. 26 E., on John Day Highway, 0.7 mile upstream from Rock Creek bridge and 7 miles northwest of Dayville. Datum of gage is 2,232.10 feet above mean sea level, datum of 1929.

Drainage area.- 1,640 square miles.

Records available.- April 1926 to September 1946.

Average discharge.- 20 years, 391 second-feet.

Extremes.- Maximum discharge during year, 4,890 second-feet Dec. 29 (gage height, 12.48 feet); minimum, 14 second-feet Aug. 24, 25 (gage height, 1.33 feet).
1926-46: Maximum discharge, 6,000 second-feet Mar. 19, 1932 (gage height, 14.0 feet), from rating curve extended above 2,300 second-feet; minimum, 1 second-foot several days in August and September 1930, Aug. 8, 9, 1936.

Remarks.- Records good. Many diversions above station for irrigation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.4	19	2.8	184	8.0	1,000
1.5	28	3.2	250	7.0	1,395
1.7	48	3.6	331	8.0	1,870
1.9	70	4.0	418	9.0	2,430
2.1	94	4.5	538	10.0	3,060
2.4	130	5.0	675	11.0	3,760

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	169	323	1,110	403	1,350	1,240	1,360	1,020	367	31	102
2	71	169	293	962	396	1,170	1,160	1,190	920	383	31	123
3	69	177	279	906	374	1,040	1,120	1,100	856	344	31	122
4	64	181	277	842	300	906	1,070	1,080	804	304	29	122
5	68	177	269	860	316	839	1,090	1,130	756	275	27	129
6	67	180	261	747	378	898	1,190	1,190	768	252	28	134
7	66	180	320	675	378	874	1,180	1,150	756	230	28	150
8	70	181	310	614	346	825	1,230	1,270	693	222	30	178
9	72	180	260	516	323	888	1,270	1,330	608	225	29	171
10	70	184	250	520	344	1,020	1,210	1,250	569	234	29	162
11	76	187	273	520	339	1,150	1,150	1,160	526	215	28	147
12	74	201	245	418	316	1,200	1,220	1,080	486	201	30	135
13	72	205	205	381	304	1,720	1,500	1,040	462	187	27	126
14	75	207	178	425	308	1,460	1,740	985	436	173	24	118
15	80	212	178	409	327	1,270	1,900	906	430	164	19	117
16	78	218	204	418	327	1,120	2,010	846	423	157	18	118
17	88	218	252	414	327	1,050	2,230	801	483	150	18	125
18	105	215	222	392	329	1,070	2,520	750	476	133	18	129
19	119	263	202	378	337	1,120	2,640	759	425	108	18	128
20	136	279	210	381	425	1,130	2,510	795	387	99	18	128
21	142	237	261	381	556	1,110	2,200	853	363	83	18	120
22	146	222	283	596	590	1,120	1,880	878	389	70	18	119
23	146	227	329	434	609	1,070	1,640	1,060	427	54	16	120
24	147	227	370	439	759	1,040	1,580	1,080	506	47	15	112
25	148	248	381	678	850	990	1,700	1,000	481	44	17	107
26	152	281	383	481	765	979	1,990	1,020	432	42	17	106
27	153	337	409	425	1,170	1,240	2,000	1,340	392	38	19	102
28	155	457	2,120	407	1,820	1,440	1,760	1,520	378	34	19	94
29	162	446	3,930	398	-	1,570	1,600	1,440	409	32	22	94
30	163	381	2,350	385	-	1,480	1,540	1,270	394	31	28	92
31	166	-	1,480	396	-	1,360	-	1,110	-	33	82	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,276	166	64	106	6,500
November	7,046	457	169	235	13,980
December	17,307	3,930	178	558	34,330
Calendar year 1945	165,547	3,930	27	454	328,400
January	16,708	1,110	378	539	33,140
February	14,016	1,820	300	501	27,800
March	35,499	1,720	825	1,145	70,410
April	49,050	2,640	1,070	1,635	97,290
May	33,723	1,520	750	1,088	66,890
June	16,451	1,020	363	548	32,630
July	4,911	367	31	158	9,740
August	782	82	15	25.2	1,550
September	3,728	178	92	124	7,390
Water year 1945-46	202,497	3,930	15	555	401,600

Peak discharge.- Dec. 29 (5:30 a.m.) 4,890 sec.-ft.; Jan. 25 (5:30 a.m.) 798 sec.-ft.; Feb. 28 (3 a.m.) 2,060 sec.-ft.

John Day River at Service Creek, Oreg.

Location.- Water-stage recorder, lat. 44°48', long. 120°00', in NE¼ sec. 18, T. 9 S., R. 23 E., a quarter of a mile downstream from Service Creek and three-quarters of a mile southwest of Service Creek post office. Datum of gage is 1,635.83 feet above mean sea level, datum of 1929.

Drainage area.- 5,090 square miles.

Records available.- October 1929 to September 1946 in reports of Geological Survey. March 1925 to September 1926 and October 1929 to September 1936 in reports of State engineer.

Average discharge.- 18 years (1925-26, 1929-46), 1,496 second-feet.

Extremes.- Maximum discharge during year, 18,600 second-feet Dec. 29 (gage height, 14.1 feet); minimum, 148 second-feet Aug. 29-31 (gage height, 1.05 feet).
1929-46: Maximum discharge, 28,900 second-feet Mar. 19, 1932 (gage height, 16.75 feet), from rating curve extended above 11,000 second-feet; minimum, 20 second-feet Sept. 6, 1931.

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
1.2	183	2.7	690	5.6	2,760	1.1	156	3.3	1,025	7.5	5,120
1.4	227	3.2	950	6.8	4,090	1.4	215	4.0	1,490	9.0	7,440
1.8	335	3.8	1,300	8.0	5,720	1.8	320	4.8	2,100	10.5	10,200
2.2	475	4.6	1,870			2.2	465	5.8	3,040	12.5	14,600
						2.7	700	6.0	3,260		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	326	1,130	5,400	1,210	5,510	4,620	6,490	3,950	1,290	204	204
2	185	335	835	4,290	1,200	4,620	4,370	5,880	3,640	1,180	200	248
3	187	353	740	4,190	1,150	4,240	4,140	5,610	3,420	1,110	204	362
4	179	a370	765	3,820	1,020	3,670	4,030	5,890	3,340	1,020	190	266
5	172	a400	825	3,670	860	3,300	4,140	6,620	3,180	932	178	260
6	174	396	775	3,360	1,040	3,700	4,640	6,840	3,160	838	167	266
7	174	390	820	2,800	1,110	3,940	4,920	6,470	3,140	761	163	296
8	174	396	1,030	2,430	1,040	3,600	5,090	6,540	2,730	730	160	358
9	178	382	868	2,040	926	3,920	5,230	7,080	2,450	740	163	441
10	179	382	710	1,710	976	4,450	4,750	6,730	2,290	926	161	418
11	179	379	686	1,770	981	4,720	4,420	6,250	2,120	910	158	362
12	183	421	705	1,520	954	4,860	4,780	5,710	1,980	756	154	320
13	179	447	535	1,210	915	7,080	5,950	5,300	2,000	685	154	290
14	170	439	379	1,220	860	5,780	6,980	4,900	2,000	630	154	266
15	174	432	311	1,220	915	4,850	7,580	4,560	1,980	582	154	256
16	179	455	260	1,160	932	4,360	7,970	4,240	1,860	546	154	263
17	176	487	347	1,250	920	3,830	8,630	4,070	1,810	510	153	268
18	179	495	407	1,190	942	3,820	9,850	4,020	1,890	483	153	282
19	194	507	368	1,100	942	4,190	10,600	3,950	1,660	457	153	299
20	222	578	359	1,090	1,010	4,240	10,200	3,850	1,520	404	153	296
21	252	551	475	1,140	1,430	4,210	8,730	3,720	1,400	383	153	282
22	265	463	622	1,260	1,600	4,410	7,360	3,530	1,340	352	151	263
23	283	400	705	1,340	1,600	4,260	6,500	3,840	1,490	314	150	253
24	281	421	a900	1,350	1,930	3,970	6,280	4,060	1,620	282	151	253
25	283	511	a1,000	1,690	2,590	3,700	7,050	3,710	1,760	260	151	246
26	286	627	a1,200	1,560	2,770	3,490	9,220	3,660	1,580	253	150	231
27	292	780	a1,400	1,300	3,100	4,720	9,530	4,540	1,380	243	153	224
28	300	1,620	a7,000	1,220	7,340	5,570	8,080	5,880	1,290	231	163	220
29	305	1,890	14,300	1,190	-	6,060	7,460	5,540	1,320	222	150	213
30	314	1,540	9,560	1,150	-	5,770	7,270	4,860	1,490	229	148	211
31	329	-	6,840	1,140	-	5,090	-	4,300	-	217	148	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,810	329	170	220	13,510
November	17,173	1,890	326	572	34,060
December	56,857	14,300	260	1,834	112,800
Calendar year 1945	644,958	14,300	105	1,767	1,279,000
January	60,780	5,400	1,090	1,961	120,600
February	42,263	7,340	860	1,509	83,830
March	139,930	7,080	3,300	4,514	277,500
April	200,370	10,600	4,030	6,679	397,400
May	158,640	7,080	3,530	5,117	314,700
June	64,810	3,950	1,290	2,160	128,500
July	18,476	1,290	217	596	36,650
August	4,998	204	148	161	9,910
September	8,417	441	204	281	16,690
Water year 1945-46	779,524	14,300	148	2,136	1,546,000

a No gage-height record; discharge computed on basis of records for upstream and downstream stations.

John Day River at McDonald Ferry, Oreg.

Location.- Water-stage recorder, lat. 45°35', long. 120°25', in NW¼ sec. 11, T. 1 N., R. 19 E., at McDonald Ferry, half a mile downstream from Rock Creek and 10 miles east of Klondike. Datum of gage is 392.27 feet above mean sea level, datum of 1929

Drainage area.- 7,580 square miles.

Records available.- December 1904 to September 1946.

Average discharge.- 41 years, 1,907 second-feet.

Extremes.- Maximum discharge during year, 17,300 second-feet Dec. 30 (gage height, 8.67 feet); minimum, 107 second-feet Aug. 29 (gage height, 1.22 feet).
1904-46: Maximum discharge, 24,900 second-feet Mar. 20, 1932 (gage height, 10.6 feet), from rating curve extended above 14,000 second-feet; minimum, 4 second-feet Aug. 31, 1931 (gage height, 0.68 foot).
Maximum stage known, 12.8 feet, probably occurred in 1894 (discharge, 33,000 second-feet, estimated).

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

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

1.3	133	2.1	585	3.5	2,260	5.8	7,470
1.4	171	2.4	840	4.0	3,130	6.5	9,620
1.6	262	2.7	1,160	4.6	4,360	7.2	11,900
1.8	375	3.0	1,530	5.2	5,810	8.0	14,800

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	184	322	1,820	6,810	1,280	7,680	5,280	6,830	4,270	1,240	219	183
2	188	322	1,380	4,980	1,320	5,650	4,800	6,020	3,890	1,240	214	184
3	192	328	1,080	4,320	1,330	4,750	4,590	5,400	3,580	1,090	205	156
4	197	328	870	*4,340	1,280	4,380	4,340	5,420	3,360	1,030	197	167
5	192	346	795	4,380	1,220	3,870	4,140	5,650	3,280	973	180	287
6	184	351	813	3,950	1,120	3,480	4,230	8,450	3,110	900	184	322
7	180	408	870	3,560	1,040	3,720	4,680	6,560	3,040	813	188	278
8	175	408	822	3,000	1,210	4,100	4,990	6,180	3,090	788	180	262
9	175	394	940	2,710	1,200	3,720	5,160	6,370	2,690	718	167	262
10	171	401	1,010	2,400	1,140	4,040	5,230	6,950	2,420	865	180	284
11	171	401	880	2,040	1,060	4,540	4,800	6,420	2,230	665	148	351
12	171	401	759	1,980	1,090	4,870	4,500	5,860	2,060	813	141	401
13	171	388	724	1,830	1,080	5,300	4,870	5,580	1,920	786	144	389
14	175	401	682	1,560	1,040	7,470	6,040	5,040	1,880	682	144	528
15	171	440	525	1,400	1,030	6,020	7,060	4,700	1,830	633	141	300
16	175	434	461	1,410	995	5,060	7,590	4,380	1,780	578	133	284
17	171	440	b350	1,400	1,030	4,590	8,040	4,060	1,700	532	133	287
18	183	447	b270	1,360	1,040	4,060	8,710	3,910	1,580	498	130	257
19	171	496	b340	1,380	1,030	4,060	9,590	3,870	1,820	488	128	262
20	175	503	b400	1,290	1,050	4,450	10,300	3,950	1,550	447	123	282
21	175	496	b370	1,240	1,070	4,570	9,940	3,870	1,380	420	120	268
22	184	548	570	1,260	1,200	4,540	8,590	3,740	1,280	408	120	273
23	214	555	633	1,410	1,610	4,730	7,180	3,580	1,220	369	120	267
24	248	489	724	1,490	1,630	4,590	8,310	3,820	1,230	351	120	282
25	262	440	860	1,650	1,800	4,210	6,150	4,080	1,340	322	118	257
26	273	427	951	1,690	2,450	3,970	8,920	3,800	1,550	300	113	248
27	273	503	1,040	1,880	2,890	3,800	9,020	3,720	1,430	273	113	243
28	278	525	1,530	1,580	3,320	4,870	9,110	4,480	1,330	287	118	256
29	289	1,130	7,900	1,430	-	5,890	7,890	5,940	1,220	257	110	233
30	305	1,840	14,800	1,340	-	6,290	7,120	5,500	1,170	248	120	228
31	316	-	10,100	1,300	-	5,970	-	4,480	-	228	144	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,369	318	183	205	12,630
November	14,912	1,840	322	497	29,580
December	55,269	14,800	270	1,783	109,600
Calendar year 1945	665,937	14,800	9*	1,824	1,321,000
January	72,130	6,610	1,240	2,327	143,100
February	38,555	3,320	995	1,377	76,470
March	149,240	7,680	3,480	4,814	298,000
April	197,170	10,300	4,140	6,572	391,100
May	156,750	6,950	3,580	5,056	310,900
June	63,950	4,270	1,170	2,132	126,800
July	18,978	1,240	228	612	37,640
August	4,589	219	110	147	9,080
September	7,937	401	156	265	15,740
Water year 1945-46	785,829	14,800	110	2,153	1,559,000

Peak discharge.- Dec. 30 (11 a.m.) 17,300 sec.-ft.; Mar. 1 (7 a.m.) 8,770 sec.-ft.; Mar. 14 (9 a.m.) 8,190 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Prairie power canal at Prairie City, Oreg.

Location.- Staff gage, lat. 44°27', long. 118°42', in sec. 11, T. 13 S., R. 33 E., upstream from county road bridge over canal and 1 mile south of Prairie City.

Records available.- May 1925 to September 1946.

Average discharge.- 21 years, 47.8 second-feet.

Extremes.- Maximum discharge observed during year, 79 second-feet July 8 (gage height, 3.20 feet); no flow parts of Feb. 4, Sept. 13-15.
1925-46: Maximum discharge, 93 second-feet Jan. 21, 1943 (gage height, 2.90 feet); no flow at times.

Remarks.- Records fair. Staff gage read twice daily. Canal diverts from John Day River in SE¼ sec. 7, T. 13 S., R. 34 E. Water is used by power plant at Prairie City and is returned to river below station on John Day River at Prairie City.

Cooperation.- Gage read by employee of West Coast Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	66	67	58	71	59	68	68	61	a72	25	51
2	34	72	65	59	71	61	69	68	65	a72	25	48
3	34	64	66	58	64	58	69	68	65	a72	25	52
4	34	60	68	58	58	62	68	68	65	a72	30	57
5	34	71	68	58	73	64	68	68	65	a72	30	57
6	34	71	68	54	66	62	68	68	72	a72	28	56
7	34	71	66	30	69	62	68	68	66	72	28	69
8	34	71	66	30	48	65	68	68	66	75	26	59
9	34	71	46	34	46	65	67	68	64	65	26	57
10	34	71	66	60	65	65	68	66	68	62	25	54
11	34	71	68	42	65	66	68	66	68	50	25	54
12	34	71	46	27	66	67	68	65	70	46	25	54
13	37	65	33	40	64	66	68	65	70	45	27	22
14	37	65	34	36	66	64	68	65	69	42	27	22
15	37	65	23	53	68	64	66	65	70	42	27	23
16	40	65	71	54	64	48	66	65	70	42	27	51
17	40	64	72	50	62	64	66	64	69	42	26	51
18	39	65	30	54	62	65	66	66	70	41	21	51
19	50	65	42	56	62	65	66	69	70	41	17	51
20	52	64	73	54	66	65	66	68	70	40	16	51
21	54	57	73	64	65	65	65	68	66	40	15	51
22	54	62	76	71	62	65	65	70	68	40	14	52
23	54	67	75	68	62	65	65	70	70	40	14	53
24	53	68	73	73	62	64	65	80	70	40	13	54
25	53	68	75	72	66	65	65	69	70	40	13	52
26	53	71	72	40	64	59	68	66	62	40	14	52
27	56	71	78	49	54	71	65	68	70	34	20	52
28	57	69	78	50	59	71	68	68	66	34	26	51
29	57	68	72	64	-	70	70	61	70	34	41	51
30	58	68	65	71	-	68	68	62	70	34	48	46
31	64	-	62	71	-	68	-	59	-	25	54	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,353	64	34	43.6	2,680
November	2,017	72	57	67.2	4,000
December	1,937	78	23	62.5	3,840
Calendar year 1945	20,327	83	6	55.7	40,300
January	1,658	73	27	53.5	3,290
February	1,770	73	46	63.2	3,510
March	1,988	71	48	64.1	3,940
April	2,013	70	65	67.1	3,990
May	2,057	70	59	66.4	4,080
June	2,035	72	61	67.8	4,040
July	1,538	75	25	49.6	3,050
August	778	54	13	25.1	1,540
September	1,504	69	22	50.1	2,980
Water year 1945-46	20,648	78	13	56.6	40,940

a No gage-height record; discharge computed on basis of records for John Day River at Prairie City.

Strawberry Creek above Slide Creek, near Prairie City, Oreg.

Location.- Water-stage recorder, lat. 44°20', long. 118°39', in SW¼ sec. 20, T. 14 S., R. 34 E., 100 feet upstream from Slide Creek and 8½ miles south of Prairie City.

Records available.- October 1930 to September 1946.

Average discharge.- 16 years, 11.5 second-feet.

Extremes.- Maximum discharge during year, 87 second-feet May 28 (gage height, 2.08 feet); minimum, 2.4 second-feet Dec. 17-27 (gage height, 1.04 feet).
1930-46: Maximum discharge, 150 second-feet June 9, 1933 (gage height, 2.44 feet), from rating curve extended above 85 second-feet; minimum, 1.4 second-feet several days in 1931, 1934, 1935, 1937, and on Nov. 19, 1939.

Remarks.- Records fair except those for December, which are poor. No diversion above station; some natural regulation by Strawberry Lake.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	2.8	3.0	5.9	3.3	3.3	4.8	29	62	36	12	6.3
2	3.3	3.0	3.0	5.9	3.3	3.3	4.5	30	62	37	12	5.9
3	3.0	2.8	3.0	5.5	3.3	3.3	4.5	34	63	38	11	5.9
4	3.0	2.8	3.0	5.5	3.3	3.0	4.2	40	66	39	11	5.9
5	3.0	2.8	3.0	5.1	3.3	3.0	4.2	48	71	38	11	5.9
6	3.0	2.8	3.0	4.8	3.0	3.0	4.2	51	72	37	10	5.9
7	2.8	2.8	3.0	4.8	3.0	3.0	4.2	57	66	36	10	6.3
8	2.8	2.8	3.0	4.8	3.0	3.0	4.5	59	65	35	9.8	5.9
9	2.8	2.8	b3.0	4.5	3.0	3.0	4.5	59	62	31	9.8	5.5
10	2.8	3.0	2.8	4.5	3.0	3.3	4.5	59	61	30	9.3	5.5
11	2.8	3.0	2.6	4.5	3.0	3.3	4.5	57	60	28	9.3	5.5
12	2.8	3.0	b2.6	4.5	3.0	3.6	4.8	58	59	27	8.9	5.1
13	2.8	3.0	*b2.6	4.2	3.0	3.3	6.3	56	59	25	8.9	5.1
14	2.8	3.3	b2.6	*4.2	3.0	3.3	7.9	54	59	24	8.9	5.1
15	2.8	3.3	b2.8	4.2	3.0	3.3	9.3	54	58	22	8.4	4.8
16	2.8	3.3	2.6	4.2	3.0	3.3	12	56	53	21	8.4	4.8
17	2.8	3.3	2.4	4.2	3.0	3.3	15	59	49	20	8.4	4.8
18	2.8	3.3	2.4	3.9	3.0	3.3	18	63	45	19	7.9	4.5
19	3.0	3.3	2.4	3.9	3.0	3.3	20	68	43	19	7.9	4.5
20	3.0	3.3	2.4	3.9	3.0	3.3	20	71	45	18	7.9	4.5
21	2.8	3.0	2.6	3.9	3.0	3.3	18	71	48	17	7.9	4.5
22	2.8	3.0	2.4	3.9	3.0	3.0	16	69	52	16	7.5	4.5
23	2.8	3.0	2.4	3.9	3.0	3.0	16	67	51	16	7.5	4.5
24	2.8	3.0	2.4	4.2	3.0	3.0	18	86	48	16	7.5	4.5
25	2.8	3.0	2.4	3.9	3.0	3.0	26	63	44	14	7.1	4.5
26	2.8	3.3	2.4	b3.6	3.0	3.3	36	63	41	14	6.7	4.2
27	2.8	3.3	3.0	3.6	3.6	3.9	32	71	39	14	6.7	4.2
28	2.8	3.3	6.7	3.6	3.3	4.8	29	83	37	14	6.7	4.2
29	2.8	3.3	7.9	3.6	-	5.1	30	72	36	13	7.1	4.2
30	3.3	3.0	7.1	3.3	-	5.1	29	63	35	13	6.3	3.9
31	2.8	-	6.3	3.3	-	5.1	-	63	-	12	6.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	89.5	3.3	2.8	2.89	178
November	91.7	3.3	2.8	3.06	182
December	100.8	7.9	2.4	3.25	200
Calendar year 1945	4,570.8	68	2.2	12.5	9,070
January	133.8	5.9	3.3	4.32	265
February	86.4	3.6	3.0	3.09	171
March	107.1	5.1	3.0	3.45	212
April	411.9	36	4.2	13.7	817
May	1,811	83	29	58.4	3,590
June	1,611	72	35	53.7	3,200
July	739	39	12	23.8	1,470
August	288.1	12	6.3	8.65	532
September	150.9	8.3	3.9	5.03	299
Water year 1945-46	5,601.2	83	2.4	15.3	11,120

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

North Fork John Day River near Dale, Oreg.

Location.- Water-stage recorder, lat. 45°00', long. 118°57', in SE¼ sec. 35, T. 6 S., R. 31 E., three-eighths of a mile downstream from Desolation Creek and 1½ miles northeast of Dale. Datum of gage is 2,775.85 feet above mean sea level, datum of 1929.

Drainage area.- 525 square miles.

Records available.- October 1929 to September 1946.

Average discharge.- 17 years, 340 second-feet.

Extremes.- Maximum discharge during year, 3,860 second-feet Apr. 26 (gage height, 7.67 feet); minimum daily, 20 second-feet Dec. 15.
1929-46: Maximum discharge, 4,990 second-feet May 14, 1932 (gage height, 8.4 feet); minimum, 6 second-feet Nov. 3, 1936 (gage height, 1.40 feet).

Remarks.- Records good except those for periods of ice effect, which are poor. Several small diversions above station for irrigation and mining cause diurnal fluctuation at low flow.

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

1.8	25	2.9	202	5.0	1,200
2.0	40	3.2	295	5.7	1,720
2.2	62	3.6	450	6.5	2,460
2.4	94	4.0	640	7.4	3,500
2.6	131	4.5	905		

Discharge, in second-fset, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	76	80	346	120	245	358	1,710	1,420	386	108	79
2	50	87	85	292	120	227	346	1,700	1,360	394	101	71
3	49	131	90	251	110	213	334	2,020	1,370	350	96	66
4	48	105	110	219	80	189	323	2,600	1,330	316	91	68
5	49	92	101	213	110	194	342	2,990	1,290	288	87	80
6	49	92	98	184	120	197	382	2,660	1,280	267	84	89
7	48	74	101	164	115	189	398	2,530	1,070	267	84	135
8	47	68	86	154	100	192	459	2,850	954	264	82	135
9	45	54	56	122	110	199	438	2,700	910	438	80	105
10	45	77	50	120	110	242	398	2,580	856	338	77	89
11	45	87	45	110	105	270	378	2,290	812	281	76	80
12	44	80	35	100	100	330	531	2,130	751	267	71	74
13	45	76	30	90	95	346	778	1,980	725	239	70	70
14	45	80	*22	85	90	295	916	1,780	735	219	70	66
15	44	91	20	80	95	274	1,060	1,660	675	199	71	70
16	44	89	25	110	95	227	1,240	1,620	645	192	70	74
17	52	82	35	130	95	222	1,590	1,700	645	181	68	91
18	56	77	30	120	100	222	2,020	1,830	565	169	65	87
19	52	89	25	110	112	224	2,340	1,770	536	162	64	82
20	58	74	30	115	120	242	2,100	1,660	518	152	62	76
21	58	39	40	115	120	254	1,620	1,470	513	144	62	70
22	52	34	45	130	120	257	1,330	1,490	550	135	61	71
23	56	70	50	120	125	239	1,300	1,580	590	131	70	72
24	56	80	55	125	144	251	1,540	1,490	605	123	71	68
25	56	85	60	150	169	219	2,540	1,480	536	120	96	65
26	57	91	70	125	157	245	3,470	1,700	468	116	86	64
27	55	137	120	115	233	362	2,700	2,470	422	118	71	61
28	56	181	500	110	284	482	2,330	2,460	438	120	66	61
29	57	159	480	110	-	508	2,350	2,040	518	110	66	61
30	58	107	520	120	-	454	1,980	1,700	430	105	77	60
31	76	-	442	115	-	402	-	1,540	-	107	89	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,604	76	44	51.7	3,180
November	2,664	181	34	88.8	5,280
December	3,536	520	20	114	7,010
Calendar year 1945	126,338	2,620	20	346	250,600
January	4,450	346	80	144	8,830
February	3,454	284	80	123	6,850
March	8,412	508	189	271	16,680
April	37,891	3,470	323	1,263	75,160
May	62,180	2,990	1,470	2,006	123,300
June	23,517	1,420	422	784	46,650
July	6,698	438	105	216	13,290
August	2,392	108	61	77.2	4,740
September	2,340	135	60	78.0	4,640
Water year 1945-46	159,138	3,470	20	436	315,600

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 22-25, Dec. 1-4, 10-30, Jan. 10 to Feb. 18.

North Fork John Day River at Monument, Oreg.

Location.- Water-stage recorder, lat. 44°49', long. 119°26', in E½ sec. 1, T. 9 S., R. 27 E., just downstream from entrance to canyon, three-quarters of a mile west of Monument.

Drainage area.- 2,520 square miles.

Records available.- March 1925 to September 1946.

Average discharge.- 20 years (1925-27, 1928-46), 1,017 second-feet.

Extremes.- Maximum discharge during year, 13,400 second-feet Dec. 29 (gage height, 11.43 feet); minimum daily, 90 second-feet Oct. 16.
1925-46: Maximum discharge, 22,000 second-feet Mar. 18, 1932 (gage height, 14.8 feet), from rating curve extended above 9,000 second-feet; minimum, 6 second-feet sometime during Nov. 2-13, 1936, when recorder was not operating.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Many small diversions above station for irrigation.

Rating tables, water year 1945-46, except period of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 28						May 29 to Sept. 30			
1.8	129	3.2	780	6.0	3,800	1.7	122	3.3	930
2.0	181	3.7	1,160	6.6	4,630	1.9	170	3.8	1,350
2.2	241	4.2	1,630	7.2	5,500	2.2	270	4.4	1,920
2.5	356	4.8	2,290	7.8	6,400	2.5	410	5.0	2,560
2.8	520	5.4	3,020	8.3	7,200	2.9	640	5.8	3,540

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	105	134	500	2,160	556	2,960	2,670	3,970	2,450	724	170	143
2	115	149	450	1,770	550	2,630	2,590	3,620	2,280	675	175	230
3	110	159	420	2,040	526	2,360	2,400	3,850	2,230	647	165	129
4	105	210	470	1,810	454	1,960	2,390	4,620	2,150	610	155	118
5	95	181	450	1,740	410	1,860	2,550	5,300	2,090	562	150	129
6	100	168	430	1,550	490	2,480	3,080	5,010	2,150	508	145	145
7	100	170	540	1,280	514	2,240	3,050	4,660	1,920	466	135	179
8	100	170	500	1,130	460	2,220	3,420	5,230	1,660	445	140	230
9	105	170	450	936	422	2,530	3,180	5,350	1,540	455	140	234
10	105	170	400	794	460	3,020	2,760	4,900	1,450	703	140	188
11	100	190	400	794	449	2,940	2,590	4,290	1,370	580	138	160
12	105	220	300	671	432	3,990	3,370	3,900	1,280	490	135	145
13	100	210	200	574	410	4,660	4,410	3,510	1,220	435	133	136
14	100	210	*b128	568	405	3,190	4,970	3,190	1,220	395	133	129
15	95	220	110	562	416	2,720	5,290	2,900	1,190	360	132	131
16	90	230	110	*638	427	2,290	5,560	2,750	1,080	335	132	134
17	100	240	b170	626	422	2,100	6,120	2,750	1,110	310	151	143
18	110	240	b150	574	427	2,270	6,830	2,870	1,030	298	151	155
19	95	270	b120	544	466	2,550	7,220	2,840	922	278	151	155
20	100	220	b140	544	490	2,490	6,620	2,690	858	270	150	148
21	113	180	b230	544	632	2,510	5,460	2,450	808	262	151	156
22	120	150	b300	574	704	2,720	4,430	2,390	829	245	151	151
23	113	200	b350	626	731	2,460	4,080	2,600	874	225	132	129
24	111	300	b400	600	944	2,300	4,220	2,540	1,020	210	133	131
25	111	400	b450	773	1,360	2,030	5,410	2,330	930	200	134	124
26	108	500	b500	845	1,430	2,080	7,280	2,420	829	195	138	124
27	106	750	544	580	2,550	3,450	6,320	3,590	745	190	140	122
28	108	1,100	5,890	550	4,480	3,660	5,360	4,340	724	185	118	120
29	108	1,100	8,690	544	-	3,540	5,100	3,590	836	195	109	118
30	120	700	4,560	538	-	3,420	4,690	2,990	815	190	112	118
31	124	-	2,940	544	-	2,900	-	2,670	-	180	140	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,275	124	90	106	6,500
November	9,311	1,100	134	310	18,470
December	31,292	8,690	110	1,009	62,070
Calendar year 1945	434,343	8,690	70	1,190	861,500
January	27,803	2,160	538	897	55,150
February	22,017	4,480	405	786	43,670
March	84,510	4,660	1,860	2,726	167,600
April	133,400	7,280	2,390	4,447	264,600
May	110,110	5,350	2,330	3,552	218,400
June	39,610	2,450	724	1,320	78,570
July	11,823	724	180	381	23,450
August	4,259	175	109	137	8,450
September	4,414	234	118	147	8,760
Water year 1945-46	481,824	8,690	90	1,320	955,700

Peak discharge.- Dec. 29 (4 a.m.) 13,400 sec.-ft.; Feb. 28 (1 a.m.) 6,420 sec.-ft.; Mar. 15 (2 a.m.) 5,650 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Oct. 1-20, Nov. 7 to Dec. 13, Dec. 15, 16, July 22 to Aug. 25; dis-

Camas Creek near Ukiah, Oreg.
(Formerly published as Camas Creek above Cable Creek, near Ukiah, Oreg.)

Location.- Water-stage recorder, lat. 45°09', long. 118°49', in SE¼ sec. 3, T. 5 S., R. 32 E., 1.2 miles upstream from Cable Creek and 6 miles east of Ukiah. Prior to Nov. 8, 1940, station at site 200 feet upstream from Cable Creek.

Drainage area.- 121 square miles.

Records available.- May 1914 to September 1917, November 1919 to June 1924, October 1945 to September 1946 in reports of Geological Survey. May 1914 to September 1917, November 1919 to June 1924, March 1932 to July 1936 (incomplete) in reports of State engineer; March 1937 to September 1945 (incomplete) in files of State engineer.

Extremes.- Maximum discharge during year, 1,180 second-feet Dec. 29 (gage height, 3.84 feet), from rating curve extended above 340 second-feet; maximum gage height, 4.01 feet Dec. 28 (ice or other obstruction on control); minimum discharge recorded during year, 2.7 second-feet Aug. 20-23 (flow may have been less during period of no gage-height record, Dec. 7-28).

1914-17, 1919-24, 1932-46: Maximum discharge observed, 1,790 second-feet May 13, 1917 (gage height, 4.5 feet), from rating curve extended above 900 second-feet; minimum observed, 1 second-foot Aug. 1-9, 1932, June 24 to July 2, 1940.

Remarks.- Records good except those for Oct. 1 to Mar. 20, which are poor. Small diversions above station for irrigation; no regulation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	9.0		220	28	110	240	248	116	16	4.2	4.8
2	8.2	10		160	28	100	232	228	101	14	4.0	4.4
3	7.8	13		120	25	90	220	240	90	13	3.8	4.2
4	7.8	9.1		100	19	80	228	282	80	12	3.6	5.0
5	7.8	9.1		90	25	85	269	305	76	11	3.6	6.4
6	7.3			80	27	85	335	260	93	11	3.4	7.5
7	6.4			70	26	85	340	232	69	9.9	3.4	28
8	6.0			65	23	85	382	296	59	11	3.4	14
9	6.0			50	25	85	320	310	53	20	3.4	9.5
10	6.0			45	25	120	278	264	46	14	3.4	7.8
11	6.4			*b40	24	150	300	220	41	11	3.2	7.0
12	6.0			35	23	210	452	196	39	10	3.0	6.4
13	6.4			30	22	230	569	176	35	9.5	3.4	6.4
14	6.0		7.0	25	20	200	608	154	36	8.6	3.0	6.1
15	6.4			24	21	190	608	134	34	8.2	3.0	6.7
16	7.8			30	21	160	628	124	32	7.8	3.0	7.0
17	9.8			35	21	150	654	118	34	7.2	2.8	7.5
18	11	9.0		32	22	150	681	121	29	7.0	2.8	7.0
19	10			28	23	150	674	114	25	6.7	2.8	6.4
20	10			29	25	160	569	104	22	6.1	2.8	6.1
21	10			29	*b25	*185	440	90	21	5.8	2.7	5.8
22	9.0			33	25	220	345	86	22	5.6	2.7	6.1
23	9.0			30	27	196	315	90	23	5.3	3.0	5.8
24	9.0			32	35	176	335	86	24	4.8	3.6	5.8
25	9.0			38	50	157	458	88	23	4.6	4.6	5.6
26	8.0			31	45	257	562	104	21	4.6	4.8	5.3
27	8.0		80	28	80	422	422	185	20	4.6	4.6	5.3
28	8.0		400	26	130	377	335	228	20	4.6	4.0	5.3
29	8.0		751	26	-	355	325	199	24	4.4	3.8	5.3
30	8.0		500	28	-	287	292	160	20	4.4	4.2	5.6
31	9.0	-	300	27	-	244	-	137	-	4.4	5.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	245.9	11	6.0	7.93	0.066	0.08	488
November	275.2	-	-	9.17	.076	.08	546
December	2,213	751	-	71.4	.590	.68	4,390
Calendar year	-	-	-	-	-	-	-
January	1,636	220	24	52.8	.436	.50	3,240
February	890	130	19	31.8	.263	.27	1,770
March	5,551	422	80	179	1.48	1.71	11,010
April	12,416	681	220	414	3.42	3.82	24,630
May	5,579	310	86	180	1.49	1.71	11,070
June	1,328	116	20	44.3	.366	.41	2,630
July	267.1	20	4.4	8.62	.071	.08	530
August	109.0	5.0	2.7	3.52	.029	.03	216
September	214.1	28	4.2	7.14	.059	.07	425
Water year 1945-46	30,724.3	751	2.7	84.2	.696	9.44	60,940

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Oct. 18 to Nov. 2, Nov. 6 to Dec. 28, Dec. 30 to Mar. 20; discharge computed on basis of discharge measurements and records for North Fork John Day River near Dale.

Middle Fork John Day River at Ritter, Oreg.

Location.- Water-stage recorder, lat. 44°53', long. 119°08', in NW¼ sec. 8, T. 8 S., R. 30 E., at bridge half a mile south of Ritter.

Drainage area.- 526 square miles.

Records available.- October 1929 to September 1946.

Average discharge.- 17 years, 205 second-feet.

Extremes.- Maximum discharge during year, 1,850 second-feet Apr. 18 (gage height, 5.53 feet); minimum daily, 10 second-feet Dec. 15.
1929-46: Maximum discharge, 4,000 second-feet Mar. 19, 1932 (gage height, 7.78 feet), from rating curve extended above 1,600 second-feet; minimum, 1.0 second-foot Dec. 10, 1932.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Several small diversions above station for irrigation.

Rating table, water year 1945-46, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 29)

1.9	28	2.7	160	4.2	720
2.0	37	3.0	235	4.8	1,160
2.2	63	3.4	355	5.4	1,720
2.4	97	3.8	510		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	52	58	298	111	426	635	885	555	153	42	28
2	29	56	64	256	111	386	620	822	530	142	35	23
3	28	72	67	235	101	346	610	850	520	135	32	22
4	27	62	76	230	66	307	625	968	510	117	29	21
5	27	54	69	247	99	316	702	1,080	490	107	28	32
6	27	58	69	200	105	394	850	1,040	482	99	27	32
7	27	54	75	175	107	349	864	1,000	466	95	27	48
8	27	55	72	172	95	372	952	1,050	376	97	27	55
9	27	43	45	119	101	442	864	1,000	349	131	26	45
10	27	45	37	121	99	575	750	960	334	121	25	36
11	26	54	b30	144	95	600	690	878	310	97	24	32
12	27	58	b25	101	99	672	899	836	292	88	22	29
13	26	56	b17	b80	90	850	1,160	780	277	83	22	26
14	28	54	b11	b70	95	615	1,300	738	271	76	22	26
15	27	60	b10	*81	99	520	1,360	696	256	71	22	28
16	28	78	b15	101	99	442	1,400	678	244	68	21	32
17	31	67	b25	109	99	406	1,570	696	253	63	20	34
18	34	60	b20	97	103	414	1,740	726	230	59	18	34
19	33	65	b15	97	113	442	1,730	720	212	56	18	32
20	35	72	b20	105	148	535	1,530	696	198	53	17	30
21	39	45	b30	101	170	610	1,330	640	182	49	18	29
22	39	25	b35	111	155	625	1,090	640	195	47	18	30
23	39	63	b40	105	195	575	984	655	210	44	18	30
24	38	68	b45	121	256	530	1,020	605	230	a43	21	28
25	34	67	b50	123	310	462	1,250	585	210	a42	32	28
26	36	69	b55	101	256	454	1,530	650	182	a41	45	27
27	37	86	b80	103	584	780	1,380	885	165	a40	34	26
28	38	112	b400	93	545	1,020	1,190	871	170	44	26	26
29	41	122	550	103	-	1,020	1,140	780	195	42	26	26
30	42	99	520	101	-	843	1,050	672	178	38	35	26
31	46	-	376	105	-	696	-	605	-	38	38	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	999	46	26	32.2	1,980
November	1,931	122	25	64.4	3,830
December	3,001	550	10	96.8	5,950
Calendar year 1945	80,949	1,140	10	222	160,600
January	4,205	298	70	136	8,340
February	4,506	584	66	161	8,940
March	17,024	1,020	307	549	33,770
April	32,815	1,740	610	1,094	65,090
May	24,687	1,080	585	796	48,970
June	9,072	555	165	302	17,990
July	2,379	153	38	76.7	4,720
August	815	45	17	26.3	1,620
September	921	55	21	30.7	1,830
Water year 1945-46	102,355	1,740	10	280	203,000

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for North Fork John Day River near Dale and at Monument.
b Stage-discharge relation affected by ice.

Fox Creek at gorge, near Fox, Oreg.
(The lower part of this stream is named Cottonwood Creek)

Location.- Water-stage recorder, lat. 44°37', long. 119°16', in NW¼ sec. 17, T. 11 S., R. 29 E., at head of gorge, 6 miles southwest of Fox.

Records available.- October 1930 to September 1946.

Average discharge.- 16 years, 20.1 second-feet.

Extremes.- Maximum discharge during year, 352 second-feet Feb. 27 (gage height, 3.10 feet); no flow July 25 to Sept. 30.

1930-46: Maximum discharge, 800 second-feet Mar. 18, 1932 (gage height, 4.55 feet), from rating curve extended above 180 second-feet; maximum gage height observed, 5.37 feet Feb. 21, 1943 (affected by ice); no flow at times.

Remarks.- Records fair except those for Oct. 1 to Feb. 20, which are poor. Several diversions above station for irrigation.

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

0.4	0	0.9	5.4	1.8	72
.5	.2	1.0	8.5	2.0	99
.6	.5	1.2	17.6	2.2	132
.7	1.7	1.4	33	2.5	194
.8	3.2	1.6	51		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.3	3.4	18	5.0	62	49	54	33	6.3		
2	.2	.3	2.3	21	4.3	53	44	46	28	5.2		
3	.2	.3	2.9	25	5.0	37	39	43	24	4.5		
4	.2	.3	3.2	23	4.3	31	37	42	21	3.9		
5	.2	.4	2.6	12	4.7	42	44	43	20	3.2		
6	.2	.4	3.0	b10	3.6	47	55	39	27	3.0		
7	.2	.4	2.4	b9.0	3.9	33	46	39	21	2.8		
8	.2	.4	2.9	b8.0	4.1	39	49	77	17	3.2		
9	.2	.9	2.4	b7.0	4.3	49	48	77	16	5.0		
10	.2	1.5	1.1	b6.0	4.5	59	46	58	15	4.5		
11	.2	1.7	1.7	b8.0	4.5	56	42	46	12	3.2		
12	.2	2.2	1.6	b5.0	4.3	72	45	39	11	2.4		
13	.2	2.3	*.5	b4.5	4.3	86	59	33	11	2.0		
14	.2	2.4		b4.0	4.3	51	66	29	11	1.6		
15	.2	3.4		*b3.5	4.5	44	72	25	9.7	1.5		
16	.2	2.6			5.0	4.5	35	81	21	9.3	1.2	
17	.2	2.6	a1.0		5.7	4.7	37	92	18	11	.9	
18	.2	2.8			6.6	4.3	58	109	16	11	.5	
19	.2	3.2			5.4	5.0	66	112	14	8.5	.4	
20	.2	2.9			4.7	81	56	105	13	7.6	.3	
21	.2	1.6			4.5	80	45	89	13	7.9	.2	
22	.2	1.0			5.2	73	46	73	14	6.0	.2	
23	.2	1.6	a5.0		5.0	77	39	64	28	7.9	.1	
24	.2	2.4			b6.0	89	38	66	27	9.3	.1	
25	.2	3.0			b6.0	89	33	75	20	9.3	0	
26	.2	4.1	a10		b5.0	76	39	85	23	7.6	0	
27	.2	5.7	a20		b5.0	201	54	78	39	6.6	0	
28	.2	4.7	a100		b4.0	145	59	69	54	7.9	0	
29	.3	4.3	172		b5.0	-	68	66	48	10	0	
30	.3	3.6	51		b5.0	-	61	63	42	8.2	0	
31	.3	-	33		5.2	-	58	-	36	-	0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6.5	0.3	0.2	0.21	13
November	63.3	5.7	.3	2.11	126
December	422.0	172	.5	13.6	837
Calendar year 1945	7,995.6	172	0	21.9	15,850
January	243.3	25	3.5	7.91	487
February	995.1	201	3.6	35.5	1,970
March	1,553	86	31	50.1	3,080
April	1,968	112	37	65.6	3,900
May	1,116	77	13	36.0	2,210
June	404.8	33	6.0	13.5	803
July	56.2	6.3	0	1.81	111
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1945-46	6,830.2	201	0	18.7	13,540

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for John Day River at Prairie City.
b Stage-discharge relation affected by ice.

Deschutes River below Snow Creek, near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°49', long. 121°46', in NW¼ sec. 28, T. 20 S., R. 8 E., 50 feet downstream from Snow Creek, upstream from flow line of Crane Prairie Reservoir, and 17 miles northwest of Lapine. Altitude of gage, about 4,445 feet.

Records available.- November 1937 to September 1946.

Extremes.- Maximum discharge during year, 335 second-feet Aug. 28 (gage height, 2.26 feet); minimum, 67 second-feet sometime during period Feb. 18-25 (gage height, 1.23 feet), from recorded range in stage.
1937-46: Maximum discharge, 362 second-feet Aug. 31, Sept. 1, 1943 (gage height, 2.42 feet); minimum, 43 second-feet Dec. 27, 1941 (gage height, 1.12 feet).

Remarks.- Records good except those for January and February, which are fair. No diversion or regulation above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting control method used Feb. 5 to May 24, July 12 to Aug. 4)

Oct. 1 to Aug. 4				Aug. 5 to Sept. 30	
1.3	81	1.9	219	2.0	263
1.5	121	2.2	300	2.1	290
1.7	167			2.2	318

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	113	102		a87	79	77	100	206	214	297	315
2	128	113	100		a87	79	77	104	209	211	300	315
3	128	110	98		a87	79	77	106	209	211	306	315
4	125	108	98		a87	77	77	106	206	211	308	312
5	121	108	98		87	76	77	108	209	214	310	307
6	121	108	100		89	76	77	110	211	216	310	304
7	119	108	100		a89	76	79	110	211	216	310	301
8	119	108	98		a88	76	79	113	211	219	312	298
9	119	108	a97		a88	76	77	117	211	219	315	298
10	117	108	a96		a88	76	77	117	211	219	318	296
11	117	108	a95		a88	76	79	117	211	219	318	293
12	115	113	a93		a88	77	83	117	211	224	324	290
13	115	108	a92		a87	77	83	117	214	227	324	287
14	115	108	a91		87	77	85	117	216	230	326	287
15	115	108	90		87	79	87	121	214	232	326	285
16	115	108	90	a90	87	77	89	130	214	238	329	285
17	115	108	90		87	76	90	136	211	241	329	282
18	113	108	89		a87	78	90	143	209	243	329	279
19	113	113	b89		a86	76	90	153	209	243	329	274
20	113	108	89		a86	76	89	157	209	251	329	271
21	113	106	89		a85	76	90	175	209	254	329	271
22	113	104	89		a85	78	92	177	209	257	329	268
23	113	104	90		a84	76	94	183	211	257	326	266
24	110	a105	89		a84	77	98	185	211	262	329	286
25	110	a105	90		a83	77	100	196	211	268	326	263
26	110	106	90		83	77	98	201	211	273	329	260
27	110	113	104		85	79	100	201	211	278	326	258
28	110	110	125		81	77	100	203	214	281	326	255
29	110	104	110		-	77	100	201	214	286	326	252
30	115	104	104		-	77	98	203	214	289	321	252
31	115	-	104		-	77	-	206	-	295	318	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,602	130	110	116	7,140
November	3,241	113	104	108	6,430
December	2,979	125	89	96.1	5,910
Calendar year 1945	35,515	145	68	97.3	70,440
January	2,790	-	-	90	5,530
February	2,417	89	81	86.3	4,790
March	2,383	79	76	76.9	4,730
April	2,609	100	77	87.0	5,170
May	4,530	206	100	146	8,990
June	6,327	218	206	211	12,550
July	7,498	295	211	242	14,870
August	9,934	329	297	320	19,700
September	8,505	315	252	284	16,870
Water year 1945-46	56,815	329	-	156	112,700

a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.

Deschutes River at Crane Prairie, near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°45', long. 121°47', in NW¼ sec. 16, T. 21 S., R. 8 E., 200 yards downstream from Crane Prairie Dam and 15 miles northwest of Lapine.

Records available.- January 1914 to June 1917, February 1922 to September 1946.

Average discharge.- 25 years (1914-15, 1922-46), 182 second-feet.

Extremes (regulated).- Maximum discharge during year, 403 second-feet May 30 to June 2 (gage height, 1.92 feet); minimum, 6.3 second-feet Oct. 25-27 (gage height, 0.30 foot). 1914-17, 1922-46: Maximum discharge, 850 second-feet Nov. 10, 1943 (gage height, 2.85 feet); minimum, 2 second-feet Dec. 21, 1940, Nov. 1, 1942.

Remarks.- Records excellent except those below 50 second-feet, which are fair. No diversion above station; flow partly regulated since Nov. 4, 1922, by Crane Prairie Reservoir (see p. 55).

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 29 to May 5)

0.3	6.3	1.0	110
.4	14	1.2	157
.5	24	1.4	215
.6	37	1.6	280
.8	71	1.9	395

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	177	9.4	11	12	12	11	64	130	403	301	363	363
2	177	9.4	11	12	12	11	64	130	399	298	363	363
3	177	9.4	11	12	12	11	64	130	387	290	359	359
4	177	9.4	11	12	12	33	64	130	387	290	359	355
5	177	10	11	12	12	66	64	147	387	287	359	347
6	177	10	10	12	12	60	64	182	387	268	359	347
7	177	10	10	12	12	60	64	194	387	259	359	343
8	174	10	11	12	12	60	64	206	371	259	359	347
9	135	10	11	12	12	60	64	224	367	259	359	347
10	168	10	10	12	12	60	62	224	367	259	359	343
11	168	10	11	12	12	60	62	224	367	259	359	331
12	168	10	11	12	12	60	62	224	367	259	359	331
13	168	10	11	12	12	60	82	224	367	259	355	331
14	168	10	11	12	12	62	82	224	367	259	355	331
15	168	10	11	12	12	62	82	224	367	259	355	327
16	165	10	11	12	12	62	62	224	367	259	355	327
17	152	10	11	12	12	62	62	224	367	259	355	327
18	152	10	11	12	12	62	62	224	359	259	355	315
19	108	11	11	12	12	62	62	224	351	259	355	304
20	82	11	11	12	12	62	62	224	347	282	355	304
21	82	11	12	12	12	62	62	224	339	270	355	294
22	82	11	12	12	12	62	62	239	323	319	359	276
23	82	11	12	12	11	62	62	256	323	319	363	270
24	80	11	12	12	11	62	62	256	323	319	367	270
25	58	11	12	12	11	64	62	287	315	319	367	270
26	6.3	11	12	12	11	64	62	339	304	319	367	270
27	7.1	11	12	12	11	64	62	339	304	319	367	259
28	9.4	11	12	12	11	64	82	339	304	355	367	256
29	9.4	11	12	12	-	64	104	339	304	363	367	256
30	9.4	11	12	12	-	64	106	383	304	363	363	256
31	9.4	-	12	12	-	64	-	403	-	363	363	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,650.0	177	6.3	118	7,240
November	309.6	11	9.4	10.3	614
December	349	12	10	11.3	692
Calendar year 1945	45,180.6	447	6.3	124	89,810
January	372	12	12	12.0	738
February	330	12	11	11.8	655
March	1,742	84	11	56.2	3,480
April	1,984	106	62	66.1	3,940
May	7,341	403	130	237	14,580
June	10,611	403	304	354	21,050
July	8,989	363	259	290	17,830
August	11,161	367	355	360	22,140
September	9,419	365	256	314	18,680
Water year 1945-46	56,257.6	403	6.3	154	111,600

Deschutes River below Wickiup Reservoir, near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°41', long. 121°41', in NE¼ sec. 7, T. 22 S., R. 9 E., about 2,000 feet downstream from Wickiup Dam (under construction, 1938-46), and 9 miles west of Lapine.

Records available.- June 1938 to September 1946.

Extremes (regulated).- Maximum discharge during year, 1,520 second-feet Sept. 27 (gage height, 6.53 feet); minimum, 136 second-feet Dec. 3 (gage height, 2.28 feet).

1938-46: Maximum discharge, 1,600 second-feet Nov. 11, 1943; maximum gage height, 6.53 feet Sept. 27, 1946; minimum, 109 second-feet Dec. 7, 1943 (gage height, 1.78 feet); minimum daily, 189 second-feet Feb. 14, 1945.

Remarks.- Records good. Flow regulated by Crane Prairie Reservoir and since Dec. 24, 1942, by Wickiup Reservoir (see p. 55).

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	810	698	516	234	250	267	261	551	882	1,020	1,260	1,430
2	830	698	516	236	a250	267	263	554	878	1,030	1,260	1,430
3	886	594	312	238	a250	267	271	554	878	1,050	1,260	1,430
4	902	509	217	240	a250	267	263	554	882	1,050	1,260	1,420
5	898	509	198	240	a250	269	256	554	898	1,140	1,260	1,420
6	894	509	198	242	a250	269	252	568	898	1,180	1,260	1,410
7	894	509	200	240	a250	267	250	593	902	1,180	1,260	1,400
8	894	512	202	240	a250	267	250	614	906	1,180	1,250	1,400
9	894	512	202	242	a250	267	248	656	910	1,170	1,260	1,390
10	898	509	202	244	a250	269	248	656	910	1,170	1,260	1,410
11	898	509	204	248	a250	254	248	652	910	1,170	1,250	1,420
12	898	509	202	248	a250	240	250	652	914	1,170	1,250	1,420
13	894	509	200	248	248	250	250	652	958	1,170	1,250	1,390
14	894	512	200	244	248	252	250	660	982	1,170	1,250	1,390
15	894	509	200	242	442	412	252	666	966	1,170	1,310	1,420
16	886	502	200	242	565	534	254	663	966	1,170	1,410	1,440
17	882	502	200	244	565	544	252	663	968	1,170	1,430	1,430
18	878	502	202	244	562	551	252	663	966	1,180	1,440	1,430
19	842	509	202	242	373	368	252	663	966	1,180	1,440	1,450
20	814	506	205	244	252	254	252	702	986	1,190	1,440	1,470
21	814	512	346	238	265	254	254	746	986	1,250	1,420	1,460
22	814	509	548	238	263	254	261	714	986	1,270	1,420	1,450
23	814	509	526	460	263	254	303	714	982	1,260	1,430	1,440
24	814	509	423	530	265	256	332	710	990	1,250	1,430	1,430
25	778	512	226	537	265	256	335	782	994	1,230	1,430	1,430
26	694	512	228	534	265	258	330	894	994	1,220	1,420	1,420
27	698	512	342	315	265	263	325	894	994	1,250	1,420	1,470
28	698	512	523	240	267	261	328	882	1,000	1,270	1,420	1,490
29	698	512	391	240		261	441	882	1,020	1,260	1,420	1,450
30	702	512	228	244		258	512	914	1,020	1,260	1,440	1,440
31	698		230	246		258		934		1,260	1,440	

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	25,802	902	694	832	51,180
November	15,743	698	502	525	31,230
December	8,789	548	198	284	17,430
Calendar year 1945	214,901	1,150	189	589	426,200
January	8,664	537	234	279	17,180
February	8,373	565	248	299	16,610
March	9,168	551	240	296	18,180
April	8,495	512	248	283	16,850
May	21,556	934	551	695	42,760
June	28,490	1,020	878	950	56,510
July	36,690	1,270	1,020	1,184	72,770
August	41,750	1,440	1,250	1,347	82,810
September	42,880	1,490	1,390	1,429	85,050
Water year 1945-46	256,400	1,490	198	702	508,600

a No gage-height record; discharge computed on basis of records for station at Pringle Falls near Lapine.

Deschutes River at Pringle Falls, near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°44', long. 121°37', in SW¼ sec. 23, T. 21 S., R. 9 E., half a mile upstream from bridge at Pringle Falls and 7 miles northwest of Lapine.

Records available.- December 1915 to June 1917, June 1922 to September 1946.

Average discharge.- 23 years (1923-46), 699 second-feet.

Extremes (regulated).- Maximum discharge during year, 1,450 second-feet Sept. 27, 28 (gage height, 2.88 feet); minimum not determined (occurred Dec. 3, when stage was below inlet pipe); minimum daily, 204 second-feet Dec. 5, 7, 8.
1915-17, 1922-46: Maximum discharge, 1,450 second-feet Sept. 10, 11, 1943, Sept. 27, 28, 1946 (maximum gage height, 2.91 feet Sept. 10, 11, 1943); minimum not determined; minimum daily, 196 second-feet, Feb. 15-23, 1945.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are good. No diversion above station. Flow regulated since 1922 by Crane Prairie Reservoir, and since Dec. 24, 1942, by Wickiup Reservoir (see p. 55).

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 5-9)

0.4	201	1.6	640
.7	283	2.0	865
1.0	372	2.4	1,115
1.3	490	2.8	1,390

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	853	700	525	235	240	254	249	520	871	a1,000	1,260	1,410
2	859	706	525	235	240	257	249	525	871	a1,010	1,260	1,400
3	907	630	391	232	240	257	251	525	877	a1,030	1,260	1,400
4	919	510	250	240	240	257	251	525	877	a1,030	1,260	1,390
5	913	510	204	238	243	257	251	525	895	1,080	1,260	1,380
6	913	510	209	235	246	257	246	535	895	1,150	1,260	1,380
7	919	515	204	238	243	257	243	570	889	1,150	1,260	1,380
8	919	515	204	235	243	260	243	580	889	1,150	1,250	1,370
9	919	520	b206	235	248	260	246	630	901	1,150	1,250	1,360
10	913	515	206	235	246	260	248	630	907	1,140	1,250	1,370
11	913	515	b209	b235	249	254	246	630	901	1,140	1,250	1,380
12	913	520	209	b235	249	232	246	630	901	1,140	1,240	1,380
13	913	515	206	235	249	238	248	830	919	1,140	1,240	1,380
14	913	525	b206	238	251	238	248	635	961	1,130	1,240	1,350
15	907	525	b209	238	378	344	246	640	949	1,130	1,280	1,370
16	907	510	209	238	540	505	246	646	949	1,130	1,380	1,390
17	889	510	206	240	540	520	246	646	949	1,130	1,400	1,380
18	883	520	*206	240	540	525	251	646	949	1,140	1,410	1,380
19	853	515	b209	238	406	408	251	646	a950	1,140	1,420	1,390
20	811	515	209	240	230	246	251	656	a970	1,150	1,420	1,420
21	817	520	260	240	251	246	251	706	a970	1,210	1,410	1,410
22	811	520	555	243	249	246	251	706	a970	1,240	1,410	1,400
23	811	520	530	382	249	246	280	695	a965	1,240	1,410	1,380
24	817	520	490	530	254	246	327	695	a975	1,230	1,420	1,380
25	800	520	235	525	254	246	327	734	a960	1,230	1,410	1,360
26	690	525	235	525	254	246	324	871	a980	1,230	1,400	1,350
27	700	530	279	381	257	249	321	865	a980	1,240	1,400	1,380
28	700	525	535	235	254	249	321	865	a985	1,280	1,400	1,440
29	700	525	472	238		249	372	871	a1,100	1,280	1,400	1,400
30	712	525	232	238		249	476	895	a1,000	1,270	1,410	1,380
31	700		235	240		249		925		1,270	1,410	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	26,194	919	690	845	51,960
November	16,031	706	510	534	31,800
December	9,040	555	204	292	17,930
Calendar year 1945	216,764	1,150	196	594	430,000
January	8,512	530	232	275	16,880
February	8,081	540	230	289	16,030
March	8,807	525	232	284	17,470
April	8,200	476	243	273	16,260
May	20,798	925	520	671	41,250
June	28,075	1,000	871	936	55,690
July	35,980	1,280	1,000	1,161	71,370
August	41,310	1,420	1,240	1,333	81,940
September	41,520	1,440	1,350	1,384	82,350
Water year 1945-46	252,548	1,440	204	692	500,900

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station below Wickiup Reservoir.
b Stage-discharge relation affected by ice.

Deschutes River at Benham Falls, near Bend, Oreg.

Location.- Water-stage recorder, lat. 43°56', long. 121°25', in SE¼ sec. 9, T. 19 S., R. 11 E., 50 yards upstream from head of Benham Falls, 1½ miles downstream from dam site for proposed Benham Falls Reservoir, and 10 miles southwest of Bend. Altitude of gage, 4,144 feet (from river-profile map).

Records available.- March 1909 to September 1913, August 1920 to September 1921, February 1924 to September 1946. July 1906 to February 1909 and April to September 1914 at West Ranch, 7 miles upstream.

Average discharge.- 29 years (1906-13, 1924-46), 1,304 second-feet.

Extremes.- Maximum discharge during year, 2,020 second-feet Aug. 30 (gage height, 2.59 feet); minimum not determined (occurred during period of doubtful gage-height record Dec. 9-11, 14-21); minimum daily, 510 second-feet Dec. 15.
1906-13, 1920-21, 1924-46: Maximum discharge, 5,000 second-feet (estimated, Nov. 27, 1909 (gage height not determined); minimum not determined (occurred during periods Dec. 9-11, 14-21, 1945; minimum daily, that of Dec. 15, 1945.

Remarks.- Records excellent except those for Nov. 1 to Apr. 30 and July 17 to Sept. 30, which are good. Small diversions above station for irrigation. Flow regulated since 1922 by Crane Prairie and Crescent Lake Reservoirs, and since December 1942 by Wickiup Reservoir (see p. 55).

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,180	1,080	946	869	709	737	789	1,540	1,820	1,680	1,890	2,000
2	1,180	1,080	946	910	689	765	781	1,600	1,760	1,670	1,900	1,990
3	1,190	1,080	946	964	673	781	781	1,620	1,740	1,660	1,900	1,990
4	1,210	1,050	857	1,040	658	761	777	1,600	1,710	1,660	1,900	1,980
5	1,240	941	654	1,040	673	745	781	1,570	1,690	1,660	1,900	1,970
6	1,240	901	612	982	a670	757	781	1,560	1,690	1,690	1,880	1,900
7	1,240	893	609	968	a660	757	785	1,570	1,680	1,740	1,870	1,880
8	1,240	893	592	653	651	757	793	1,590	1,680	1,750	1,860	1,860
9	1,240	889	d520	777	637	761	805	1,600	1,680	1,740	1,860	1,840
10	1,240	a890	d575	781	626	765	809	1,650	1,690	1,740	1,860	1,840
11	1,240	a900	d560	725	626	769	809	1,660	1,690	1,740	1,860	1,830
12	1,240	910	570	669	630	793	801	1,660	1,680	1,740	1,860	1,830
13	1,240	914	564	717	634	821	805	1,650	1,660	1,730	1,850	1,830
14	1,240	918	d515	745	648	809	829	1,650	1,660	1,720	1,840	1,820
15	1,240	918	d510	725	654	785	653	1,650	1,680	1,720	1,840	1,810
16	1,240	928	d600	733	793	841	877	1,650	1,670	1,710	1,830	1,810
17	1,240	910	d610	717	968	1,020	889	1,650	1,670	1,700	1,880	a1,820
18	1,230	905	d585	709	968	1,030	910	1,630	1,670	1,710	1,930	a1,830
19	1,220	889	d525	693	968	1,040	941	1,630	1,670	1,730	1,960	a1,820
20	1,200	877	d530	669	833	914	972	1,620	1,670	1,740	1,970	a1,820
21	1,170	889	d605	693	658	769	1,000	1,650	1,690	1,750	1,970	a1,830
22	1,160	893	616	705	665	753	1,030	1,680	1,690	1,790	1,970	a1,840
23	1,160	893	889	705	665	745	1,080	1,680	1,680	1,830	1,980	a1,830
24	1,150	897	897	861	669	745	1,160	1,680	1,680	1,850	1,980	a1,830
25	1,160	901	849	1,020	673	745	1,220	1,710	1,680	1,850	1,980	a1,810
26	1,170	918	637	1,020	677	745	1,220	1,790	1,680	1,860	1,980	a1,800
27	1,110	954	616	1,030	705	745	1,230	1,890	1,680	1,840	1,980	a1,790
28	1,090	968	861	897	737	753	1,240	1,890	1,680	1,850	1,970	a1,790
29	1,080	959	1,150	749	-	777	1,260	1,870	1,680	1,870	1,970	a1,820
30	1,080	959	1,060	677	-	793	1,410	1,840	1,680	1,880	1,980	a1,650
31	1,080	-	669	729	-	793	-	1,830	-	1,880	2,000	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	36,940	1,240	1,080	1,192	73,270
November	27,997	1,080	877	933	55,550
December	21,875	1,150	510	706	43,390
Calendar year 1945	386,514	1,630	510	1,059	766,600
January	25,392	1,040	669	819	50,360
February	19,817	968	626	708	39,310
March	24,771	1,040	737	799	49,130
April	28,418	1,410	777	947	56,370
May	51,860	1,890	1,540	1,673	120,900
June	50,680	1,820	1,660	1,689	100,500
July	54,480	1,880	1,660	1,757	108,100
August	59,400	2,000	1,830	1,916	117,800
September	55,640	2,000	1,790	1,855	110,400
Water year 1945-46	457,270	2,000	510	1,253	907,100

a No gage-height record; discharge computed on basis of unpublished records for stations below Benham Falls and at Ryan Ranch.
d Doubtful gage-height record; discharge computed on basis of unpublished records for stations below Benham Falls and at Ryan Ranch.

Deschutes River below Lava Island, near Bend, Oreg.

Location.- Water-stage recorder, lat. 44°00', long. 121°22', in SW¼ sec. 23, T. 18 S., R. 11 E., three-quarters of a mile downstream from Lava Island, 1 mile downstream from intake of Arnold Canal, and 6 miles southwest of Bend.

Records available.- March 1926 to September 1946.

Average discharge.- 20 years, 1,052 second-feet.

Extremes.- Maximum discharge during year, 1,890 second-feet Sept. 2, 3 (gage height, 1.83 feet); minimum, 482 second-feet Dec. 14 (gage height, -0.05 foot).
1926-46: Maximum discharge, that of Sept. 2, 3, 1946; minimum, that of Dec. 14, 1945.

Remarks.- Records good. Arnold Canal diverts water above station for irrigation (see p. 62). Flow regulated by Crane Prairie, Wickiup, and Crescent Lake Reservoirs (see p. 55).

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,060	1,030	905	856	690	716	761	1,300	1,600	1,490	1,700	1,820
2	1,060	1,030	905	891	683	742	754	1,370	1,570	1,490	1,700	1,840
3	1,050	1,040	905	935	670	754	754	1,390	1,540	1,480	1,700	1,860
4	1,080	996	849	1,010	a660	735	754	1,380	1,520	1,480	1,700	1,800
5	1,100	884	676	1,030	a675	722	754	1,350	1,500	1,490	1,690	1,790
6	1,110	870	640	956	a670	735	754	1,340	1,500	1,500	1,690	1,740
7	1,110	863	*634	948	a670	735	754	1,320	1,490	1,560	1,680	1,710
8	1,110	863	616	849	a660	742	754	1,330	1,480	1,570	1,680	1,680
9	1,110	870	560	780	a650	748	761	1,350	1,480	1,580	1,680	1,670
10	1,120	877	594	774	a640	748	768	1,390	1,490	1,570	1,680	1,660
11	1,110	863	588	728	634	754	768	1,410	1,490	1,570	1,670	1,650
12	1,110	684	582	b680	634	780	761	1,410	1,480	1,570	1,670	1,650
13	1,110	877	588	b720	634	780	761	1,410	1,460	1,560	1,660	1,660
14	1,110	670	b550	735	640	768	780	1,410	1,450	1,550	1,660	1,650
15	1,110	884	b535	722	640	748	800	1,400	1,470	1,530	1,660	1,640
16	1,110	884	599	728	728	814	821	1,400	1,460	1,520	1,660	1,630
17	1,110	649	622	716	905	972	835	1,400	1,460	1,520	1,700	1,640
18	1,100	842	599	702	912	980	863	1,390	1,460	1,520	1,740	1,650
19	1,090	821	555	690	919	996	884	1,380	1,460	1,540	1,770	1,650
20	1,110	807	545	690	828	891	905	1,370	1,480	1,560	1,790	1,650
21	1,110	614	594	690	652	735	905	1,420	1,480	1,580	1,810	1,660
22	1,090	828	594	690	640	722	919	1,450	1,480	1,570	1,810	1,670
23	1,090	828	807	676	634	702	948	1,450	1,470	1,620	1,810	1,670
24	1,090	835	849	774	622	683	996	1,460	1,480	1,640	1,830	1,670
25	1,100	835	849	956	622	670	1,050	1,470	1,480	1,650	1,830	1,660
26	1,120	849	670	980	640	670	1,050	1,520	1,480	1,650	1,830	1,640
27	1,060	870	640	988	683	702	1,070	1,620	1,490	1,660	1,830	1,630
28	1,030	898	828	905	709	742	1,070	1,640	1,490	1,670	1,820	1,650
29	1,020	912	1,130	742	-	761	1,080	1,640	1,480	1,670	1,810	1,670
30	1,020	919	1,080	683	-	768	1,180	1,620	1,490	1,680	1,820	1,680
31	1,040	-	877	728	-	761	-	1,610	-	1,690	1,840	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	33,750	1,120	1,020	1,089	66,940
November	26,492	1,040	807	883	52,550
December	21,965	1,130	535	709	43,570
Calendar year 1945	345,994	1,490	535	948	686,300
January	24,950	1,030	676	805	49,490
February	19,344	919	622	691	38,370
March	23,776	996	670	767	47,160
April	26,014	1,180	754	867	51,600
May	44,400	1,640	1,300	1,432	88,070
June	44,640	1,600	1,450	1,488	88,540
July	48,710	1,690	1,480	1,571	96,610
August	53,920	1,840	1,660	1,739	106,900
September	50,620	1,860	1,630	1,687	100,400
Water year 1945-46	418,581	1,860	535	1,147	830,200

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of unpublished records for Deschutes River above Lava Island and Arnold Canal near Bend.
b Stage-discharge relation affected by ice.

Deschutes River below Bend, Oreg.

Location.- Water-stage recorder, lat. 44°05', long. 121°18', in SE¼ sec. 20, T. 17 S., R. 12 E., half a mile downstream from North Canal Dam and 2 miles north of Bend.

Records available.- October 1914 to September 1946.

Average discharge.- 32 years, 622 second-feet.

Extremes.- Maximum discharge during year, 1,050 second-feet Dec. 29, Jan. 5, 12 (gage height, 3.08 feet); minimum, 7 second-feet June 14 (gage height, 0.92 foot).
1914-46: Maximum discharge, 2,500 second-feet Dec. 7, 1921 (gage height, 3.9 feet); minimum, 1 second-foot Aug. 25, 1930.
Maximum discharge known near this site since 1905, 4,820 second-feet Nov. 27, 1909.

Remarks.- Records good except those below 20 second-feet, which are fair. Six large canals divert water above station for irrigation (see p. 62). Flow regulated by hydroelectric plant at Bend, Crane Prairie, Wickiup, and Crescent Lake Reservoirs (see p. 55).

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 26		Nov. 27 to Sept. 30			
1.7	157	1.0	10	1.7	144
1.9	235	1.1	17	1.9	224
2.1	330	1.2	27	2.1	315
2.3	445	1.3	41	2.4	495
2.6	655	1.4	59	2.7	720
		1.5	82	3.0	980

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	161	449	450	595	672	476	696	273	237	99	40	370
2	165	545	530	618	648	416	704	332	171	64	45	412
3	154	445	516	640	648	416	712	342	105	43	59	488
4	154	380	565	618	625	618	712	301	66	20	77	424
5	168	391	488	706	648	632	704	250	34	20	88	424
6	194	397	462	980	632	648	432	211	19	33	96	443
7	341	415	436	980	625	625	354	134	22	64	96	436
8	279	415	450	863	610	618	348	141	24	55	94	443
9	165	427	450	760	610	521	364	155	31	54	88	443
10	176	339	450	760	595	400	359	171	35	43	85	443
11	207	215	430	720	588	656	342	426	377	40	85	450
12	184	415	370	656	580	704	273	305	443	38	80	450
13	187	524	450	698	588	720	250	131	196	40	80	436
14	232	580	430	736	595	696	220	141	10	34	77	430
15	265	580	395	720	482	572	211	141	19	33	70	418
16	195	524	558	712	436	530	216	94	18	27	80	412
17	343	452	595	704	502	580	155	91	16	15	105	436
18	292	452	580	696	502	544	144	82	14	14	152	436
19	318	538	509	565	610	632	114	77	14	27	182	436
20	439	545	476	443	672	672	88	52	14	23	190	436
21	445	545	523	443	625	640	68	54	21	18	325	443
22	433	524	488	488	602	618	82	66	31	28	199	450
23	439	610	450	580	602	618	91	54	16	33	199	476
24	464	545	456	704	588	625	114	37	15	31	220	476
25	421	511	482	728	572	602	155	70	14	30	250	469
26	375	679	522	744	495	602	111	105	17	25	246	456
27	298	704	588	768	424	625	96	224	19	17	242	456
28	233	680	720	800	436	680	94	242	45	22	250	450
29	351	580	944	736	-	720	105	255	105	34	255	482
30	187	610	935	648	-	704	152	246	114	30	306	495
31	295	-	656	688	-	688	-	233	-	37	359	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	8,560	464	154	276	16,980
November	15,016	704	215	501	29,780
December	16,354	944	370	528	32,440
Calendar year 1945	113,289	944	10	310	224,700
January	21,495	980	443	693	42,630
February	16,212	672	424	579	32,160
March	18,798	720	400	606	37,290
April	8,466	712	68	282	16,790
May	5,436	426	37	175	10,780
June	2,262	443	10	75.4	4,490
July	1,091	99	14	35.2	2,160
August	4,720	359	40	152	9,360
September	13,319	495	370	444	26,420
Water year 1945-46	131,729	980	10	361	261,300

Deschutes River near Madras, Oreg.

Location.- Water-stage recorder, lat. 44°43', long. 121°14', in NE¼ sec. 13, T. 10 S., R. 12 E., 1 mile downstream from Pelton dam site, 4 miles upstream from Shitlike Creek, and 9 miles northwest of Madras. Altitude of gage, 1,404 feet (from river-profile map).

Records available.- October 1923 to September 1946.

Average discharge.- 23 years, 4,160 second-feet.

Extremes.- Maximum discharge during year, 12,000 second-feet Dec. 30 (gage height, 6.34 feet); minimum, 3,140 second-feet Oct. 14 (gage height, 1.56 feet).
1923-46: Maximum discharge, 13,300 second-feet Jan. 1, 1943 (gage height, 6.89 feet); minimum, 2,940 second-feet Sept. 20, 1942 (gage height, 1.41 feet).

Remarks.- Records excellent. Large diversions in upper river basin for irrigation. Some winter and spring runoff stored in Crane Prairie, Wickiup, Crescent Lake, and Ochoco Reservoirs. Occasional slight fluctuations caused by power plants on Deschutes River near Redmond and Crooked River near Culver.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.5	3,060	3.0	5,350	5.0	9,090
1.8	3,470	3.4	6,030	5.6	10,400
2.1	3,910	3.8	6,750	6.2	11,700
2.4	4,370	4.2	7,500		
2.7	4,850	4.6	8,280		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,290	3,530	4,340	8,580	5,010	7,220	6,300	5,350	4,290	4,040	3,530	3,800
2	3,300	3,700	3,970	7,100	4,980	6,520	6,050	5,260	4,310	4,080	3,540	3,850
3	3,300	3,730	3,970	6,520	4,850	5,890	5,930	5,100	4,270	4,020	3,540	3,910
4	3,270	3,580	3,980	6,520	4,770	5,620	5,930	5,010	4,210	3,920	3,500	3,940
5	3,270	3,570	4,020	6,550	4,770	5,330	5,910	4,960	4,150	3,880	3,500	3,910
6	3,290	3,570	3,940	6,210	4,900	5,230	5,960	4,880	4,030	3,880	3,500	3,910
7	3,320	3,570	3,960	6,000	4,830	5,260	5,860	4,800	3,910	3,820	3,500	3,910
8	3,470	3,570	3,900	5,760	4,740	5,320	6,000	4,720	3,880	3,880	3,500	3,910
9	3,410	3,610	3,970	5,490	4,670	5,280	6,140	4,690	3,840	3,970	3,500	3,900
10	3,300	3,640	3,900	5,250	4,660	5,350	6,000	4,740	3,880	3,880	3,510	3,880
11	3,300	3,550	3,880	5,060	4,610	5,710	5,780	4,670	3,790	3,820	3,500	3,860
12	3,360	3,480	3,800	4,980	4,610	6,010	5,840	4,710	4,030	3,790	3,480	3,850
13	3,330	3,660	3,760	4,850	4,610	6,050	6,210	4,610	4,240	3,800	3,480	3,840
14	3,330	3,740	3,670	4,800	4,610	6,430	6,710	4,390	4,200	3,800	3,480	3,820
15	3,370	3,800	3,640	4,790	4,630	6,520	7,200	4,310	4,080	3,740	3,480	3,820
16	3,410	3,840	3,700	4,770	4,370	5,930	7,500	4,270	4,020	3,680	3,470	3,800
17	3,330	3,730	3,910	4,750	4,270	5,690	7,610	4,210	3,920	3,660	3,480	3,800
18	3,460	3,780	3,910	4,740	4,260	5,540	7,770	4,210	3,850	3,640	3,470	3,820
19	3,410	3,850	3,880	4,690	4,290	5,600	8,040	4,230	3,900	3,610	3,530	3,840
20	3,470	3,820	3,790	4,550	4,450	5,980	8,080	4,200	3,960	3,610	3,570	3,860
21	3,580	3,820	3,820	4,420	4,430	6,100	7,610	4,120	4,040	3,610	3,580	3,850
22	3,600	3,790	3,860	4,550	4,420	6,070	6,730	4,140	4,120	3,640	3,670	3,860
23	3,580	3,760	3,860	4,740	4,470	6,190	6,210	4,210	4,080	3,600	3,600	3,900
24	3,600	3,880	3,880	5,080	4,550	6,070	8,010	4,180	4,030	3,570	3,580	3,920
25	3,600	3,790	3,910	5,350	4,750	5,860	5,890	4,230	4,080	3,570	3,610	3,900
26	3,570	3,880	3,940	5,230	4,740	5,690	6,170	4,420	3,820	3,570	3,840	3,860
27	3,510	4,310	4,060	5,160	4,740	5,710	8,410	4,470	3,780	3,540	3,640	3,850
28	3,460	4,390	6,730	5,150	5,680	6,730	6,160	4,510	3,850	3,540	3,620	3,840
29	3,400	4,720	10,200	5,110	-	7,080	5,760	4,480	3,970	3,540	3,660	3,850
30	3,570	4,580	11,700	4,990	-	7,010	5,500	4,370	4,000	3,540	3,880	3,880
31	3,410	-	11,400	4,950	-	6,710	-	4,310	-	3,530	3,780	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	105,870	3,600	3,270	3,415	210,000
November	114,240	4,720	3,480	3,808	226,600
December	145,250	11,700	3,640	4,685	288,100
Calendar year 1945	1,449,970	11,700	3,180	3,973	2,876,000
January	166,690	8,580	4,420	5,377	330,800
February	130,650	5,660	4,260	4,666	259,100
March	185,700	7,220	5,250	5,990	368,300
April	193,070	8,080	5,500	6,438	382,900
May	140,760	5,350	4,120	4,541	279,200
June	120,470	4,310	3,780	4,016	238,900
July	115,750	4,080	3,550	3,734	229,800
August	110,100	3,780	3,480	3,552	218,400
September	115,940	3,940	3,800	3,865	230,000
Water year 1945-46	1,644,490	11,700	3,270	4,505	3,262,000

Deschutes River at Moody, near Biggs, Oreg.

Location.- Water-stage recorder, lat. 45°37', long. 120°54', in SE¼ sec. 26, T. 2 N., R 15 E., at Moody, 1½ miles upstream from mouth and 5 miles southwest of Biggs. Datum of gage is 167.43 feet above mean sea level, datum of 1929.

Drainage area.- 10,500 square miles.

Records available.- July 1906 to September 1946. October 1897 to December 1899 at site near Moro, 10 miles above mouth.

Average discharge.- 41 years (1898-99, 1906-46), 5,708 second-feet (40 years, 5,707 second-feet; figure published in Water-Supply Paper 1044 in error).

Extremes.- Maximum discharge during year, 25,400 second-feet Dec. 29 (gage height, 7.13 feet); minimum, 3,730 second-feet Oct. 3-7 (gage height, 2.21 feet).
1897-99, 1906-46: Maximum discharge, 43,600 second-feet Jan. 7, 1923 (gage height, 10.2 feet), from rating curve extended above 15,000 second-feet; minimum, 3,380 second-feet Sept. 16-19, 1931 (gage height, 2.06 feet).

Remarks.- Records excellent except those above 15,000 second-feet, which are good. Many diversions in upper river basin for irrigation. Some winter and spring runoff stored in Crane Prairie, Wickiup, Crescent Lake, and Ochoco Reservoirs.

Cooperation.- Water-stage recorder inspected by agent of Eastern Oregon Land Co.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

2.3	3,950	4.5	12,000
2.6	4,780	5.0	14,200
3.0	6,030	5.5	16,700
3.5	7,830	6.0	19,200
4.0	9,800	6.6	22,500

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,780	4,000	5,290	14,600	8,400	8,130	7,980	7,410	6,130	4,990	4,130	4,320
2	3,780	4,110	4,990	10,900	6,480	8,920	7,600	7,260	6,060	4,990	4,110	4,320
3	3,780	4,350	4,640	10,200	6,370	7,750	7,260	7,230	6,060	4,990	4,110	4,380
4	3,760	4,320	4,840	9,800	6,130	7,230	7,190	7,300	6,000	4,870	4,110	4,460
5	3,760	4,110	4,720	11,200	5,960	6,900	7,150	7,450	5,900	4,750	4,050	4,460
6	3,760	4,130	4,720	9,840	6,100	6,650	7,120	7,340	5,730	4,660	4,050	4,410
7	3,760	4,080	4,810	8,880	6,510	6,620	7,190	7,260	5,510	4,640	4,050	4,430
8	3,810	4,110	4,810	8,780	6,200	6,650	7,010	7,040	5,320	4,640	4,050	4,410
9	3,900	4,110	4,720	7,910	5,950	6,620	7,260	6,940	5,260	4,810	4,050	4,410
10	3,850	4,180	4,690	7,340	5,900	6,680	7,340	7,150	5,200	4,840	4,050	4,410
11	3,780	4,180	4,580	6,940	5,800	6,760	7,120	7,190	5,140	4,860	4,050	4,380
12	3,780	4,110	4,520	6,510	5,730	7,300	6,940	7,040	5,080	4,610	4,030	4,350
13	3,810	4,110	4,460	6,230	5,640	8,100	7,040	7,190	5,510	4,580	4,030	4,350
14	3,780	4,240	4,430	6,100	5,640	8,100	7,870	6,760	5,930	4,550	4,030	4,320
15	3,780	4,350	4,180	6,030	5,600	8,370	8,440	6,440	5,700	4,550	4,030	4,320
16	3,850	4,410	4,240	5,930	5,600	8,130	9,040	6,300	5,510	4,490	4,030	4,350
17	3,850	4,460	4,380	5,900	5,540	7,450	9,400	6,300	5,350	4,430	4,000	4,320
18	3,810	4,350	4,580	5,830	5,570	7,450	9,680	6,370	5,170	4,380	3,980	4,320
19	3,930	4,490	4,520	5,730	5,250	7,230	10,200	6,460	5,110	4,350	3,980	4,350
20	3,850	4,490	4,430	5,600	5,260	8,290	10,400	6,480	5,140	4,320	4,050	4,350
21	3,950	4,410	4,380	5,350	5,410	8,250	10,300	6,440	5,200	4,320	4,080	4,350
22	4,050	4,410	4,410	5,460	5,350	8,020	9,440	6,300	5,280	4,320	4,080	4,350
23	4,110	4,350	4,430	6,230	5,410	7,910	8,480	6,340	5,260	4,320	4,180	4,380
24	4,080	4,350	4,430	6,580	5,480	7,940	8,020	6,270	5,110	4,240	4,110	4,410
25	4,080	4,430	4,430	8,370	5,570	7,640	8,020	6,230	5,080	4,180	4,080	4,410
26	4,110	4,350	4,520	7,640	5,800	7,380	8,330	6,480	5,050	4,180	4,110	4,380
27	4,030	4,380	4,550	7,150	5,830	7,230	8,800	6,940	4,750	4,180	4,130	4,350
28	4,030	5,540	7,720	6,970	6,580	7,640	8,800	6,860	4,750	4,180	4,130	4,320
29	4,000	5,480	22,900	6,830	-	8,680	8,250	6,760	4,960	4,130	4,130	4,350
30	4,030	5,640	20,100	6,620	-	8,760	7,830	6,480	5,020	4,130	4,160	4,350
31	4,160	-	17,400	6,400	-	8,560	-	6,170	-	4,130	4,240	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	120,770	4,160	3,760	3,896	239,500
November	132,030	5,640	4,000	4,401	261,900
December	191,620	22,900	4,180	6,181	380,100
Calendar year 1945	1,770,640	22,900	3,640	4,851	3,512,000
January	233,850	14,600	5,350	7,544	463,800
February	163,020	6,580	5,230	5,822	323,300
March	237,340	8,920	6,620	7,856	470,800
April	245,500	10,400	6,940	8,183	488,900
May	210,200	7,450	6,170	6,781	416,900
June	161,250	6,130	4,750	5,375	319,800
July	139,390	4,990	4,130	4,496	276,500
August	126,400	4,240	3,980	4,077	250,700
September	131,070	4,460	4,320	4,369	260,000
Water year 1945-46	2,092,440	22,900	3,760	5,733	4,150,000

Reservoirs in Deschutes River Basin above Bend, Oreg.

Crane Prairie Reservoir.- Staff gage, lat. 43°45', long. 121°47', at dam on Deschutes River in NW¼ sec. 16, T. 21 S., R. 8 E., 15 miles northwest of Lapine. Datum of gage is 4,400.0 feet above mean sea level (Bureau of Reclamation bench mark). Records available, November 1922 to September 1946. Maximum contents observed during year, 45,410 acre-feet May 29 (elevation, 4,442.92 feet); minimum, 4,450 acre-feet Oct. 1 (elevation, 4,431.58 feet). Maximum contents observed during period 1922-46, 60,500 acre-feet June 5-7, 1943 (elevation, 4,446.0 feet); no usable contents at times.

Reservoir is formed by earth dam completed by North Canal Co. in 1922; gates were first closed Nov. 22, 1922; reconstructed as rock-faced earth dam with concrete control works by Bureau of Reclamation in 1939-40. Capacity, 55,340 acre-feet between elevations 4,424 feet (lip of fish screen structure) and 4,445 feet (crest of spillway). Natural flow passing through reservoir when outlet gates are open prevents withdrawal of storage to elevation of sill of gates. Water used for irrigation near Bend and Redmond. Gage read once daily.

Wickiup Reservoir.- Staff gage, lat. 43°41', long. 121°41', at dam on Deschutes River in NE¼ sec. 7, T. 22 S., R. 9 E., 9 miles west of Lapine. Temporary gage established for use during construction of dam reads elevation above mean sea level (levels by Bureau of Reclamation). Records available, December 1942, when storage began, to September 1946. Maximum contents observed during year, 87,320 acre-feet May 24-27 (elevation, 4,322.63 feet); minimum observed, 13,490 acre-feet Nov. 3 (elevation, 4,289.37 feet). Maximum contents observed during period 1942-46, that of May 24-27, 1946; no storage during most of period November 1942 to March 1943.

Reservoir is formed by rock-faced earth-fill dam completed by Bureau of Reclamation prior to 1943 except for outlet works, reservoir dike, spillway, and timber removal, on which work is continuing. Ultimate capacity, about 180,000 acre-feet (final capacity table not yet available). Water stored is intended for irrigation near Madras (diversion canals not completed in 1946). Gage read twice daily.

Crescent Lake Reservoir.- Staff gage, lat. 43°30', long. 121°58', at head of spillway on dam at lake outlet in sec. 11, T 24 S., R. 6 E., and auxiliary staff gage at boat dock 100 yards south, 14 miles west of Crescent. Datum of gage is 4,826.0 feet above mean sea level (levels by Deschutes County Municipal Improvement District). Records available, August 1922 to September 1946. Maximum contents observed during year, 48,980 acre-feet July 6 (elevation, 4,839.46 feet); minimum observed, 19,020 acre-feet Oct. 6 (elevation, 4,831.38 feet). Maximum contents observed during period 1922-46, 72,460 acre-feet July 15, 1923 (elevation, 4,845.55 feet); minimum observed, 9,640 acre-feet Oct. 21, 1931 (elevation, 4,828.75 feet).

Reservoir is formed by dam of earth and logs, completed and storage began in 1922. Capacity, 86,050 acre-feet between elevations 4,826 feet (sill of outlet gate), and 4,849 feet (crest of spillway). Dead storage not known; records given herein represent usable contents. Water is diverted from Deschutes River at Bend and used by Deschutes County Municipal Improvement District for irrigation near Tumalo. Gage read about once a week.

Elevation and contents, water year October 1945 to September 1946

Date	Crane Prairie Reservoir			Wickiup Reservoir		
	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept. 30	4,431.56	4,450	-	4,299.00	27,060	-
Oct. 31	4,433.20	8,601	+4,151	4,290.26	14,580	-12,480
Nov. 30	-	a20,110	+11,509	4,290.27	14,560	-20
Dec. 31	-	a29,860	+9,750	4,299.60	28,080	+13,520
Calendar year 1945	-	-	+12,610	-	-	-7,580
Jan. 31	-	a36,690	+6,830	4,307.23	43,010	+14,930
Feb. 26	-	a39,280	+2,590	4,312.45	55,320	+12,310
Mar. 31	-	a39,650	+370	4,317.96	70,490	+15,170
Apr. 30	4,442.12	41,780	+2,130	4,322.16	85,250	+14,760
May 31	4,442.90	45,320	+3,540	4,322.53	86,880	+1,630
June 30	4,442.50	43,490	-1,830	4,321.38	82,020	-4,880
July 31	4,442.20	42,140	-1,350	4,315.94	64,610	-17,410
Aug. 31	4,441.80	40,360	-1,780	4,307.61	43,840	-20,770
Sept. 30	4,441.62	39,560	-800	4,294.03	19,420	-24,420
Water year 1945-46	-	-	+35,110	-	-	-7,640

Date	Crescent Lake Reservoir		
Sept. 30	-	a19,040	-
Oct. 31	-	a20,200	+1,160
Nov. 30	-	a22,810	+2,610
Dec. 31	-	a27,300	+4,490
Calendar year 1945	-	-	-1,550
Jan. 31	-	a30,070	+2,770
Feb. 28	-	a32,300	+2,230
Mar. 31	4,835.30	33,350	+1,050
Apr. 30	-	a34,840	+1,490
May 31	-	43,660	+8,820
June 30	-	a48,710	+5,050
July 31	-	a43,850	-4,860
Aug. 31	4,835.50	34,070	-9,780
Sept. 30	-	a35,920	+1,850
Water year 1945-46	-	-	+16,880

† Time of day variable.
a No gage-height record; contents interpolated or extrapolated.

Cultus River above Cultus Creek, near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°49', long. 121°48', at road crossing in sec. 20 or 29, T. 20 S., R. 8 E., upstream from flow line of Crane Prairie Reservoir, 2 miles upstream from Cultus Creek, and 18 miles northwest of Lapine. Altitude of gage, 4,450 feet (from reservoir surveys by Bureau of Reclamation).

Records available.- June 1923 to September 1925, November 1937 to September 1946.

Average discharge.- 10 years (1924, 1925, 1939-46), 53.2 second-feet.

Extremes.- Maximum discharge during year, 114 second-feet May 19, 20; minimum not determined.

1923-25, 1937-46: Maximum discharge, 118 second-feet May 16, 1938, June 1, 1943; minimum discharge, 28 second-feet Mar. 22, Apr. 5-10, 1941.

Remarks.- Records fair except those for Nov. 16 to Feb. 9, which are poor. No diversion or regulation above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	50	48			44	48	62	104	85	94	92
2	53	50	44			44	48	66	101	85	94	90
3	53	50	44			44	48	76	101	85	94	90
4	51	50	46			44	48	87	96	85	94	90
5	51	51	44		a46	44	48	87	96	85	94	90
6	51	51	44			44	48	92	96	87	94	87
7	51	50	44			46	48	94	96	87	94	87
8	53	50	43			46	48	96	94	87	94	87
9	53	50	44			46	50	101	94	87	94	87
10	51	51	43		46	46	50	108	94	87	94	85
11	51	51	44		48	46	50	104	94	87	94	85
12	53	50	44		48	46	50	106	92	87	94	85
13	53	51	43		46	46	50	106	92	87	94	85
14	51	51			46	46	50	106	92	87	94	85
15	51	51			46	46	51	108	92	87	94	83
16	51	53		a44	46	46	51	108	92	87	94	83
17	53	53			46	46	51	111	90	87	94	83
18	53	53			46	46	55	111	90	87	94	83
19	51	50			48	46	55	114	90	87	94	80
20	51	50			44	46	55	114	90	90	94	83
21	51	46			46	46	55	111	87	90	94	80
22	51	46	a43		48	46	55	111	87	90	94	80
23	51	48			48	46	56	108	87	90	94	83
24	50	48			46	46	58	106	85	92	94	78
25	50	46			46	46	58	106	85	92	94	78
26	50	46			46	46	58	106	87	92	94	80
27	50	48			44	46	58	106	85	92	92	80
28	50	46			44	46	60	106	85	92	92	80
29	50	48			-	46	62	104	85	92	92	80
30	51	48			-	46	62	104	85	92	92	78
31	51	-			-	46	-	104	-	92	92	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,595	55	50	51.5	3,160
November	1,486	53	46	49.5	2,950
December	1,349	48	-	43.5	2,680
Calendar year 1945	18,525	70	36	50.8	36,750
January	1,384	-	-	44.0	2,710
February	1,286	-	-	45.9	2,550
March	1,414	46	44	45.6	2,800
April	1,584	62	48	52.8	3,140
May	3,127	114	62	101	6,200
June	2,744	104	85	91.5	5,440
July	2,739	92	85	88.4	5,430
August	2,904	94	92	93.7	5,760
September	2,517	92	78	83.9	4,990
Water year 1945-46	24,109	114	-	66.1	47,810

a No gage-height record; discharge interpolated.

Quinn River near Lapine, Oreg.

Location.- Water-stage recorder and wooden control, lat. 43°47', long. 121°50', in NW¼ sec. 1, T. 21 S., R. 7 E., just upstream from flow line of Crane Prairie Reservoir, 150 feet downstream from springs at head of river, and 19 miles northwest of Lapine. Zero of gage is 4,142.1 feet above mean sea level, based on elevation of Crane Prairie Reservoir (Bureau of Reclamation bench mark) in period May to September 1943, when slack water reached station.

Records available.- June 1922 to September 1925, November 1937 to September 1946.

Average discharge.- 11 years (1923-25, 1938-46), 17.0 second-feet.

Extremes.- Maximum discharge during year, 55 second-feet July 22-25 (gage height, 1.99 feet); minimum not determined.
1922-25, 1937-46: Maximum discharge, that of July 22-25, 1946; practically no flow Nov. 14, 1941.

Remarks.- Records good except those for Nov. 1 to Apr. 24, which are fair, and those for periods of no gage-height record, which are poor. No diversion or regulation above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Mar. 31 to Apr. 14, Aug. 17 to Sept. 30)

1.6	8
1.7	16
1.8	27
1.9	40
2.0	57

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	12	11			13	14	23	37	50	48	45
2	14	12	11			13	14	23	37	50	47	45
3	14	12	11			12	14	23	39	48	47	45
4	14	13	11			13	14	23	39	48	47	42
5	14	13	11			14	14	24	40	48	45	42
6	14	12	11			13	14	24	40	48	45	40
7	14	12	all			13	14	25	40	48	43	39
8	14	13	all			13	14	26	42	48	43	39
9	15	13	11			13	14	26	43	48	43	37
10	15	13	11			13	14	27	43	48	43	37
11	15	13				13	14	28	43	48	43	37
12	15	13				13	14	30	45	48	45	37
13	15	13			a12	12	14	30	45	50	45	36
14	15	13				12	14	30	47	50	45	36
15	16	13				12	a14	30	47	50	45	36
16	15	13		all		13	a15	31	47	52	47	36
17	15	13				13	a15	32	48	52	45	36
18	15	12				12	a16	34	48	52	47	36
19	15	12				13	a16	34	48	64	47	36
20	14	11				13	a17	35	50	54	48	36
21	14	12	all			13	a17	35	50	54	48	37
22	14	12				13	a18	35	52	55	48	35
23	14	12				13	a18	34	52	55	50	35
24	14	12				12	a19	35	50	55	50	35
25	14	11			12	13	19	35	50	55	50	35
26	14	11			12	14	19	35	50	54	50	35
27	14	11			12	14	20	35	48	54	48	34
28	13	11			12	14	22	35	48	52	48	34
29	12	11			-	14	22	35	48	52	47	34
30	12	11			-	14	22	36	50	50	45	34
31	12	-			-	14	-	37	-	48	45	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	440	16	12	14.2	873
November	365	13	11	12.2	724
December	341	-	-	11.0	876
Calendar year 1945	5,461.5	28	0	15.0	10,830
January	341	-	-	11.0	876
February	336	-	-	12.0	666
March	404	14	12	13.0	801
April	485	22	14	16.2	962
May	945	37	23	30.5	1,870
June	1,366	52	37	45.5	2,710
July	1,578	55	48	50.9	3,130
August	1,437	50	43	46.4	2,850
September	1,117	45	34	37.2	2,220
Water year 1945-46	9,155	55	-	25.1	18,160

a No gage-height record; discharge interpolated.

Odell Creek near Crescent, Oreg.

Location.- Water-stage recorder, lat. 43°33', long. 121°58', in SW¼ sec. 25, T. 23 S., R. 6 E., at outlet of Odell Lake, 3½ miles north of Crescent Lake and 14 miles northwest of Crescent. Datum of gage is 4,778.83 feet above mean sea level, datum of 1929.

Drainage area.- 39 square miles.

Records available.- August 1911 to August 1914 (incomplete), December 1923 to June 1924, May 1933 to September 1946.

Average discharge.- 13 years (1933-46), 67.4 second-feet.

Extremes.- Maximum discharge during year, 405 second-feet Dec. 30 (gage height, 1.37 feet), from rating curve extended above 190 second-feet; minimum, 19 second-feet Apr. 6 (gage height, 0.16 foot).
1911-14, 1923-24, 1933-46: Maximum discharge, that of Dec. 30, 1945; minimum, 12 second-feet sometime during period Sept. 7-30, 1934.

Remarks.- Records good except those above 220 second-feet, which are fair. Flow regulated at times by debris which collects on fish racks or by boards used at outlet of Odell Lake to change lake levels; slightly affected at times by seiches on Odell Lake. No diversion above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	42	105	322	108	76	64	93	163	118	66	56
2	24	46	102	300	108	76	61	93	163	118	64	56
3	25	46	93	270	102	81	59	96	163	115	64	61
4	24	46	93	278	99	78	59	99	163	115	64	61
5	24	47	93	291	96	76	37	102	163	115	61	61
6	23	47	102	249	105	76	49	105	163	111	59	59
7	24	51	118	236	115	73	56	105	152	108	56	56
8	24	52	121	224	108	71	59	105	145	108	56	56
9	24	56	111	204	102	68	64	108	138	108	56	54
10	24	64	108	185	99	68	64	111	131	105	56	54
11	24	66	99	163	96	68	61	111	128	105	54	54
12	24	78	93	145	90	81	61	115	124	105	54	52
13	24	78	87	131	84	87	59	118	131	102	51	52
14	25	76	81	121	78	84	59	118	134	102	51	52
15	26	78	76	115	76	90	59	118	141	99	49	52
16	26	81	73	108	73	87	59	118	138	93	47	54
17	26	84	71	99	71	87	61	121	134	90	47	54
18	24	93	68	96	68	84	61	128	128	84	46	52
19	25	121	64	90	66	81	61	131	128	81	49	52
20	26	115	64	87	64	78	64	141	131	81	52	52
21	27	105	64	84	64	76	66	170	134	81	52	51
22	29	99	64	102	64	73	66	173	138	81	51	49
23	26	93	66	102	61	71	66	173	141	78	51	47
24	26	90	71	118	64	73	68	177	141	78	52	49
25	26	93	71	131	66	71	73	173	138	76	52	49
26	26	99	76	121	64	68	78	173	131	73	52	49
27	30	115	93	115	76	68	81	181	124	71	51	47
28	32	124	204	111	76	66	84	185	121	73	52	47
29	32	121	355	121	-	68	96	185	118	71	59	47
30	37	111	395	118	-	66	98	173	115	68	59	47
31	40	-	360	111	-	66	-	166	-	66	58	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	821	40	23	26.5	0.679	0.78	1,630
November	2,417	124	42	80.6	2.07	2.30	4,790
December	3,641	395	64	117	3.00	3.47	7,220
Calendar year 1945	25,539	395	22	70.0	1.79	24.34	50,650
January	4,948	322	84	160	4.10	4.72	9,810
February	2,343	115	61	83.7	2.15	2.23	4,650
March	2,336	90	66	75.4	1.93	2.23	4,630
April	1,951	96	37	65.0	1.67	1.86	3,870
May	4,165	185	93	134	3.44	3.97	8,260
June	4,162	163	115	139	3.56	3.97	8,280
July	2,879	118	66	92.9	2.38	2.75	5,710
August	1,689	66	46	54.5	1.40	1.61	3,350
September	1,582	61	47	52.7	1.35	1.51	3,140
Water year 1945-46	32,934	395	23	90.2	2.31	31.40	65,320

Fall River near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°48', long. 121°34', in SE¼ sec. 31, T. 20 S., R. 10 E., downstream from spillway from ponds at State fish hatchery 10 miles northwest of Lapine.

Records available.- May to September 1912 (fragmentary) and June 1938 to September 1946 in reports of Geological Survey. October 1923 to September 1924 (at site 3 miles downstream) in report of State engineer.

Extremes.- Maximum discharge during year, 183 second-feet May 24 (gage height, 1.63 feet): minimum, 91 second-feet (regulated) Mar. 5.

1938-46: Maximum discharge, 194 second-feet sometime during period Jan. 8 to Apr. 21, 1943, and on Sept. 15, 1943, probably caused by release of water from fish hatchery; minimum, 68 second-feet (regulated) Apr. 6, 1942.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Water diverted above station only to ponds at fish hatcheries, from which water returns to river above station.

Cooperation.- Recorder inspected by employees of Oregon State Game Commission.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	a113	107	112		102	a116	151	151	144	158	
2	114	a113	106	112		104	a116	153	151	144	156	
3	114	a113	107	110		102	a116	153	151	144	158	
4	114	a113	110	106		102	116	153	149	142	160	
5	114	a113	108	106		104	116	154	149	144	154	
6	113	a113	112	110		106	116	154	149	146	154	
7	114	113	108	110		106	116	154	149	146	153	
8	114	113	108	110		108	118	156	149	149	153	a154
9	114	114	107	108		110	119	156	147	151	153	
10	114	113	107	108		112	121	154	149	151	153	
11	114	113	106	108	a108	112	124	156	147	153	153	
12	114	114	106	106		114	a125	156	147	153	154	
13	114	112	104	108		113	a127	154	147	153	153	
14	114	113	106	108		114	a128	154	147	154	153	
15		114	106	110			a129	153	147	156	154	
16		113	106	108			a131	153	147	154	151	153
17		112	106	107			a132	153	146	156	149	153
18		114	106	106			a134	153	144	156	149	151
19		112	106	106			a135	153	144	158	151	153
20		112	a106	107			a136	a153	146	156	151	153
21		110	a106	106	108		a136	a153	144	158	151	153
22		110	a106	106	107		139	a153	142	158	153	153
23	a114	110	a106	106	106	a115	139	153	142	162	154	153
24		110	a106	110	106		140	154	140	162	154	154
25		110	a107	108	102		144	153	139	162	156	154
26		110	a107	a106	104		146	153	140	158	156	154
27		110	a107	a108	107		147	151	140	158	156	153
28		108	a107	a108	102		147	153	140	160	156	154
29		108	a107	a108	-		151	153	140	160	156	154
30		108	107	a108	-		153	153	142	160	154	156
31		-	110	a108	-		-	153	-	158	154	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,533	-	-	114	7,010
November	3,354	114	108	112	6,650
December	3,314	112	104	107	6,570
Calendar year 1945	42,154	127	104	115	83,610
January	3,362	112	106	108	6,670
February	3,002	-	-	107	5,950
March	3,464	-	102	112	6,870
April	3,915	153	116	130	7,770
May	4,758	156	151	153	9,440
June	4,365	151	139	146	8,660
July	4,766	162	142	154	9,450
August	4,774	160	149	154	9,470
September	4,611	-	-	154	9,150
Water year 1945-46	47,218	162	-	129	93,660

a No gage-height record; discharge interpolated.

Little Deschutes River near Lapine, Oreg.

Location.- Water-stage recorder, lat. 43°41', long. 121°30', in SW¼ sec. 2, T. 22 S., R. 10 E., at bridge at former town of Rosland, 1¼ miles north of Lapine. Datum of gage is 4,192.81 feet above mean sea level, datum of 1929.

Records available.- September 1910 to October 1913 (incomplete), June to November 1918, August to October 1920, May 1924 to September 1946.

Average discharge.- 22 years (1924-46), 151 second-feet.

Extremes.- Maximum discharge during year, 770 second-feet Jan. 2 (gage height, 6.49 feet); minimum, 30 second-feet Oct. 5-7 (gage height, 1.32 feet).
1910-13, 1918, 1920, 1924-46: Maximum discharge, 985 second-feet Apr. 22, 1943 (gage height, 7.00 feet); minimum, 8 second-feet Sept. 2, 3, 1931 (gage height, 0.71 foot).

Remarks.- Records good except those for periods of no gage-height record, which are fair, and those for periods of ice effect, which are poor. Small diversions above station for irrigation. Flow regulated since August 1922 by Crescent Lake Reservoir (see p. p. 55).

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	73	a120	481		232	176	695	468	252	281	206
2	31	76	a115	708		231	174	672	437	238	280	208
3	31	65	a110	712		181	171	639	411	231	270	204
4	31	62	*93	581		173	172	617	397	232	263	143
5	31	59	85	479		170	173	609	389	228	257	114
6	30	57	85	371		*164	184	609	389	226	254	105
7	31	56	91	a320		159	198	615	397	219	252	99
8	31	56	88	290		162	204	621	404	216	251	95
9	31	54				159	207	627	396	215	250	90
10	31	60				174	201	625	375	214	248	86
11	31	63				180	189	617	350	210	245	82
12	31	63			(*)	189	201	607	332	206	242	80
13	31	69				188	234	599	312	198	240	78
14	33	67				173	252	599	303	194	240	71
15	33	71			b120	171	276	593	309	191	239	67
16	34	76				144	300	587	310	191	224	67
17	34	64				156	331	575	312	232	209	69
18	36	77				146	366	561	309	250	209	70
19	36	b110	b80			151	408	541	314	240	209	69
20	a37	b105		b145		146	440	527	312	236	207	67
21	a38	95				134	492	553	300	234	206	65
22	a39	86				149	536	589	289	244	203	65
23	a39	80				144	537	627	293	249	206	64
24	a62	72				146	536	678	302	243	204	64
25	a59	74				139	541	639	307	244	219	63
26	a60	72				143	559	621	305	249	210	62
27	a50	82				173	597	581	293	250	203	61
28	a48	a130	(*)		239	197	635	539	280	250	200	60
29	a52	a130	341		-	198	658	512	270	251	206	60
30	a58	a135	371		-	185	682	491	264	268	209	58
31	a64	-	413		-	177	-	483	-	286	207	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,214	64	30	39.2	2,410
November	2,339	135	54	78.0	4,640
December	3,512	413	-	113	6,970
Calendar year 1945	51,328	423	20	141	101,800
January	7,277	712	-	235	14,430
February	3,479	239	-	124	6,900
March	5,234	232	134	169	10,380
April	10,630	682	171	354	21,080
May	18,448	695	483	595	36,590
June	10,129	468	264	338	20,090
July	7,187	286	191	232	14,260
August	7,143	281	200	230	14,170
September	2,692	208	58	89.7	5,340
Water year 1945-46	79,284	712	30	217	157,300

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of unpublished record for station at Johnson Ranch, near Bend.
b Stage-discharge relation affected by ice.

Crescent Creek at Crescent Lake, near Crescent, Oreg.

Location.- Water-stage recorder and Parshall flume, lat. 43°30', long. 121°58', in sec. 11, T. 24 S., R. 6 E., 100 yards downstream from dam at outlet of Crescent Lake and 14 miles west of Crescent.

Records available.- January 1911 to July 1915, July 1927 to September 1928 (incomplete), October 1928 to September 1946.

Average discharge.- 21 years (1911-14, 1928-46), 35.4 second-feet.

Extremes (regulated).- Maximum discharge during year, 213 second-feet July 28, 29 (gage height, 2.58 feet); no flow at times.
1911-15, 1927-46: Maximum discharge, 313 second-feet July 9, 1929, Aug. 9, 1936; no flow at times.

Remarks.- Records good except those for Oct. 1 to June 16, Sept. 3-30, which are poor. Flow regulated since 1922 by Crescent Lake Reservoir (p. 55), storage being released June 19 to Sept. 2 for diversion below station through Deschutes County Municipal Improvement District Canal at Bend. No diversion above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0.5	a0.5						a0.5		h50	210	141
2	a.4							a.5		63	208	h78
3	a.6									62	206	
4										63	203	
5										33	203	
6										63	203	
7										63	202	
8										63	200	
9									a3.4	63	198	a3.6
10										63	196	
11										63	195	
12										63	194	
13										63	193	
14										64	180	
15								a1.0		96	158	
16		a.5					a0.2			143	158	h3.2
17	a.5								h19	143	157	
18									a40	142	155	
19									a40	142	154	
20									a40	150	153	
21									a40	163	152	
22									a40	164	150	
23									a40	164	149	
24									h40	164	148	a2.6
25									a40	163	146	
26									a40	163	146	
27									a40	163	144	
28									a40	187	144	
29								a1.5	a40	213	142	
30								a1.7	a40	212	141	
31								a1.9	-	210	141	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	15.5	-	-	0.50	31
November	15.0	-	-	.50	30
December	0	0	0	0	0
Calendar year 1945	13,371.7	182	0	36.6	26,530
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	6.0	-	-	.20	12
May	32.1	1.9	-	1.04	64
June	593.4	40	-	19.8	1,180
July	3,651	213	50	118	7,240
August	5,329	210	141	172	10,570
September	305.4	141	-	10.2	606
Water year 1945-46	9,946.9	213	0	27.3	19,730

a No gage-height record; discharge interpolated, or computed on basis of occasional field estimates of discharge.
h computed from staff-gage reading.

Diversions from Deschutes River near Bend, Oreg.

The following six canals, which are equipped with water-stage recorders, are the only diversions from Deschutes River between gaging stations at Benham Falls and below Bend.

Arnold Canal diverts from right bank at head of Lava Island, in SW¼ sec. 27, T. 18 S., R. 11 E.; water used for irrigation southeast of Bend.

Central Oregon Canal diverts from right bank in NE½ sec. 13, T. 18 S., R. 11 E., water used for irrigation east of Bend. (Beginning Oct. 1, 1932, record obtained upstream from intake of Pilot Butte Canal.)

Deschutes County Municipal Improvement District Canal diverts from left bank in NE¼ sec. 32, T. 17 S., R. 12 E., at Bend; water used to supplement flow of Tumalo project feed canal for irrigation near Tumalo; water stored at Crescent Lake Reservoir is diverted by this canal.

North Unit Canal diverts water from right bank in or near NE¼ sec. 29, T. 17 S., R. 12 E.; water used for irrigation near Madras.

North and Swalley Canals divert from right bank in NE¼ sec. 29, T. 17 S., R. 12 E.; water used for irrigation north of Bend, mostly near Redmond.

Records of monthly discharge of these canals, published as a group, are available from October 1926 to September 1942; records for each canal published separately prior to 1926.

Diversions, in acre-feet, water year October 1945 to September 1946

Month	Arnold Canal	Central Oregon Canal	Deschutes County Municipal Improvement District Canal	North Unit Main Canal	North Canal	Swalley Canal	Total
October	2,760	19,760	137	7,040	17,770	3,990	51,457
November	760	4,470	1,520	4,160	9,420	2,050	22,380
December	188	2,840	116	5,130	1,390	657	10,321
January	198	1,170	0	3,070	1,350	361	6,149
February	228	1,380	0	992	1,360	278	4,238
March	236	2,020	0	3,300	1,370	696	7,622
April	1,180	14,760	0	1,460	14,960	2,130	34,490
May	5,040	28,300	0	14,160	28,020	6,450	81,970
June	3,930	28,460	0	22,040	26,640	6,350	87,420
July	4,640	32,010	1,930	23,260	28,740	6,610	97,190
August	4,780	32,070	8,340	18,760	30,420	7,120	101,490
September	4,600	22,630	5,450	18,320	21,700	6,090	78,790
Water year 1945-46	28,540	189,870	17,493	121,692	183,140	42,782	583,517

Tumalo Creek near Bend, Oreg.

Location.- Water-stage recorder, lat. 44°05', long. 121°22', in SE¼ sec. 23, T. 17 S., R. 11 E., a quarter of a mile upstream from diversion dam of feed canal of Tumalo project, 4 miles upstream from mouth, and 4 miles northwest of Bend.

Drainage area.- 57 square miles.

Records available.- October 1906 to April 1908 and October 1910 to April 1913 (winters only), November 1913 to September 1946.

Average discharge.- 31 years (1913-21, 1923-46), 78.1 second-feet, excluding Columbia Southern Canal.

Extremes.- Maximum discharge during year, 670 second-feet Dec. 28 (gage height, 3.73 feet); minimum, 37 second-feet (regulated) sometime during period Sept. 8-18 (from range of stage); minimum daily, 41 second-feet Aug. 27.

1906-8, 1911-46: Maximum discharge, 1,420 second-feet about Jan. 6, 1923, from rating curve extended above 200 second-feet; maximum gage height, 5.3 feet Jan. 16, 1930 (affected by ice); minimum discharge, 1 second-foot June 28 to July 3, 1940.

Remarks.- Records good except those for periods of no gage-height record, or shifting-control, and those above 300 second-feet, which are fair; and those for periods of ice effect, which are poor. Crater Creek Canal diverts flow of tributaries of Soda Creek into head of Tumalo Creek. Columbia Southern Canal diverts from creek above station; canal records good except those below 30 second-feet; which are fair. Records of daily discharge do not include diversion by Columbia Southern Canal.

Rating table, water year 1945-46, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 26, Aug. 29 to Sept. 30)

1.5	39	2.2	148
1.6	51	2.4	197
1.8	78	2.8	260
2.0	109	2.9	375

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	58	*56	123	65	*63	61	131	247	267	55	44
2	50	56	55	118	65	81	61	135	284	295	55	45
3	52	56	55	108	a62	61	60	155	319	257	55	46
4	58	56	58	107	a62	61	60	187	327	221	55	44
5	58	56	56	99	a62	61	60	206	292	215	54	44
6	52	56	60	b95	a64	63	59	206	218	200	50	44
7	52	54	58	88	*84	63	60	212	174	218	49	a44
8	51	b55	b54	b84	b64	63	61	206	200	253	47	a44
9	49	58	b56	b80	b64	64	61	189	218	208	46	a42
10	52	58	b51	b78	64	64	60	194	189	187	46	a45
11	51	*56	b50	b76	b65	64	61	174	189	200	46	a45
12	*52	59	47	b74	b66	67	67	179	212	203	46	a45
13	56	59	b45	b72	b70	65	87	171	247	197	46	a45
14	58	65	b43	b72	65	64	67	171	274	162	46	a45
15	58	68	b41	70	61	65	72	179	200	127	44	a45
16	58	63	b45	70	61	64	77	194	181	114	45	a44
17	58	59	b44	67	60	64	87	212	164	107	44	a44
18	54	65	b42	67	59	63	101	244	206	104	45	a57
19	54	63	b43	64	60	63	111	264	270	106	45	67
20	54	b80	b45	64	60	65	106	288	303	113	45	67
21	55	b55	b45	64	60	83	101	284	380	118	43	65
22	55	56	b45	71	59	65	98	288	371	118	43	65
23	54	52	b45	67	59	61	101	227	240	95	46	67
24	55	52	b45	81	60	61	118	197	179	77	46	70
25	55	52	b47	72	58	61	146	237	174	68	45	67
26	54	58	b48	b71	56	63	174	267	166	63	44	68
27	54	66	b65	b70	77	67	155	253	148	58	41	68
28	52	72	410	b70	68	67	160	240	197	59	43	68
29	60	83	384	b67	-	65	166	203	200	61	46	70
30	68	59	*192	b65	-	64	142	203	194	60	46	71
31	81	-	144	b64	-	61	-	227	-	54	45	-

Month	Tumalo Creek					Columbia Southern canal (runoff in acre-feet)	Combined runoff in acre-feet
	Second-foot days	Discharge in second-feet			Runoff in acre-feet		
		Maximum	Minimum	Mean			
October	1,696	68	49	54.7	3,360	0	3,360
November	1,785	86	52	59.5	3,540	0	3,540
December	2,474	410	41	79.8	4,910	0	4,910
Calendar year 1945	26,461	410	10	72.5	52,480	9,110	61,590
January	2,436	123	64	78.6	4,830	0	4,830
February	1,760	77	56	62.9	3,490	0	3,490
March	1,962	67	81	63.3	3,890	0	3,890
April	2,780	174	59	92.7	5,510	0	5,510
May	6,523	208	131	210	12,940	2,460	15,400
June	6,963	380	148	232	13,810	3,870	17,680
July	4,583	295	54	148	9,090	3,620	12,710
August	1,452	55	41	46.8	2,880	2,510	5,390
September	1,625	71	42	54.2	3,220	964	4,180
Water year 1945-46	36,039	410	41	98.7	71,470	13,420	84,890

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Squaw Creek near Sisters and Columbia Southern Canal.
b Stage-discharge relation affected by ice.

Squaw Creek near Sisters, Oreg.

Location.- Water-stage recorder, lat. 44°14', long. 121°34', in NW¼ sec. 32, T. 15 S., R. 10 E., just upstream from intake of McCallister ditch and 4 miles south of Sisters.

Drainage area.- 63 square miles.

Records available.- 1913-25 (irrigation seasons only), October 1925 to September 1946. July 1906 to May 1913 at site 700 feet downstream, below intake of McCallister ditch.

Average discharge.- 34 years (1906-18, 1919-20, 1925-46), 101 second-feet.

Extremes.- Maximum discharge during year, 1,040 second-feet Dec. 28 (gage height, 4.77 feet); minimum daily discharge, 33 second-feet Dec. 15.
1906-46: Maximum gage height, about 8.75 feet (over top of gage) Nov. 22, 1909, site and datum then in use (discharge not determined); maximum discharge recorded since that time, 1,130 second-feet Dec. 2, 1941 (gage height, 3.33 feet); minimum, 19 second-feet Dec. 6, 1922.

Remarks.- Records fair except those for periods of ice effect or doubtful gage-height record, which are poor. A canal near mouth of Pole Creek, a tributary above station, diverts entire flow of that creek for irrigation of lands near Sisters.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a45	48	50	210	68	*68	51	112	255	327	171	83
2	a45	53	48	185	64	59	50	119	297	345	171	90
3	a48	51	45	160	62	54	48	139	357	321	160	85
4	a55	48	47	158	*64	50	50	168	345	294	163	83
5	a55	47	44	142	53	50	50	174	324	285	160	83
6	a50	45	48	119	44	53	50	177	279	279	145	77
7	50	42	a45	117	42	50	50	188	222	285	134	75
8	50	43	a42	105	41	50	50	188	228	342	132	74
9	50	45	a43	98	44	50	50	202	246	330	132	72
10	50	47	*41	92	44	50	50	210	225	297	132	74
11	48	47	b40	81	b40	50	48	199	237	315	132	74
12	48	47	b39	b78	b43	53	51	202	258	324	127	74
13	48	47	b37	b47	42	59	53	199	300	330	122	74
14	48	51	b35	b72	42	53	56	196	372	306	117	74
15	48	53	b33	b68	42	53	59	210	306	276	117	74
16	50	47	b36	b68	42	51	62	222	261	261	115	a72
17	47	47	b36	62	47	51	70	252	231	249	112	a70
18	45	48	b34	58	44	51	81	282	246	243	110	a68
19	45	44	b35	54	42	54	98	282	270	240	110	66
20	45	d42	b37	53	40	62	94	276	315	246	112	64
21	44	d39	b37	53	38	64	90	237	397	264	115	64
22	44	d40	b37	83	40	58	85	249	414	273	115	64
23	41	d38	b37	75	40	51	83	228	354	261	115	62
24	42	d38	b37	107	40	48	94	219	306	255	110	64
25	44	d38	b40	94	41	48	124	246	279	246	103	66
26	45	d50	b45	79	40	53	158	276	249	234	96	68
27	45	85	72	75	72	61	145	273	222	207	94	66
28	45	68	736	72	85	62	134	258	285	202	92	62
29	54	58	576	70	-	58	137	222	288	207	98	62
30	59	53	*357	b69	-	56	124	222	291	190	92	64
31	53	-	276	b68	-	53	-	237	-	166	87	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,486	59	41	47.9	2,950
November	1,449	85	38	48.3	2,870
December	3,065	736	33	98.9	6,080
Calendar year 1945	31,811	736	-	87.2	63,100
January	2,899	210	53	93.5	5,750
February	1,346	85	38	48.1	2,670
March	1,683	68	48	54.3	3,340
April	2,345	158	48	78.2	4,650
May	6,664	282	112	215	13,220
June	8,659	414	222	289	17,170
July	8,400	345	166	271	16,660
August	3,789	171	87	122	7,520
September	2,148	90	62	71.6	4,260
Water year 1945-46	43,933	736	33	120	87,140

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of combined records for Tumalo Creek and Columbia Southern Canal.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Crooked River near Post, Oreg.

Location.- Water-stage recorder, lat. 44°07', long. 120°16', in NE¼ sec. 12, T. 17 S., R. 20 E., 1 mile downstream from North Fork and 11½ miles southeast of Post. Datum of gage is 3,461.72 feet above mean sea level, datum of 1929.

Drainage area.- 2,160 square miles, of which 500 square miles is probably noncontributing.

Records available.- November 1908 to August 1911, December 1939 to September 1946.

Extremes.- Maximum discharge during year, 6,190 second-feet Dec. 28 (gage height, 6.66 feet); minimum, 10 second-feet Aug. 22, 23 (gage height, 1.02 feet).
1908-11, 1939-46: Maximum discharge, that of Dec. 28, 1945, from rating curve extended above 2,600 second-feet; minimum, 4.4 second-feet July 12, 1940.

Remarks.- Records fair except those for Dec. 30 to Jan. 17, and those for periods of ice effect or no gage-height record, which are poor. Several small diversions above station; one small canal diverts on right bank 800 feet above station for irrigation downstream; no regulation.

Rating tables, water year 1945-46, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28

1.0	7	1.8	109	3.2	760
1.1	11	2.0	156	3.5	1,060
1.2	16	2.3	241	3.8	1,410
1.4	37	2.6	362	4.2	1,950
1.6	68	2.9	520	4.6	2,520

Dec. 29 to Sept. 30

1.1	15	2.1	202
1.2	22	2.4	310
1.4	43	2.8	490
1.6	74	3.2	755
1.8	117	3.5	1,050

Note.- Same as preceding table above 3.8 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	56	174	1,320	359	1,410	1,240	895	134	71	16	27
2	29	51	146	1,100	310	1,280	1,260	800	130	59	16	26
3	30	48	134	1,020	272	1,050	1,280	791	117	53	16	32
4	30	45	134	865	258	800	1,270	809	103	49	16	32
5	30	45	130	791	302	791	1,370	818	86	46	16	29
6	30	44	130	605	254	966	1,460	731	80	39	16	27
7	30	43	231	540	236	945	1,570	668	88	41	16	a26
8	30	47	171	490	222	976	1,590	809	82	38	14	a27
9	30	47	127	395	222	1,140	1,360	773	74	39	15	a25
10	31	53	156	372	226	1,370	1,160	661	67	37	16	a28
11	35	56	164	386	219	1,310	1,240	575	62	35	16	a25
12	36	63	b100	306	222	1,290	1,770	518	57	33	16	23
13	36	65	b70	276	229	1,670	2,080	455	53	29	16	24
14	37	65	b45	280	236	1,330	2,440	400	50	30	16	25
15	37	72	b70	265	202	1,070	2,480	368	54	30	17	27
16	38	72	b90	265	199	836	2,490	326	53	26	17	32
17	40	72	b120	*276	186	800	2,620	291	53	24	17	35
18	41	68	b150	261	180	925	2,790	243	54	22	18	33
19	41	96	b90	250	189	1,180	2,670	226	51	21	15	32
20	43	78	b80	258	216	1,260	2,190	209	46	22	12	31
21	43	b66	b100	247	318	1,310	1,670	236	42	24	12	30
22	*44	b75	b125	240	368	1,380	1,450	233	41	23	11	30
23	45	86	b130	243	418	1,170	1,410	299	43	22	11	31
24	50	82	b135	299	534	1,030	1,490	295	47	22	12	31
25	48	178	b160	386	465	905	1,660	276	50	21	13	31
26	47	186	b170	359	460	1,160	1,750	268	50	21	12	30
27	48	530	b220	359	1,810	1,880	1,500	283	47	21	11	30
28	51	875	2,840	418	2,400	1,810	1,310	254	49	21	13	31
29	54	555	4,940	426	-	1,770	1,200	219	62	18	14	32
30	63	286	3,050	368	-	1,500	1,060	192	80	18	18	33
31	65	-	1,880	372	-	1,320	-	162	-	18	23	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,241	65	29	40.0	2,460
November	4,105	875	43	137	8,140
December	16,262	4,940	45	525	32,260
Calendar year 1945	126,891	4,940	10	348	251,700
January	14,038	1,320	240	453	27,840
February	11,512	2,400	180	411	22,830
March	37,634	1,880	791	1,214	74,650
April	50,830	2,790	1,060	1,694	100,800
May	14,083	895	162	454	27,930
June	2,005	134	41	66.8	3,980
July	973	71	18	31.4	1,930
August	467	23	11	15.1	926
September	875	35	23	29.2	1,740
Water year 1945-46	154,025	4,940	11	422	305,500

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations near Prineville and near Culver.
b Stage-discharge relation affected by ice.

Crooked River above Hoffman Dam, near Prineville, Oreg.

Location.- Water-stage recorder, lat. 44°09', long. 120°50', in NE¼ sec. 32, T. 16 S., R. 16 E., 0.9 mile upstream from Hoffman diversion dam and 11 miles south of Prineville. Datum of gage is 2,981.23 feet above mean sea level, datum of 1929.
Drainage area.- 2,810 square miles, of which 500 square miles is probably noncontributing.
Records available.- January 1940 to February 1941 (discharge measurements only), March 1941 to September 1946. October 1908 to December 1912 at Stearns Ranch, 5½ miles south of Prineville, below Hoffman and Stearns diversions. January 1913 to September 1914 at Hoffman Ranch, 10 miles south of Prineville, below Hoffman diversion. Records practically equivalent to those at present site except for diversions.
Extremes.- Maximum discharge during year, 5,620 second-feet Dec. 29 (gage height, 6.74 feet); minimum, 4.3 second-feet Sept. 1.
1908-12, 1913-14, 1940-46: Maximum discharge observed, 9,080 second-feet Mar. 1, 2, 1910 (gage height, 9.4 feet, former site and datum), from rating curve extended above 1,000 second-feet; no flow at times in 1940. Maximum discharge in recent years, 6,300 second-feet Mar. 28, 1943 (gage height, 7.07 feet).
Remarks.- Records good except those for Jan. 27-30 and those for periods of ice effect, which are poor. Diversions above station for irrigation; no regulation.

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29

1.4	19	2.6	313	4.3	1,860
1.6	39	2.8	433	4.8	2,500
1.8	65	3.1	640	5.3	3,170
2.0	100	3.4	880	5.8	3,910
2.3	181	3.8	1,280	6.4	4,960

Dec. 30 to Sept. 30

1.1	4	1.6	42	2.6	347
1.2	7	1.8	71	2.8	460
1.3	13	2.0	112	3.1	655
1.4	21	2.3	208		

Note.- Same as preceding table above 3.4 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	61	258	1,750	385	2,150	1,560	1,080	201	63	17	5
2	21	55	175	1,240	352	1,550	1,520	907	172	66	16	38
3	23	49	149	1,130	b340	1,310	1,570	864	156	58	16	41
4	23	46	144	1,010	b320	990	1,540	856	140	51	15	32
5	25	45	139	916	b300	872	1,640	880	132	46	14	34
6	27	44	133	740	b320	961	1,820	840	118	45	13	35
7	26	44	169	599	b300	1,050	2,030	770	108	40	12	31
8	25	43	249	578	b280	1,020	2,150	792	112	36	12	27
9	26	44	205	502	b270	1,180	1,840	907	105	38	11	26
10	25	47	141	448	b260	1,540	1,520	770	92	35	8	27
11	27	47	175	502	b260	1,640	1,380	697	84	34	6	28
12	34	59	128	436	b260	1,440	2,180	613	80	34	7	25
13	34	59	b81	358	b270	1,980	2,700	566	79	33	6	23
14	30	62	b54	337	b270	1,870	3,160	496	73	28	6	22
15	32	62	70	358	250	1,320	3,270	454	65	29	5	22
16	34	67	78	322	221	1,040	3,270	407	68	34	5	24
17	36	68	114	337	229	872	3,370	374	69	32	5	29
18	37	75	139	316	225	907	3,520	327	65	30	6	33
19	39	83	102	291	237	1,190	3,510	287	61	28	6	33
20	41	96	87	268	246	1,410	3,020	268	55	26	6	33
21	40	b70	98	255	296	1,480	2,360	264	55	25	6	31
22	39	70	121	268	390	1,640	1,900	287	58	21	8	30
23	40	89	133	291	425	1,470	1,730	291	48	21	6	29
24	39	89	139	296	578	1,250	1,790	347	43	22	6	29
25	40	90	152	430	572	1,070	1,970	337	46	20	6	29
26	41	178	159	407	520	1,060	2,190	332	47	21	8	26
27	41	211	168	379	1,160	2,280	1,980	332	46	20	7	26
28	41	713	1,510	390	3,200	2,560	1,630	327	48	19	6	26
29	44	678	4,850	316	-	2,500	1,420	282	51	18	7	26
30	52	446	4,830	322	-	2,180	1,290	255	54	17	6	27
31	57	-	2,680	407	-	1,760	-	233	-	17	6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,060	57	21	34.2	2,100
November	3,790	713	43	126	7,520
December	17,630	4,850	54	569	34,970
Calendar year 1945	138,484.2	4,850	4.6	379	274,700
January	16,199	1,750	255	523	32,130
February	12,736	3,200	221	455	25,260
March	45,542	2,560	872	1,469	90,330
April	64,830	3,520	1,290	2,161	128,800
May	16,442	1,080	233	530	32,610
June	2,529	201	43	84.3	5,020
July	1,007	66	17	32.5	2,000
August	262	17	5	8.5	520
September	847	41	5	28.2	1,880
Water year 1945-46	182,874	4,850	5	501	362,700

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

Crooked River near Culver, Oreg.

Location.- Water-stage recorder, lat. 44°33'36", long. 121°16'12", in sec. 3 (50 feet west of ¼-corner on line between secs. 2 and 3), T. 12 S., R. 12 E., 1 mile upstream from mouth, 1 mile downstream from Cove power plant, and 4 miles northwest of Culver.

Drainage area.- 4,330 square miles, of which 500 square miles is probably noncontributing.

Records available.- October 1917 to September 1946.

Average discharge.- 29 years, 1,452 second-feet.

Extremes.- Maximum discharge during year, 7,150 second-feet Dec. 31 (gage height, 7.73 feet); minimum, 920 second-feet (regulated) Oct. 14 (gage height, 1.67 feet); minimum daily, 1,300 second-feet Oct. 1-6, 18-21.
1917-46: Maximum discharge observed, 8,260 second-feet Mar. 30, 31, 1943 (gage height, 6.70 feet, site and datum then in use); minimum, that of Oct. 14, 1945; minimum, daily, 970 second-feet July 12 to Sept. 5, 1921.

Remarks.- Records good. Flow slightly regulated by Ochoco Reservoir; occasional diurnal fluctuation caused by power plant 1 mile above station. Summer flow above Prineville diverted for irrigation. Springs increase flow about 1,000 second-feet within an area extending 17 miles above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

2.5	1,320	4.5	2,940	6.5	5,260
3.0	1,650	5.0	3,410	7.0	6,000
3.5	2,045	5.5	3,930	7.5	6,780
4.0	2,490	6.0	4,560		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,300	1,390	1,760	4,210	1,910	4,150	3,160	2,800	1,560	1,430	1,370	1,430
2	1,300	1,370	1,590	3,200	1,940	3,350	2,940	2,600	1,520	1,410	1,370	1,440
3	1,300	1,350	1,520	2,850	1,890	3,030	2,890	2,420	1,480	1,400	1,370	1,440
4	1,300	1,360	1,500	2,790	1,830	2,720	2,910	2,300	1,460	1,390	1,340	1,440
5	1,300	1,350	1,490	2,770	1,830	2,370	2,890	2,260	1,440	1,390	1,330	1,460
6	1,300	1,340	1,480	2,520	1,850	2,290	2,980	2,250	1,430	1,390	1,310	1,470
7	1,310	1,330	1,460	2,210	1,840	2,380	3,100	2,180	1,430	1,390	1,310	1,460
8	1,310	1,330	1,480	2,080	1,800	2,410	3,280	2,150	1,440	1,380	1,310	1,460
9	1,310	1,350	1,520	2,010	1,780	2,430	3,380	2,260	1,420	1,390	1,320	1,460
10	1,310	1,360	1,460	1,900	1,780	2,640	3,210	2,260	1,420	1,390	1,330	1,450
11	1,310	1,370	1,440	1,840	1,770	2,950	3,020	2,150	1,380	1,360	1,320	1,440
12	1,310	1,370	1,430	1,790	1,790	2,880	2,970	2,010	1,340	1,360	1,330	1,440
13	1,310	1,370	1,440	1,750	1,770	2,840	3,590	1,910	1,360	1,350	1,330	1,430
14	1,310	1,370	1,370	1,680	1,760	3,250	4,010	1,840	1,370	1,340	1,330	1,410
15	1,310	1,380	1,350	1,670	1,780	3,220	4,480	1,780	1,430	1,370	1,340	1,410
16	1,310	1,390	1,350	1,670	1,670	2,880	4,740	1,720	1,460	1,360	1,330	1,390
17	1,310	1,380	1,360	1,680	1,570	2,660	4,810	1,670	1,440	1,370	1,330	1,390
18	1,300	1,410	1,370	1,700	1,550	2,540	4,980	1,640	1,400	1,370	1,330	1,410
19	1,300	1,410	1,390	1,670	1,540	2,600	5,230	1,590	1,410	1,360	1,340	1,430
20	1,300	1,410	1,380	1,650	1,550	2,810	5,330	1,570	1,400	1,370	1,340	1,440
21	1,300	1,410	1,390	1,670	1,570	2,940	4,840	1,520	1,400	1,360	1,340	1,430
22	1,310	1,390	1,390	1,700	1,620	2,980	4,050	1,540	1,370	1,350	1,340	1,430
23	1,330	1,380	1,410	1,810	1,680	3,080	3,620	1,610	1,380	1,340	1,330	1,440
24	1,330	1,400	1,430	1,820	1,750	2,930	3,450	1,630	1,500	1,330	1,330	1,450
25	1,340	1,410	1,460	1,860	1,940	2,780	3,310	1,700	1,590	1,350	1,340	1,430
26	1,360	1,410	1,480	1,900	1,900	2,650	3,510	1,700	1,390	1,350	1,360	1,410
27	1,340	1,470	1,500	1,850	1,880	2,730	3,690	1,690	1,410	1,340	1,370	1,410
28	1,330	1,540	1,640	1,810	2,870	3,580	3,450	1,640	1,410	1,350	1,370	1,410
29	1,330	2,060	3,880	1,840	-	3,760	3,120	1,660	1,460	1,360	1,370	1,410
30	1,340	1,990	6,480	1,870	-	3,710	2,910	1,620	1,460	1,360	1,390	1,410
31	1,360	-	6,720	1,880	-	3,450	-	1,580	-	1,360	1,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	40,780	1,360	1,300	1,315	80,890
November	42,850	2,060	1,330	1,428	84,990
December	57,920	6,720	1,350	1,868	114,900
Calendar year 1945	598,000	6,720	1,210	1,638	1,186,000
January	63,650	4,210	1,650	2,053	126,200
February	50,410	2,870	1,540	1,800	99,990
March	90,990	4,150	2,290	2,935	180,500
April	109,850	5,330	2,890	3,662	217,900
May	59,250	2,800	1,520	1,911	117,500
June	42,960	1,590	1,340	1,432	85,210
July	42,420	1,430	1,330	1,368	84,140
August	41,620	1,400	1,310	1,343	82,550
September	42,930	1,470	1,390	1,431	85,150
Water year 1945-46	685,630	6,720	1,300	1,878	1,360,000

South Fork Beaver Creek near Paulina, Oreg.

Location.- Staff gage, lat. 44°08', long. 119°45', in N½ sec. 5, T. 17 S., R. 25 E., at Palmer Ranch, 11 miles east of Paulina.

Drainage area.- 90 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. June 1944 to September 1945 in files of Bureau of Reclamation.

Extremes.- Maximum discharge during year, about 900 second-feet Dec. 28 or 29, computed on basis of records for Beaver Creek near Paulina; maximum gage height observed during year, 6.00 feet Dec. 29; practically no flow Oct. 1-16, Aug. 1 to Sept. 20, and probably at other times.
1944-46: Maximum discharge, that of Dec. 28 or 29, 1945; no flow at times.

Remarks.- Records poor. Staff gage read once daily. Entire summer flow diverted above station for irrigation and stock water. No regulation. Stage-discharge relation not defined by measurements above 40 second-feet. Daily discharges above 100 second-feet computed on basis of records for Beaver Creek near Paulina.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	3.8	9.9	56	12	200	42	34	20			0
2	0	3.2	8.8	20	12	150	42	32	19			0
3	0	3.2	7.8	16	12	88	44	28	18			0
4	0	3.2	4.9	16	12	68	46	28	16			0
5	0	3.5	a4.9	16	14	34	44	26	14			0
6	0	3.5	a4.9	16	14	34	44	26	14			0
7	0	4.1	a7.0	16	6.8	21	45	26	12			0
8	0	4.1	a5.5	15	6.8	22	45	27	12			0
9	0	4.9	a4.5	15	9.1	36	46	34	11			0
10	0	4.9	a5.2	15	12	38	46	34	9.9			0
11	0	4.9	5.8	14	16	39	46	34	9.1			0
12	0	4.9	1.6	12	28	41	46	32	9.1			0
13	0	4.9	.9	12	21	38	47	32	9.1			0
14	0	5.8	.7	9.9	27	38	47	30	8.3			0
15	0	5.8	.3	8.3	27	38	49	27	7.5			0
16	0	5.8	2.4	7.5	27	39	49	25	7.5			0
17	2.0	5.8	3.5	11	25	39	50	16	6.8			0
18	2.0	5.8	1.6	12	23	a40	50	16	6.8			0
19	2.0	5.8	1.3	14	22	a39	52	16	6.2			0
20	2.0	6.8	1.3	14	20	a38	52	18	5.8			0
21	2.0	6.8	2.4	12	20	38	51	19	5.5			
22	2.0	6.8	4.1	12	9.9	41	47	20	4.9			
23	2.0	6.8	5.8	14	9.1	42	49	21	4.9			
24	2.0	6.8	5.8	23	12	39	49	23	4.9			
25	2.0	7.8	5.8	23	14	39	41	a21	4.9			
26	2.4	7.8	6.8	16	21	41	41	a22	4.2			
27	2.4	9.9	6.8	7.5	21	42	39	23	4.2			
28	2.9	11	20	8.3	38	42	36	22	4.2			
29	2.9	11	600	8.3	-	42	36	22	4.2			
30	3.5	9.9	300	8.3	-	43	38	21	4.2			
31	3.5	-	94	12	-	44	-	21	-			-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	35.6	3.5	0	1.15	71
November	179.3	11	3.2	5.98	356
December	1,134.3	600	.3	36.6	2,250
Calendar year	-	-	-	-	-
January	460.1	56	7.5	14.8	913
February	491.7	38	6.8	17.6	975
March	1,533	200	21	49.5	3,040
April	1,359	52	36	45.3	2,700
May	776	34	16	25.0	1,540
June	268.2	20	4.2	8.94	532
July	62	-	-	2.00	123
August	0	-	-	0	0
September	10	-	-	.3	20
Water year 1945-46	6,309.2	600	0	17.3	12,520

a No gage-height record; discharge computed on basis of records for North Fork Beaver Creek and Beaver Creek near Paulina.

Beaver Creek near Paulina, Oreg.

Location.- Water-stage recorder, lat. 44°10', long. 119°56', in NE¼ sec. 26, T. 16 S., R. 23 E., three-quarters of a mile downstream from Paulina Creek, 1¾ miles downstream from Wolf Creek, and 3 miles northeast of Paulina.

Drainage area.- 425 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. October 1941 to September 1945 in files of Bureau of Reclamation.

Extremes.- Maximum discharge during year, 4,310 second-feet Dec. 28 (gage height, 10.2 feet), from rating curve extended above 450 second-feet on basis of discharge of Crooked River near Post; no flow Oct. 13-29.
1941-46: Maximum discharge, that of Dec. 28, 1945; minimum, that of Oct. 13-29, 1945.

Remarks.- Records fair except those above 600 second-feet or below 1 second-foot, which are poor. No regulation. Diversions for irrigation above station, and one on each bank diverting past station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 24)

0.1	0	1.0	49	3.5	925
.2	1.4	1.3	95	4.0	1,150
.3	3.6	1.6	170	5.0	1,600
.4	7	2.0	305	6.0	2,100
.6	16	2.5	505	7.5	2,850
.8	30	3.0	705		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	2.9	40	305	61	790	313	159	26	1.6	3.9	0.8
2	.6	2.9	31	297	62	641	290	134	24	2.5	3.9	.8
3	.6	2.9	30	301	55	449	271	115	20	1.6	3.9	1.0
4	.4	2.9	30	250	42	313	264	106	16	1.4	2.1	1.0
5	.4	3.6	30	256	50	329	282	106	12	1.3	1.0	1.0
6	.4	4.6	29	185	50	433	317	97	16	2.1	1.1	1.0
7	.3	4.6	82	173	49	417	297	84	15	4.6	1.1	1.4
8	.3	4.6	37	120	43	441	297	93	12	5.3	1.0	2.7
9	.3	5.3	25	91	45	557	290	91	10	5.6	1.0	3.2
10	.3	6.3	31	124	47	772	267	82	8.2	6.7	1.0	3.2
11	.3	7.0	29	95	45	653	250	73	7.0	6.0	1.0	3.2
12	.3	8.1	22	68	40	759	282	66	6.7	6.7	1.0	3.2
13	.1	9.0	17	72	39	1,270	337	56	7.0	7.4	1.1	3.4
14	0	8.1	15	73	41	593	409	47	7.4	6.7	1.1	3.4
15	0	8.6	14	66	45	401	441	40	7.0	6.3	1.1	3.4
16	0	8.6	15	67	44	309	453	28	6.3	6.7	1.0	3.4
17	0	9.8	17	66	45	297	477	22	6.3	6.7	1.0	3.4
18	0	9.8	17	60	44	413	533	21	5.3	6.3	1.0	3.4
19	0	14	16	57	48	549	537	20	1.8	6.0	1.0	3.4
20	0	14	14	60	73	537	453	19	1.3	5.6	.8	3.6
21	0	12	16	59	99	525	361	17	1.0	5.3	.8	3.6
22	0	10	19	62	115	493	286	18	1.6	4.6	.8	3.6
23	0	12	28	68	150	385	250	42	1.6	4.3	.8	3.6
24	0	14	43	95	170	341	242	49	1.4	3.9	.8	3.6
25	0	74	49	120	170	294	286	44	1.4	3.6	.8	3.6
26	0	51	47	102	191	408	317	46	1.3	3.4	.8	3.6
27	0	282	104	84	1,680	593	282	50	1.3	4.6	.8	3.6
28	0	309	2,310	76	2,040	525	236	47	1.6	4.3	.8	3 4
29	2.9	179	2,850	66	-	529	213	40	2.3	3.9	.8	3.4
30	2.9	73	1,030	60	-	425	179	34	2.3	3.9	.8	3.4
31	2.9	-	477	60	-	361	-	28	-	3.9	.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	13.8	2.9	0	0.45	27
November	1,153.6	309	2.9	38.5	2,290
December	7,514	2,850	14	242	14,900
Calendar year	-	-	-	-	-
January	3,638	305	57	117	7,220
February	5,583	2,040	39	199	11,070
March	15,802	1,270	294	510	31,340
April	9,712	537	179	324	19,260
May	1,874	159	17	60.5	3,720
June	231.1	26	1.0	7.70	458
July	142.8	7.4	1.3	4.61	283
August	38.9	3.9	.8	1.25	77
September	85.3	3.6	.8	2.84	169
Water year 1945-46	45,788.5	2,850	0	125	90,810

North Fork Beaver Creek near Paulina, Oreg.

Location.- Water-stage recorder, lat. 44°10', long. 119°43', in NW¼ sec. 22, T. 16 S. R. 25 E., 12 miles east of Paulina.

Drainage area.- 70 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. January 1942 to September 1945 in files of Bureau of Reclamation.

Extremes.- Maximum discharge during year, 899 second-feet Dec. 28 (gage height, 5.90 feet), from rating curve extended above 110 second-feet; minimum, 0.1 second-foot July 14-26, 29, Aug. 2-26.
1942-46: Maximum discharge, that of Dec. 28, 1945; minimum, 0.1 second-foot at times during 1944-46.

Remarks.- Records fair except those above 160 second-feet, which are poor. Several small dams above station store water for irrigation and stock watering. Most of summer flow diverted above station for irrigation.

Rating table, water year 1945-46, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Jan. 25 to Feb. 18

0.2	0.1	1.0	24	2.5	240
.3	.3	1.2	44	3.0	325
.4	1.3	1.4	71	4.0	510
.6	4.8	1.7	114	5.4	794
.8	11.5	2.0	160		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.3	5.9	60	8.3	144	72	44	4.8	0.4	0.2	0.3
2	.3	.3	4.4	58	8.7	128	68	38	4.2	.6	.2	.4
3	.3	.3	3.5	68	7.5	89	64	42	3.5	.3	a.2	.4
4	.3	.3	3.3	50	7.9	65	60	47	2.9	.2	a.2	.3
5	.3	.3	2.9	54	6.2	71	67	45	2.7	.2	a.2	.3
6	.2	.3	2.9	36	6.4	135	71	37	3.8	.2	a.2	.3
7	.2	.3	3.1	30	6.7	95	75	33	3.8	.2	a.2	.4
8	.3	.3	2.7	38	7.0	104	88	38	2.6	.2	a.2	.4
9	.3	.5	2.3	28	6.2	141	78	32	2.1	.2	a.2	.3
10	.3	.7	2.3	20	6.2	178	68	28	1.6	.2	a.2	.3
11	.3	.5	2.6	15	6.4	150	60	23	1.4	.2	a.2	.3
12	.3	.7	2.0	12	6.2	202	75	19	1.3	.2	a.2	.3
13	.3	.7	1.7	12	6.2	257	105	16	1.2	.2	a.2	.3
14	.3	.8	1.4	13	5.3	124	136	14	1.1	.1	.2	.4
15	.3	1.0	1.1	11	5.1	91	150	12	1.0	.1	.2	.5
16	.3	1.0	1.0	10	4.8	65	165	11	1.0	.1	.2	.7
17	.3	1.0	1.2	11	4.8	63	192	9.5	1.0	.1	.2	.7
18	.3	1.1	1.2	9.9	5.1	100	211	7.5	.8	.1	.2	.6
19	.3	1.9	1.3	9.1	7.9	120	203	6.7	.6	.1	.2	.5
20	.3	1.6	1.4	7.9	16	111	150	6.4	.4	.1	.2	.5
21	.3	1.3	1.9	8.3	20	110	108	9.1	.3	.1	.2	.4
22	.3	1.2	5.6	14	b19	117	86	12	.3	.1	.2	.5
23	.3	1.3	16	12	b20	88	85	18	.3	.1	.2	.5
24	.3	3.5	25	77	33	77	99	15	.8	.1	.2	.5
25	.3	29	18	44	45	63	126	11	.6	.1	.2	.5
26	.3	9.1	22	22	44	84	140	12	.5	.1	.2	.5
27	.3	33	136	15	322	155	100	11	.4	.2	.2	.5
28	.6	53	781	12	252	140	78	9.9	.4	.2	.2	.5
29	.4	36	411	9.9	-	158	71	7.9	.5	.1	.2	.6
30	.6	11	187	8.3	-	111	57	6.4	.5	.2	.2	.6
31	.5	-	96	7.9	-	88	-	5.1	-	.2	.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10.0	0.6	0.2	0.32	20
November	192.3	53	.3	6.41	381
December	1,747.7	781	1.0	56.4	3,470
Calendar year	-	-	-	-	-
January	783.3	77	7.9	25.3	1,550
February	893.9	322	4.8	31.9	1,770
March	3,624	257	63	117	7,190
April	3,108	211	57	104	6,160
May	626.5	47	5.1	20.2	1,240
June	46.2	4.8	.3	1.54	92
July	5.5	.6	.1	.18	11
August	6.3	.3	.2	.20	12
September	13.3	.7	.3	.44	28
Water year 1945-46	11,057.0	781	.1	30.3	21,920

a No gage-height record; discharge computed on basis of recorded range in stage.
b Stage-discharge relation affected by ice.

North Fork Crooked River above Deep Creek, Oreg.

Location.- Water-stage recorder, lat. 44°20', long. 120°05', in SW¼ sec. 21, T. 14 S., R. 22 E., three-quarters of a mile upstream from Deep Creek and 38 miles east of Prineville.

Drainage area.- 150 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. November 1941 to September 1945 (incomplete) in files of Bureau of Reclamation.

Extremes.- Maximum discharge during year, 1,760 second-feet Dec. 29 (gage height, 3.83 feet), from rating curve extended above 910 second-feet; minimum, 1 second-foot Oct. 1-24, Aug. 13-23, 25-27.

1941-46: Maximum discharge, 2,060 second-feet Apr. 7, 1943 (gage height, 4.17 feet), from rating curve extended above 1,000 second-feet; minimum, 0.5 second-foot Aug. 14, 15, 1942.

Remarks.- Records poor. Diversions above station for irrigation; no regulation.

Cooperation.- Prior to May 1, 1946, field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	4	41	428	199	366	550	460	90	20	3	2
2	1	3	29	360	190	496	600	410	83	12	3	2
3	1	3	27	307	178	446	650	440	75	8	2	2
4	1	2	30	222	152	404	600	483	65	7	2	3
5	1	2	29	163	139	388	650	490	58	5	2	3
6	1	2	37	150	139	394	700	422	63	5	2	2
7	1	2	44	155	137	377	800	394	61	4	2	2
8	1	2	56	144	127	394	750	502	50	4	2	2
9	1	3	49	b140	127	464	650	440	42	6	2	2
10	1	3	30	b135	147	500	550	394	39	6	2	2
11	1	3	b22	b135	137	400	700	341	33	5	2	2
12	1	4	b18	b130	127	480	800	299	27	5	2	2
13	1	3	b16	b130	117	540	900	265	26	4	2	2
14	1	4	b15	b135	113	500	1,200	240	22	4	1	2
15	1	4	14	b130	111	400	1,200	219	21	4	1	2
16	1	4	16	b130	111	350	1,250	196	18	4	1	3
17	1	4	16	b130	109	240	1,250	178	21	4	1	3
18	1	4	b16	b130	107	350	1,200	172	21	4	1	3
19	1	5	b16	b130	109	400	1,100	163	15	4	1	3
20	1	7	17	b130	107	550	850	161	12	4	1	3
21	1	6	21	b130	107	600	750	169	11	4	1	3
22	1	5	21	b130	107	650	650	175	9	4	1	3
23	1	4	21	b145	109	600	650	193	9	4	2	3
24	2	7	22	166	125	500	750	175	13	4	2	2
25	2	13	24	178	129	400	850	161	16	4	2	2
26	2	19	27	254	134	600	900	172	13	4	1	2
27	2	94	32	299	222	700	750	161	10	4	1	2
28	2	109	420	282	261	750	700	144	13	4	2	2
29	2	84	1,310	258	-	650	600	127	43	3	2	2
30	3	56	931	233	-	650	550	109	33	3	2	2
31	4	-	686	209	-	600	-	96	-	3	2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	42	4	1	1.4	83
November	465	109	2	15.5	922
December	4,053	1,310	14	131	8,040
Calendar year	-	-	-	-	-
January	5,798	428	130	187	11,500
February	3,877	261	107	138	7,690
March	15,139	750	240	488	30,030
April	24,100	1,250	550	803	47,800
May	8,351	502	96	269	16,560
June	1,012	90	9	33.7	2,010
July	160	20	3	5.2	317
August	53	3	1	1.7	105
September	70	3	2	2.3	139
Water year 1945-46	63,120	1,310	1	173	125,200

b Stage-discharge relation affected by ice.

Note.- No gage-height record Oct. 1, 2, Mar. 10 to May 2; discharge computed on basis of records for Crooked River near Post and Beaver Creek near Paulina.

Metolius River near Grandview, Oreg.

Location.- Staff gage, lat. 44°37', long. 121°27', in NE¼ sec. 19, T. 11 S., R. 11 E., at Montgomery Ranch, 8 miles northeast of Grandview.

Drainage area.- .324 square miles.

Records available.- October 1921 to September 1946.

Average discharge.- 25 years, 1,398 second-feet.

Extremes.- Maximum discharge observed during year, 3,730 second-feet Dec. 28 (gage height, 2.10 feet); minimum observed, 1,100 second-feet Dec. 14-26 (gage height, 0.20 foot). 1921-46: Maximum discharge, 5,780 second-feet Jan. 7, 1923 (gage height, 3.32 feet), from rating curve extended above 2,200 second-feet; minimum, 1,080 second-feet Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

Remarks.- Records good. Gage read once daily. No diversion or regulation above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.2	1,100	1.2	2,340
.4	1,310	1.5	2,780
.6	1,540	1.8	3,240
.9	1,920	2.0	3,560

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	1,160	1,220	1,790	1,420	1,350	1,330	1,400	1,540	1,540	1,350	1,270
2	1,140	1,160	1,200	1,740	1,400	1,350	1,310	1,400	1,540	1,540	1,350	1,240
3	1,140	1,160	1,180	1,790	1,400	1,330	1,310	1,400	1,540	1,540	1,330	1,240
4	1,140	1,160	1,160	1,790	1,380	1,310	1,310	1,400	1,560	1,490	1,310	1,240
5	1,140	1,160	1,160	1,760	1,380	1,310	1,310	1,440	1,560	1,490	1,310	1,240
6	1,140	1,160	1,160	1,740	1,470	1,310	1,290	1,440	1,540	1,470	1,310	1,240
7	1,140	1,160	1,180	1,710	1,400	1,310	1,290	1,490	1,520	1,470	1,310	1,240
8	1,140	1,160	1,160	1,640	1,380	1,310	1,290	1,490	1,490	1,470	1,290	1,240
9	1,140	1,160	1,160	1,590	1,330	1,310	1,290	1,490	1,490	1,470	1,290	1,220
10	1,140	1,160	1,160	1,540	1,330	1,310	1,290	1,490	1,490	1,470	1,290	1,220
11	1,140	1,160	1,140	1,490	1,330	1,310	1,290	1,520	1,490	1,470	1,290	1,220
12	1,140	1,160	1,140	1,440	1,310	1,460	1,290	1,540	1,490	1,470	1,290	1,220
13	1,140	1,160	1,140	1,420	1,310	1,440	1,290	1,540	1,610	1,470	1,290	1,220
14	1,140	1,160	1,100	1,380	1,310	1,440	1,290	1,520	1,660	1,470	1,290	1,220
15	1,140	1,160	1,100	1,380	1,290	1,420	1,290	1,490	1,660	1,440	1,290	1,220
16	1,140	1,160	1,100	1,350	1,290	1,420	1,290	1,490	1,590	1,420	1,290	1,220
17	1,140	1,160	1,100	1,330	1,290	1,400	1,290	1,520	1,540	1,400	1,290	1,200
18	1,140	1,240	1,100	1,310	1,290	1,380	1,290	1,540	1,540	1,400	1,290	1,200
19	1,140	1,180	1,100	1,290	1,290	1,380	1,290	1,540	1,540	1,390	1,290	1,200
20	1,140	1,180	1,100	1,290	1,290	1,380	1,330	1,540	1,540	1,380	1,290	1,200
21	1,140	1,160	1,100	1,290	1,290	1,380	1,330	1,540	1,610	1,420	1,290	1,200
22	1,140	1,160	1,100	1,290	1,290	1,380	1,330	1,540	1,640	1,420	1,290	1,200
23	1,140	1,160	1,100	1,660	1,270	1,380	1,330	1,540	1,560	1,420	1,290	1,200
24	1,140	1,160	1,100	1,760	1,270	1,380	1,350	1,540	1,540	1,400	1,290	1,200
25	1,140	1,160	1,100	1,660	1,270	1,350	1,350	1,560	1,540	1,400	1,290	1,200
26	1,140	1,270	1,100	1,540	1,270	1,350	1,490	1,690	1,490	1,380	1,270	1,200
27	1,140	1,520	1,140	1,490	1,380	1,350	1,400	1,660	1,440	1,380	1,270	1,200
28	1,140	1,420	3,160	1,490	1,350	1,350	1,400	1,640	1,810	1,380	1,240	1,200
29	1,140	1,270	3,240	1,490	-	1,350	1,400	1,610	1,490	1,380	1,240	1,200
30	1,200	1,220	2,340	1,440	-	1,330	1,400	1,610	1,490	1,380	1,240	1,200
31	1,160	-	1,950	1,420	-	1,330	-	1,560	-	1,380	1,270	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	35,420	1,200	1,140	1,143	70,250
November	35,820	1,520	1,160	1,194	71,050
December	41,290	3,240	1,100	1,332	81,900
Calendar year 1945	457,670	3,240	1,100	1,254	907,800
January	47,300	1,790	1,290	1,526	93,820
February	37,280	1,470	1,270	1,331	73,940
March	42,160	1,460	1,310	1,360	83,620
April	39,740	1,490	1,290	1,325	78,820
May	47,170	1,690	1,400	1,522	93,560
June	46,340	1,660	1,440	1,545	91,910
July	44,600	1,540	1,380	1,439	88,460
August	40,020	1,350	1,240	1,291	79,380
September	36,510	1,270	1,200	1,217	72,420
Water year 1945-46	493,650	3,240	1,100	1,352	979,100

Lake Creek near Sisters, Oreg.

Location.- Water-stage recorder, lat. 44°26', long. 121°44', in SW¼ sec. 24, T. 13 S., R. 8 E., a quarter of a mile downstream from Suttle Lake, 6 miles upstream from mouth, and 13 miles northwest of Sisters. Altitude of gage, about 3,430 feet (from topographic map).

Drainage area.- 20.5 square miles.

Records available.- 1911-13 (occasional readings during summers), April 1915 to September 1946.

Average discharge.- 30 years (1915-18, 1919-46), 48.0 second-feet.

Extremes.- Maximum discharge during year, 158 second-feet (regulated) Jan. 4 (gage height, 2.45 feet); minimum, 19 second-feet (regulated) Oct. 4, 5.
1911-13, 1915-46: Maximum discharge, 302 second-feet Jan. 10, 1923 (gage height, 2.58 feet), from rating curve extended above 150 second-feet; minimum, 1.0 second-foot (regulated) Nov. 4, 5, 1940; minimum daily, 8 second-feet Nov. 5, 1940, Oct. 6, 1942.

Remarks.- Records good. No diversion above station; occasional regulation by Suttle Lake.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.8	20	1.4	55	2.0	106
1.0	30	1.6	70	2.3	140
1.2	41	1.8	87	2.5	164

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	28	38	116	69	44	40	85	101	53	32	30
2	23	28	36	130	67	50	43	80	96	52	32	33
3	22	26	33	130	64	54	41	78	93	52	34	32
4	19	26	32	146	61	42	38	76	92	52	34	28
5	19	29	32	142	62	37	40	80	92	48	34	30
6	24	30	33	126	69	46	37	76	91	50	33	30
7	26	29	35	124	68	56	37	81	80	46	32	32
8	25	28	34	114	61	53	37	84	77	47	32	28
9	24	28	34	102	59	49	41	82	79	42	32	26
10	24	28	33	94	60	44	57	86	76	39	31	26
11	25	28	32	86	56	46	54	94	78	42	30	27
12	26	30	31	78	53	49	40	99	75	37	30	28
13	26	28	30	73	50	52	40	95	75	40	29	28
14	26	24	29	69	48	50	41	95	76	37	32	30
15	24	21	28	66	46	51	44	93	79	40	32	28
16	24	22	28	62	49	49	39	90	82	40	28	28
17	22	22	28	59	50	49	40	90	80	35	27	27
18	24	24	28	57	47	48	38	92	82	40	26	27
19	25	27	28	56	60	51	41	92	79	36	25	26
20	24	24	28	54	58	61	46	92	77	34	24	26
21	24	24	28	53	52	60	47	93	76	38	24	26
22	24	24	28	61	46	53	61	95	72	36	22	26
23	24	24	28	58	44	49	61	95	71	36	22	25
24	21	24	28	69	44	50	58	101	65	36	22	26
25	20	44	29	72	47	48	64	97	66	36	22	26
26	20	54	30	71	44	47	63	99	68	34	24	26
27	20	62	32	72	44	52	58	94	63	34	24	26
28	22	56	52	74	44	49	62	94	64	34	27	26
29	28	47	64	76	-	46	72	98	61	34	28	26
30	32	41	72	74	-	42	82	101	63	34	32	26
31	31	-	96	72	-	39	-	100	-	33	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	741	32	19	23.9	1,470
November	930	62	21	31.0	1,840
December	1,117	96	28	36.0	2,220
Calendar year 1945	14,319	124	13	39.2	28,410
January	2,636	146	53	85.0	5,230
February	1,522	69	44	54.4	3,020
March	1,516	61	37	48.9	3,010
April	1,462	82	37	48.7	2,900
May	2,807	101	76	90.5	5,570
June	2,329	101	61	77.6	4,620
July	1,247	53	33	40.2	2,470
August	888	34	22	28.6	1,760
September	829	33	25	27.6	1,640
Water year 1945-46	18,024	146	19	49.4	37,750

White River near Wapinitia, Oreg.

Location.- Water-stage recorder, lat. 45°09', long. 121°30', in NE¼ sec. 11, T. 5 S., R 10 E., 500 feet downstream from Crane Creek, 1 mile downstream from Clear Creek, and 12½ miles northwest of Wapinitia.

Drainage area.- 115 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. Sept. 20, 1941, to Oct. 1, 1943, May 17, 1944, to Sept. 30, 1945, in files of Bureau of Reclamation.

Extremes.- Maximum discharge during year, 2,010 second-feet Dec. 28 (gage height, 4.84 feet); minimum, 72 second-feet Oct. 1-4 (gage height, 1.06 feet).

Remarks.- Records good except those for Dec. 3 to Feb. 25, which are poor. No regulation; Wapinitia Irrigation Co. canal diverts from Frog Creek and Clear Creek, capacity about 25 second-feet.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 29 to Jan. 14)

1.1	75	2.1	264	3.3	840
1.3	95	2.4	380	3.7	1,100
1.5	123	2.7	515	4.1	1,390
1.8	181	3.0	665		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	102	146	533	268	282	245	595	626	252	123	95
2	73	135	135	484	255	278	242	665	632	245	122	95
3	73	107	132	425	233	261	233	816	626	233	118	95
4	73	98	146	479	222	242	230	965	585	220	117	93
5	74	98	146	520	220	239	230	946	556	214	116	95
6	78	93	177	425	225	282	236	913	533	206	116	93
7	79	90	177	380	217	271	236	870	488	204	114	91
8	79	87	157	320	201	268	236	828	488	233	111	90
9	79	92	138	282	198	268	233	852	448	264	110	88
10	78	95	135	258	196	271	236	906	420	217	108	88
11	78	93	126	252	186	268	261	900	420	209	107	88
12	80	96	120	245	181	312	282	888	425	196	107	87
13	78	95	105	245	174	316	312	888	492	188	107	87
14	78	105	100	236	172	289	360	804	515	179	104	88
15	78	112	105	220	170	278	394	762	461	168	104	92
16	78	107	112	206	168	268	452	780	416	181	103	100
17	77	100	137	201	163	264	510	858	380	157	102	107
18	75	104	120	196	161	248	585	906	372	153	100	102
19	79	107	112	196	159	248	826	920	384	151	100	94
20	79	95	112	186	157	248	595	900	384	150	100	92
21	78	92	112	186	155	248	546	858	368	150	102	94
22	65	90	112	264	155	252	510	864	324	148	100	93
23	80	88	111	252	157	245	510	792	296	142	100	92
24	80	90	116	484	163	239	585	750	293	137	99	92
25	85	95	116	384	166	233	768	780	289	133	99	96
26	84	105	114	324	161	252	882	913	268	132	98	95
27	83	258	159	420	261	293	774	894	258	128	96	94
28	81	242	1,340	289	293	289	720	864	293	126	96	93
29	86	201	1,420	275	-	286	698	798	293	126	98	93
30	99	166	900	255	-	271	621	687	261	126	96	94
31	93	-	665	255	-	252	-	643	-	123	99	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,473	99	73	79.8	4,910
November	3,438	258	87	115	6,820
December	7,803	1,420	100	252	15,480
Calendar year	-	-	-	-	-
January	9,677	533	186	312	19,190
February	5,437	293	155	194	10,780
March	8,261	316	233	286	16,390
April	13,348	882	230	445	26,480
May	25,805	965	595	832	51,180
June	12,594	632	258	420	24,980
July	5,471	264	123	176	10,850
August	3,272	123	98	106	6,490
September	2,796	107	87	93.2	5,550
Water year 1945-46	100,375	1,420	73	275	199,100

White River below Tygh Valley, Oreg.

Location.- Water-stage recorder, lat. 45°14', long. 121°06', in NW¼ sec. 8, T. 4 S., R. 14 E., just below Pacific Power & Light Co.'s plant at White River Falls and 4½ miles east of Tygh Valley.

Drainage area.- 393 square miles.

Records available.- October 1917 to September 1946.

Average discharge.- 29 years, 401 second-feet.

Extremes.- Maximum discharge during year, 4,320 second-feet Dec. 29 (gage height, 7.1 feet, on basis of observer's note and extension of graph for period when clock was stopped); minimum, 22 second-feet (regulated) Aug. 22 (gage height, -0.41 foot, but may have been less Sept. 12); minimum daily, 90 second-feet Oct. 11.
1917-46: Maximum discharge, 13,300 second-feet Jan. 6, 1923 (gage height, about 13.3 feet), from rating curve extended above 5,000 second-feet; minimum, 10 second-feet (regulated) Dec. 11-14, 1919, Aug. 9, 1931; minimum daily, 71 second-feet Aug. 31, 1941.

Remarks.- Records good except those for Dec. 13-15, 28, 29, which are fair. Diversions above station for irrigation. Low-water flow partly regulated by power plant.

Cooperation.- Water-stage recorder inspected by employees of Pacific Power & Light Co.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.8	92	2.3	445	4.9	2,070
1.0	113	2.7	605	5.6	2,750
1.3	155	3.2	840	6.3	3,450
1.6	218	3.7	1,120		
1.9	305	4.3	1,550		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97	126	234	1,010	489	605	461	855	918	363	166	126
2	95	164	213	918	481	573	445	885	906	346	162	123
3	95	164	206	830	433	533	425	1,070	901	335	160	126
4	93	133	211	923	398	497	409	1,290	855	314	157	124
5	93	133	229	1,040	391	477	405	1,310	805	305	153	125
6	93	129	234	825	505	509	409	1,260	780	293	152	128
7	93	126	311	795	481	497	405	1,220	704	284	153	123
8	92	124	269	722	425	481	409	1,150	690	293	152	119
9	91	126	232	597	421	485	405	1,190	664	363	149	118
10	91	136	221	557	402	489	402	1,280	628	311	145	117
11	90	138	208	493	380	481	425	1,240	605	293	144	114
12	95	141	199	453	363	589	453	1,240	605	293	142	115
13	96	145	188	437	352	686	485	1,220	668	293	142	117
14	96	141	a170	409	346	601	569	1,120	718	278	144	117
15	97	168	159	377	338	614	614	1,050	664	272	142	120
16	98	162	169	360	329	573	672	1,050	614	260	139	126
17	99	147	213	346	326	565	755	1,140	573	251	135	138
18	95	159	196	338	317	581	880	1,240	549	237	133	136
19	95	171	179	332	314	593	1,020	1,260	549	232	132	128
20	102	152	171	317	308	668	994	1,270	553	226	132	124
21	99	142	179	311	308	577	a850	1,210	541	226	132	125
22	111	139	181	473	305	557	a720	1,230	505	221	123	126
23	112	136	179	497	323	533	a720	1,130	465	213	125	124
24	105	135	184	967	332	537	a850	1,080	437	199	126	124
25	106	142	190	928	346	501	a1,000	1,110	429	192	125	128
26	106	152	190	722	335	489	a1,300	1,260	391	190	123	128
27	104	320	194	623	501	565	1,180	1,310	370	184	121	126
28	104	394	f2,130	577	664	561	1,130	1,260	394	175	120	125
29	112	329	f3,490	533	-	557	1,060	1,190	437	175	120	125
30	126	269	1,980	477	-	517	956	1,050	384	177	124	124
31	139	-	1,310	489	-	481	-	972	-	171	125	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,120	139	90	101	6,190
November	5,043	394	124	168	10,000
December	14,419	3,490	159	465	28,600
Calendar year 1945	110,571	3,490	90	303	219,300
January	18,656	1,040	311	602	37,000
February	10,913	664	305	390	21,650
March	16,972	666	477	547	33,660
April	20,828	1,300	402	694	41,310
May	36,162	1,310	855	1,167	71,730
June	18,302	918	370	610	36,300
July	7,965	363	171	257	15,800
August	4,298	166	120	139	8,520
September	3,719	138	114	124	7,380
Water year 1945-46	160,397	3,490	90	439	318,100

Peak discharge.- Dec. 29 (2 a.m.) 4,320 sec.-ft.; Jan. 4 (4:30 p.m.) 1,100 sec.-ft.; Jan. 24 (6:30 p.m.) 1,280 sec.-ft.

a No gage-height record; discharge computed on basis of records for station near Wapinitia.
f Computed on basis of partly estimated gage-height record.

Klickitat River above West Fork, near Glenwood, Wash.

Location.- Water-stage recorder, lat. 46°15'40", long. 121°14'30", in S½ sec. 18, T. 9 N., R. 13 E., 1½ miles upstream from West Fork and 17 miles north of Glenwood.

Drainage area.- 151 square miles.

Records available.- November 1944 to September 1946.

Extremes.- Maximum discharge during year, 1,710 second-feet May 17 (gage height, 3.28 feet); minimum recorded, 57 second-feet Nov. 20 (gage height, 1.03 feet), but may have been less sometime during period of ice effect.

1944-46: Maximum discharge, that of May 17, 1946; minimum, 48 second-feet Nov. 14, 15, 1945 (gage height, 0.98 foot), but may have been less sometime during period of ice effect.

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

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

1.1	71	1.6	232	2.3	656
1.2	95	1.8	329	2.6	900
1.4	155	2.0	446	3.0	1,320

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	103	95	288	126	120	173	696	1,070	539	180	109
2	71	115	90	246	126	120	173	736	1,130	560	177	106
3	69	129	98	216	120	117	173	892	1,160	560	173	109
4	69	133	112	203	110	115	173	1,130	1,100	518	169	109
5	69	129	*112	199	110	117	180	1,240	1,020	498	166	109
6	67	115	103	169	120	136	187	1,200	963	492	166	115
7	67	112	103	166	120	133	191	1,160	858	459	159	106
8	67	98	100	155	120	129	195	1,200	858	518	152	103
9	65	101	100	145	110	133	195	1,450	808	546	145	98
10	65	101	95	140	110	139	195	1,600	752	485	142	95
11	65	95	95	136	110	139	203	1,450	736	472	139	93
12	63	95	90	135	103	145	246	1,460	752	428	136	93
13	63	90	90	130	100	142	278	1,380	816	403	136	90
14	63	98	90	130	103	139	357	1,260	892	368	133	90
15	63	117	90	130	101	139	428	1,180	850	329	133	95
16	63	106	90	129	103	136	498	1,250	768	309	129	101
17	63	98	90	133	98	136	560	1,480	712	293	123	98
18	63	95	90	126	98	136	648	1,560	728	283	120	93
19	67	93	90	120	98	133	736	1,560	768	278	117	88
20	71	76	85	117	95	133	672	1,520	833	288	117	88
21	67	106	85	110	95	139	588	1,410	858	288	115	88
22	73	93	85	110	95	149	539	1,420	768	269	112	88
23	69	90	80	*105	98	149	560	1,300	641	250	109	88
24	73	88	80	120	103	149	656	1,370	588	232	106	85
25	85	88	75	115	103	149	875	1,450	567	220	106	83
26	90	90	83	110	101	162	1,080	1,550	511	216	126	83
27	88	123	83	110	120	195	918	1,550	478	207	112	83
28	85	129	146	110	126	191	833	1,440	504	199	106	81
29	88	117	440	110	-	191	800	1,250	567	199	106	81
30	106	101	422	110	-	184	720	1,130	539	195	106	81
31	115	-	357	110	-	173	-	1,090	-	187	117	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	2,263	115	63	73.0	0.483	0.56	4,490
November	3,124	133	78	104	.689	.77	6,200
December	3,844	440	75	124	.821	.95	7,620
Calendar year 1945	80,959	1,220	60	222	1.47	19.95	160,600
January	4,433	288	105	143	.947	1.09	8,790
February	3,022	126	95	108	.715	.74	5,990
March	4,468	195	115	144	.954	1.10	8,860
April	14,030	1,080	173	468	3.10	3.46	27,830
May	40,364	1,600	696	1,302	8.62	9.94	80,060
June	23,595	1,160	478	786	5.21	5.81	46,800
July	11,088	560	187	358	2.37	2.73	21,990
August	4,133	180	106	133	.881	1.02	8,200
September	2,829	115	81	94.3	.625	.70	5,610
Water year 1945-46	117,193	1,600	63	321	2.13	28.87	232,400

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 8-10, 12-25, Jan. 9, 10, 12-15, 21-31, Feb. 3-11, 13.

Klickitat River near Glenwood, Wash.

Location.- Water-stage recorder, lat. 46°05'30", long. 121°15'30", in SE¼ Sec. 14, T. 7 N., R. 12 E., half a mile downstream from Dairy Creek, 5 miles north of Glenwood, and 7 miles upstream from Trout Creek. Datum of gage is about 1,703 feet above mean sea level, datum of 1929.
Drainage area.- 360 square miles.
Records available.- December 1910 to September 1946 (1920-28 incomplete). October 1909 to December 1910 at site 1 mile upstream.
Average discharge.- 29 years (1909-20, 1928-46), 801 second-feet.
Extremes.- Maximum discharge during year, 3,210 second-feet May 19 (gage height, 6.05 feet); minimum, 265 second-feet sometime during period of no gage-height record Dec. 15-25 (gage height, 2.98 feet, from recorded range in stage).
1909-46: Maximum discharge, 9,870 second-feet Dec. 22, 1933 (gage height, 7.9 feet, present datum), from rating curve extended above 2,000 second-feet; minimum, 204 second-feet Nov. 28, 1931.
Remarks.- Records good except those for periods of shifting control, which are fair, and those for periods of no gage-height record, which are poor. All low-water flow of Hellroaring Creek, a tributary of Big Muddy Creek, is diverted for irrigation. No regulation.

Rating tables, water year 1945-46, except period of shifting control (gage height, in feet, and discharge, in second-feet)

Oct. 1 to June 12				June 13 to Sept. 30			
3.2	382	4.5	1,370	3.2	323	4.5	1,290
3.4	503	5.0	1,890	3.4	437	5.0	1,770
3.7	707	5.5	2,480	3.7	633	5.5	2,330
4.0	935	6.0	3,130	4.0	860	6.0	2,960

Disoharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Deo.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	305	354	410	760	440	520	588	1,760	2,180	1,280	700	468
2	305	406	390	800	420	500	588	1,820	2,260	1,280	700	456
3	310	412	410	740	380	470	595	2,050	2,340	1,270	690	443
4	300	406	440	740	370	460	602	2,420	2,290	1,230	670	437
5	305	400	480	700	500	460	616	2,540	2,140	1,190	640	425
6	310	382	510	660	470	491	636	2,560	2,010	1,180	620	425
7	310	365	429	660	450	484	650	2,520	1,850	1,150	620	425
8	316	340	388	600	420	472	664	2,560	1,800	1,220	610	419
9	321	320	360	560	410	472	672	2,790	1,720	1,320	592	413
10	305	320	382	530	400	491	686	2,940	1,600	1,230	585	407
11	310	320	360	500	400	491	714	2,840	1,560	1,190	585	401
12	316	320	340	470	390	522	802	2,900	1,590	1,150	572	413
13	310	320	320	450	380	516	863	2,820	1,710	1,100	558	437
14	316	320	300	430	370	503	1,010	2,650	1,870	1,100	546	468
15	310	340	300	410	360	503	1,130	2,540	1,820	1,000	546	437
16	295	340	300	400	350	484	1,280	2,640	1,700	1,000	532	413
17	284	340	310	390	350	491	1,420	2,920	1,570	990	526	450
18	284	350	300	380	350	478	1,560	3,090	1,570	980	526	487
19	284	350	290	370	350	472	1,740	3,120	1,630	980	532	425
20	290	340	280	360	360	466	1,670	3,050	1,740	980	539	372
21	284	370	290	420	370	478	1,530	2,900	1,790	970	539	383
22	295	400	300	490	400	503	1,450	2,900	1,720	920	532	377
23	290	390	300	450	450	503	1,460	2,660	1,510	880	539	383
24	300	380	300	530	440	503	1,610	2,740	1,400	860	526	407
25	326	370	300	497	430	510	1,940	2,880	1,350	860	513	407
26	332	420	400	447	430	568	2,310	3,050	1,270	840	500	389
27	326	460	600	466	500	664	2,130	2,990	1,200	820	506	377
28	321	470	800	453	540	650	2,060	2,820	1,240	790	481	372
29	343	460	950	447	-	636	2,000	2,570	1,340	760	468	377
30	376	430	880	417	-	602	1,820	2,350	1,310	740	456	383
31	365	-	800	435	-	582	-	2,240	-	720	462	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	9,644	376	284	311	0.864	1.00	19,130
November	11,195	470	320	373	1.04	1.16	22,200
December	13,219	950	280	426	1.18	1.37	26,220
Calendar year 1945	223,244	2,300	268	612	1.70	23.08	442,800
January	15,962	800	360	515	1.43	1.65	31,660
February	11,480	540	350	410	1.14	1.19	22,770
March	15,945	664	460	514	1.43	1.65	31,630
April	36,796	2,310	588	1,227	3.41	3.80	72,980
May	82,630	3,120	1,760	2,665	7.40	8.54	163,900
June	51,080	2,340	1,200	1,703	4.73	5.28	101,300
July	31,980	1,320	720	1,032	2.87	3.30	63,430
August	17,411	700	456	562	1.56	1.80	34,530
September	12,476	487	372	416	1.16	1.29	24,750
Water year 1945-46	309,818	3,120	280	849	2.36	32.03	614,500

Note.- No gage-height record Nov. 8 to Dec. 6, Dec. 11 to Jan. 24, Feb. 1 to Mar. 3, July 13 to Aug. 8; discharge computed on basis of recorded range in stage and records for station near Pitt. Shifting-control method used Apr. 1 to May 19, May 22 to June 12.

Klickitat River near Pitt, Wash.

Location.- Water-stage recorder, lat. 45°45', long. 120°12', in SW¼ sec. 8, T. 3 N., R. 13 E., 3½ miles south of Pitt, 5 miles upstream from Silvias Creek, and 7 miles upstream from mouth at Lyle. Altitude of gage is 285 feet (from river-profile map).

Drainage area.- 1,170 square miles.

Records available.- October 1935 to September 1946. July 1909 to January 1912 at site 7 miles upstream, published as Klickitat River at Klickitat. October 1928 to September 1935, 3½ miles upstream, published as Klickitat River at Pitt.

Average discharge.- 20 years (1909-11, 1928-46), 1,420 second-feet.

Extremes. Maximum discharge during year, 10,600 second-feet Dec. 28 (gage height, 9.15 feet), from rating curve extended above 5,300 second-feet; minimum, 496 second-feet Oct. 18, 19 (gage height, 3.43 feet).

1909-12, 1928-46: Maximum discharge observed, 21,000 second-feet Dec. 22, 1933 (gage height, 12.5 feet, site and datum then in use), from rating curve extended above 3,000 second-feet; minimum discharge, 466 second-feet Feb. 4, 1937.

Remarks.- Records excellent except those for periods of no gage-height record and those above 6,000 second-feet, which are fair. Small diversions above station for irrigation. No regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

3.7	675	5.5	2,790
4.0	960	6.0	3,600
4.3	1,280	6.5	4,500
4.6	1,610	7.0	5,480
5.0	2,100	8.0	7,660

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	542	580	830	3,770	1,560	3,020	1,910	2,500	2,790	1,790	990	743
2	542	580	780	3,860	1,560	2,860	1,850	2,500	2,860	1,790	980	726
3	548	638	790	3,600	1,390	2,720	1,790	2,640	2,940	1,790	960	718
4	535	622	1,030	3,600	1,280	2,500	1,790	3,100	2,860	1,730	950	700
5	535	615	1,100	3,430	1,320	2,360	1,730	3,430	2,720	1,670	950	700
6	542	608	1,200	2,860	2,560	2,360	1,730	3,520	2,640	1,610	920	700
7	542	594	1,500	2,860	2,300	2,300	1,730	3,430	2,430	1,610	900	709
8	542	580	1,170	2,430	1,850	2,160	1,730	3,340	2,360	1,670	880	692
9	535	568	980	2,160	1,790	2,100	1,730	3,600	2,300	1,790	860	675
10	530	580	950	2,040	1,670	2,100	1,730	3,860	2,230	1,730	850	675
11	530	580	890	1,730	1,500	2,040	1,790	3,680	2,160	1,670	840	675
12	530	587	830	1,610	1,440	2,360	1,850	3,680	2,160	1,610	830	668
13	524	568	709	1,560	1,370	2,360	1,970	3,600	2,300	1,560	810	675
14	518	574	668	1,500	1,360	2,160	2,160	3,340	2,500	1,440	790	718
15	524	615	684	1,380	1,340	2,500	2,300	3,180	2,500	1,390	770	734
16	518	615	668	1,380	1,270	2,430	2,430	3,180	2,360	1,340	770	726
17	508	608	692	1,320	1,290	2,300	2,570	3,340	2,160	1,300	752	709
18	496	645	668	1,270	1,250	2,230	2,720	3,680	2,100	1,280	752	692
19	496	645	638	1,280	1,220	2,160	2,940	3,770	2,160	1,270	760	675
20	513	608	615	1,190	1,210	2,160	2,860	3,860	2,230	1,280	770	675
21	508	a840	645	1,210	1,260	2,040	2,650	3,600	2,360	1,300	780	675
22	518	a840	652	2,300	1,370	2,040	2,430	3,680	2,300	1,300	780	a675
23	518	a810	660	1,790	2,230	2,040	2,430	3,340	2,100	1,250	800	a670
24	513	a790	660	2,680	2,100	2,160	2,430	3,340	1,910	1,190	800	a660
25	524	a780	660	2,570	2,100	2,040	2,790	3,520	1,850	1,170	790	a670
26	542	a900	668	2,100	2,040	2,100	3,340	3,770	1,790	1,160	770	a660
27	542	a1,200	800	1,910	3,070	2,360	3,180	3,860	1,730	1,100	780	a650
28	535	1,220	5,230	1,850	3,260	2,360	3,020	3,680	1,730	1,080	760	a630
29	548	1,160	8,140	1,670	-	2,300	2,860	3,340	1,850	1,060	743	a620
30	587	950	5,680	1,500	-	2,160	2,640	3,020	1,850	1,050	718	a610
31	600	-	4,220	1,500	-	2,040	-	2,860	-	1,000	728	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	16,485	600	496	532	0.455	0.52	32,700
November	21,500	1,220	568	717	.613	.68	42,640
December	45,407	8,140	615	1,465	1.25	1.44	90,060
Calendar year 1945	374,568	8,140	496	1,026	.877	11.90	743,000
January	65,850	3,850	1,190	2,124	1.82	2.09	130,600
February	47,960	3,260	1,210	1,713	1.46	1.52	95,130
March	70,820	3,020	2,040	2,285	1.95	2.25	140,500
April	69,070	3,340	1,730	2,302	1.97	2.20	137,000
May	105,240	3,860	2,500	3,395	2.90	3.35	208,700
June	68,230	2,940	1,730	2,274	1.94	2.17	135,300
July	43,980	1,790	1,000	1,419	1.21	1.40	87,230
August	25,531	990	718	824	.704	.81	50,640
September	20,505	743	610	684	.585	.65	40,670
Water year 1945-46	600,578	8,140	496	1,645	1.41	19.08	1,191,000

a No gage-height record; discharge computed on basis of records for stations on nearby streams.

West Fork Klickitat River near Glenwood, Wash.

Location.- Water-stage recorder, lat. 46°15'30", long. 121°16'30", in SW¼ sec. 14, T. 9 N., R. 12 E., at road bridge 2 miles upstream from mouth and 17 miles north of Glenwood.

Drainage area.- 87 square miles.

Records available.- November 1944 to September 1946. June to November 1910 at site just below confluence of Little Muddy Creek and Fish Lake stream; August to November 1916 at site 1 mile above mouth.

Extremes.- Maximum discharge during year, 950 second-feet May 26, 27; maximum gage height, 3.31 feet May 26; minimum, 148 second-feet Oct. 17, 18, 19 (gage height, 1.35 feet). 1910, 1916, 1944-46: Maximum discharge, that of May 26, 1946; minimum not determined, occurred sometime during period Dec. 11-25, 1944, when stage-discharge relation was affected by ice.

Remarks.- Records fair. No diversion or regulation.

Rating table, water year 1945-46, except period of ice effect
(gage height, in feet, and discharge, in second-feet)

1.4	160	2.3	474
1.6	216	2.6	609
1.8	278	3.0	800
2.0	351		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	174	a180	310	204	190	213	466	752	470	a294	243
2	163	199	a176	296	204	187	213	478	752	457	a294	240
3	163	196	a182	275	196	184	216	540	800	449	a292	237
4	163	193	a190	268	193	182	216	632	776	436	a290	237
5	160	190	*199	265	198	182	216	680	752	428	a290	231
6	160	184	202	246	199	187	219	704	704	416	a288	231
7	158	179	199	243	199	184	222	704	656	407	288	225
8	155	174	187	231	190	184	222	728	656	424	285	222
9	155	174	179	222	187	182	222	800	632	457	282	219
10	155	174	176	216	184	184	222	825	609	440	282	222
11	155	174	174	207	182	187	231	825	581	420	282	219
12	155	176	165	204	179	193	243	850	586	407	282	222
13	158	171	b162	202	179	193	259	850	632	391	278	222
14	155	179	b160	199	176	193	278	800	680	379	272	222
15	155	182	b159	193	176	193	306	776	680	363	275	222
16	153	182	b160	190	174	190	336	800	632	355	259	219
17	151	179	b160	190	174	190	355	875	591	347	256	213
18	148	182	b160	187	174	190	367	925	581	336	252	207
19	155	179	160	190	171	190	399	925	581	332	259	204
20	153	171	160	184	171	187	395	925	595	328	259	202
21	153	168	163	184	168	187	375	900	604	324	259	204
22	155	a190	165	187	171	193	355	900	586	321	259	204
23	155	a188	165	193	174	193	363	850	540	317	259	202
24	160	a186	163	228	176	196	391	850	505	310	262	202
25	160	a184	163	216	176	196	461	875	496	306	259	204
26	160	a190	163	210	174	210	536	925	496	302	259	204
27	160	a210	174	202	196	219	536	950	474	299	252	202
28	160	a220	315	199	196	216	509	925	470	299	249	199
29	171	a210	412	199	-	216	509	850	492	302	246	199
30	176	a195	363	193	-	216	483	776	483	a300	243	199
31	171	-	332	196	-	216	-	752	-	a296	249	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	4,909	176	148	158	1.82	2.10	9,740
November	5,553	220	168	185	2.13	2.37	11,010
December	6,068	412	159	196	2.25	2.59	12,040
Calendar year 1945	88,529	800	118	243	2.79	37.83	175,600
January	6,725	310	184	217	2.49	2.87	13,340
February	5,136	204	168	183	2.10	2.20	10,190
March	6,010	219	182	194	2.23	2.57	11,920
April	9,868	536	213	329	3.78	4.22	19,570
May	24,661	950	466	796	9.15	10.54	48,910
June	18,374	800	470	612	7.03	7.85	36,440
July	11,418	470	296	368	4.23	4.88	22,650
August	8,355	294	243	270	3.10	3.57	16,570
September	6,478	243	199	216	2.48	2.77	12,850
Water year 1945-46	113,555	950	148	311	3.57	48.53	225,200

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and records for Klickitat River near Pitt.
b Stage-discharge relation affected by ice.

Big Muddy Creek near Glenwood, Wash.

Location.- Water-stage recorder, lat. 46°09'00", long. 121°17'30", in W½ sec. 27, T. 8 N., R. 12½ E., 200 feet downstream from road bridge, 1 1/3 miles upstream from Cougar Creek, 1¼ miles upstream from mouth, and 9½ miles north of Glenwood.

Drainage area.- 22.5 square miles.

Records available.- November 1944 to September 1946 (fragmentary). August to November 1916 at site 3 miles above mouth; November 1916 to September 1918 at site just above mouth of Cougar Creek.

Extremes.- Maximum and minimum discharge not determined, probably occurred during period of no gage-height record.
1916-18, 1944-46: Maximum discharge not determined, occurred sometime during flood December 1917; minimum recorded, 26 second-feet Nov. 24, 1944.

Remarks.- Records poor. Possibly as much as 120 second-feet diverted during period April to September for irrigation and stock water. No regulation.

Discharge, in second-feet, water yesr October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	39	a42									-
2	62	70	a40									-
3	50	60	a43									-
4	49	54	47									-
5	55	46	43									-
6	66	43	46									-
7	69	42	42									-
8	74	39	38									-
9	79	43	38									-
10	84	43	37									-
11	88	43	38									-
12	98	42	36									-
13	92	41	36									-
14	90	50	-									-
15	90	48	-									-
16	72	44	-									-
17	54	43	-									-
18	46	41	-									-
19	45	43	-									-
20	39	40	-									-
21	39	41	-									-
22	38	40	-									-
23	37	40	-									-
24	38	40	-									-
25	40	39	-									-
26	39	48	-									44
27	38	62	-									40
28	33	58	-									41
29	39	46	-									45
30	47	44	-									42
31	41	-	-									-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,793	98	33	57.8	3,560
November	1,372	70	39	45.7	2,720
December 1-13	526	47	36	40.5	1,040
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September 26-30	212	45	40	42.4	420
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of records for other nearby streams.

Little Klickitat River near Wahkiacus, Wash.

Location.- Staff gage, lat. 45°50'30", long. 121°03'30", in SE¼ sec. 9, T. 4 N., R. 14 E., half a mile downstream from Bowman Creek, three-quarters of a mile upstream from mouth, and 2 miles northeast of Wahkiacus.

Records available.- November 1944 to September 1946.

Extremes.- Maximum discharge observed during year, 3,640 second-feet Dec. 28 (gage height, 9.00 feet), from rating curve extended above 230 second-feet; minimum observed, 18 second-feet Oct. 1-3, 5-20.
1944-46: Maximum discharge observed, that of Dec. 28, 1945; minimum observed, 17 second-feet Aug. 3-6, 11, 16-27, Aug. 29 to Sept. 3, 1945.

Remarks.- Records good. Gage read once or twice daily. Some small diversions above station for irrigation. No regulation.

Rating tables, water year 1945-46, (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Aug. 8 to Sept. 30)

Oct. 1 to Dec. 28 *				Dec. 29 to Sept. 30			
1.4	24	3.0	326	1.9	22	3.5	343
1.6	39	3.5	497	2.1	38	4.0	545
1.8	60	4.0	697	2.3	60	5.0	1,040
2.0	87	5.0	1,170	2.6	103	6.0	1,600
2.3	141	6.0	1,740	3.0	189	7.0	2,190
2.6	212	7.0	2,340				

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	26	84	a730	262	665	262	232	164	79	44	30
2	18	25	73	a790	326	568	247	217	152	79	44	30
3	18	25	81	a720	278	545	247	232	141	76	44	31
4	20	25	163	a740	169	500	232	247	141	76	42	31
5	18	25	131	a900	247	455	232	262	141	73	42	31
6	18	29	163	a720	1,210	415	232	278	137	73	39	31
7	18	29	200	a780	840	378	232	278	133	70	41	31
8	18	27	163	a650	415	343	217	310	125	68	39	30
9	18	27	133	a540	396	343	217	310	121	70	39	30
10	18	27	119	a450	360	343	232	310	117	70	37	30
11	18	27	105	a370	310	343	247	294	114	68	37	30
12	18	29	90	a310	278	455	247	278	a110	65	36	31
13	18	30	79	a280	247	415	247	262	107	65	36	30
14	18	30	51	a260	247	343	278	247	129	68	37	31
15	18	34	60	a190	247	545	278	247	121	68	38	33
16	18	35	60	a200	232	415	310	232	117	65	35	33
17	18	35	61	a190	232	415	310	232	114	58	34	32
18	18	39	49	189	232	378	310	217	110	55	34	32
19	18	35	49	189	232	360	360	217	103	53	34	32
20	18	35	45	176	232	360	310	217	100	53	33	a30
21	20	32	51	232	217	343	310	217	100	50	33	29
22	20	30	53	790	310	326	278	203	93	48	33	31
23	22	30	58	500	790	310	262	203	93	46	33	31
24	22	29	51	890	640	310	278	203	92	46	32	29
25	22	30	52	568	500	326	278	203	90	46	32	28
26	22	79	53	396	478	378	294	217	87	48	32	28
27	22	131	108	343	940	360	310	217	84	48	32	29
28	22	212	1,920	343	890	343	278	217	81	46	31	30
29	22	163	1,950	326	-	326	262	203	76	44	31	31
30	26	101	a1,300	278	-	310	262	176	79	44	31	30
31	27	-	a950	247	-	310	-	164	-	44	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	609	27	18	19.6	1,210
November	1,431	212	25	47.7	2,840
December	8,505	1,950	45	274	16,870
Calendar year 1945	32,881	1,950	17	90.1	65,230
January	14,287	900	176	461	28,340
February	11,777	1,210	189	421	23,360
March	12,226	665	310	394	24,250
April	8,059	360	217	269	15,980
May	7,342	310	164	237	14,560
June	3,372	164	76	112	6,690
July	1,862	79	44	60.1	3,690
August	1,116	44	31	36.0	2,210
September	915	33	28	30.5	1,810
Water year 1945-46	71,501	1,950	18	196	141,800

a No gage-height record; discharge computed on basis of records for Panther Creek near Carson.

Hood River near Hood River, Oreg.

Location.- Water-stage recorder, lat. 45°42', long. 121°31', in SE¼ sec. 36, T. 3 N., R. 10 E., at Powerdale, a quarter of a mile upstream from Pacific Power & Light Co.'s plant and three-quarters of a mile south of town of Hood River. Datum of gage is 106.23 feet above mean sea level, datum of 1929.
Drainage area.- 329 square miles.
Records available.- March 1913 to September 1946.
Average discharge.- 33 years, 1,033 second-feet (including flow of Pacific Power & Light Co.'s conduit).
Extremes.- Maximum discharge during year (river only), 12,900 second-feet Dec. 28 (gage height, 7.82 feet); minimum, 26 second-feet (regulated) Nov. 9; minimum daily (including discharge of Pacific Power & Light Co.'s conduit), 337 second-feet Oct. 7.
1913-46: Maximum discharge, 34,000 second-feet Jan. 6, 1923 (gage height, 11.1 feet), no diversion by power conduit; minimum, 3 second-feet Aug. 9, 1926; minimum daily (including discharge of Pacific Power & Light Co.'s conduit), 165 second-feet Aug. 5, 1941.
Remarks.- Records good. Diversions above station for irrigation. Daily discharge regulated by pondage at sawmill at Dee and by Pacific Power & Light Co.'s conduit, which diverts water around gage.
Cooperation.- Water-stage recorder inspected by employees of Pacific Power & Light Co.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30					
1.2	37	2.4	290	0.7	40	1.7	260	4.0	2,300
1.4	56	2.7	425	.8	52	2.1	400	4.6	3,340
1.6	81	3.0	610	1.0	82	2.5	580	5.3	4,950
1.8	115	3.4	990	1.2	120	3.0	960	6.0	8,700
2.1	190	3.8	1,530	1.4	170	3.5	1,560	6.7	8,800

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	43	634	2,670	1,270	1,640	1,070	879	906	598	83	50
2	36	246	626	2,580	1,170	1,500	1,040	915	990	586	73	47
3	35	184	464	2,210	970	1,320	1,010	1,150	990	530	55	48
4	36	209	492	2,550	s22	1,100	960	1,420	906	464	85	47
5	35	108	610	2,930	830	1,040	960	1,320	798	432	44	51
6	37	58	1,780	2,320	1,430	1,560	960	1,190	854	400	46	52
7	157	45	1,780	2,270	1,160	1,280	933	1,130	703	382	40	52
8	53	32	1,040	1,850	960	1,160	831	1,040	696	575	44	53
9	50	35	889	1,480	879	1,080	478	1,060	661	980	42	56
10	51	115	589	I,280	806	980	560	1,190	586	604	41	56
11	52	141	486	1,070	689	942	806	1,130	560	585	62	59
12	51	258	390	915	828	2,200	782	1,170	575	530	40	60
13	49	302	314	822	592	1,860	814	1,100	782	490	38	59
14	45	435	258	710	550	1,420	862	951	1,050	420	38	58
15	39	582	218	628	540	1,640	862	854	942	365	37	86
16	37	540	212	586	510	1,700	915	879	782	288	40	58
17	36	561	272	555	530	1,700	1,000	1,050	668	254	40	51
18	39	980	212	535	530	a1,550	1,140	1,140	654	236	54	51
19	38	792	170	540	510	a1,450	1,170	1,170	696	224	46	50
20	38	430	160	500	490	1,340	1,090	1,220	758	251	50	51
21	165	286	160	525	a510	1,250	990	1,140	786	284	47	48
22	48	202	144	2,020	b515	1,300	854	1,180	682	320	47	48
23	47	144	137	1,520	a610	1,300	822	1,000	555	257	48	46
24	44	124	294	4,100	a710	1,320	906	1,000	500	191	50	50
25	42	302	279	2,810	a810	1,250	1,210	1,120	610	142	47	50
26	42	s28	265	1,980	a720	1,360	1,490	1,410	472	125	47	48
27	40	3,500	911	1,600	2,300	1,490	1,190	1,550	485	76	48	51
28	174	2,320	9,000	1,480	2,090	1,380	1,050	1,490	648	60	47	47
29	52	1,370	7,120	1,090	-	1,300	1,140	1,280	768	108	51	47
30	87	880	4,220	915	-	1,190	1,020	1,020	604	106	50	46
31	62	-	3,160	960	-	1,120	-	951	-	48	50	-

Month	Observed				Pacific Power & Light Co.'s conduit near Hood River (acre-feet)	River and conduit combined			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	174	35	56.7	3,490	20,790	24,280	395		
November	3,500	32	535	31,840	27,970	59,810	1,005		
December	9,000	137	1,200	73,760	28,310	102,070	1,660		
Calendar year 1945	9,000	25	512	370,720	298,800	669,520	925		
January	4,100	500	1,548	95,210	28,590	123,800	2,013		
February	2,300	490	862	47,860	26,990	74,850	1,348		
March	2,200	942	1,378	84,740	14,630	99,370	1,616		
April	1,490	476	964	57,350	21,290	78,640	1,322		
May	1,550	854	1,132	69,620	28,880	98,500	1,602		
June	1,050	472	722	42,930	27,360	70,290	1,181		
July	960	48	351	21,580	29,930	51,490	857		
August	86	37	49.4	3,030	24,360	27,390	445		
September	86	46	52.5	3,130	20,990	24,120	405		
Water year 1945-46	9,000	32	738	534,520	300,090	834,610	1,153		

Peak discharge.- Nov. 27 (7 a.m.) 4,120 sec.-ft.; Dec. 28 (4 p.m.) 12,900 sec.-ft.; Jan. 5 (7:30 a.m.) 3,240 sec.-ft.; Jan. 24 (8 a.m.) 4,900 sec.-ft.
a No gage-height record; discharge computed on basis of records for Pacific Power & Light Co.'s conduit and West Fork Hood River near Dee.

West Fork Hood River near Dee, Oreg.

Location.- Water-stage recorder, lat. 45°36', long. 121°38', in SE¼ sec. 1, T. 1 N., R. 9 E., a quarter of a mile upstream from Dead Point Creek, half a mile upstream from mouth, and 1 mile northwest of Dee. Datum of gage is 802.1 feet above mean sea level, datum of 1929.

Drainage area.- 96 square miles.

Records available.- September 1913 to February 1916 (incomplete), June 1932 to September 1946.

Average discharge.- 14 years (1932-46), 499 second-feet.

Extremes.- Maximum discharge during year, 9,660 second-feet Dec. 28 (gage height, 10.7 feet, from floodmark), from rating curve extended above 5,000 second-feet; minimum, 123 second-feet Oct. 18 (gage height, 1.68 feet).
1913-14, 1932-46: Maximum discharge, 12,900 second-feet Dec. 22, 1933 (gage height, 12.4 feet), from rating curve extended above 5,000 second-feet; minimum, 93 second-feet Aug. 22, 1941 (gage height, 1.37 feet).

Remarks.- Records good except those for periods of no gage-height record and those for Jan. 3-15, which are fair. Diversions above station for irrigation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.7	425	3.1	605	6.0	2,720
2.0	189	3.6	865	7.0	3,820
2.3	275	4.2	1,230	8.5	5,940
2.7	425	5.0	1,820	10.0	8,400

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	137	250	700	2,000	904	1,080	474	655	660	520	230	162
2	141	456	520	1,600	799	1,010	456	690	700	520	227	160
3	139	331	560	1,370	670	887	434	848	660	500	218	158
4	136	275	582	1,740	592	760	425	980	605	460	215	158
5	134	317	592	2,050	582	735	421	887	569	440	215	180
6	134	269	1,880	1,490	926	1,160	421	826	615	420	215	164
7	134	244	1,510	1,530	730	950	413	788	546	390	207	158
8	134	215	980	1,130	630	882	425	755	551	500	197	151
9	132	235	745	876	582	810	430	766	515	750	194	151
10	132	292	620	745	542	750	538	821	479	600	194	151
11	132	289	538	569	502	745	720	788	456	540	192	151
12	130	417	500	502	470	1,690	705	799	461	500	189	149
13	128	434	450	456	443	1,270	745	766	564	450	187	149
14	128	615	420	413	434	986	745	675	655	400	184	156
15	126	680	400	381	417	992	755	630	635	370	184	171
16	130	650	350	353	409	569	782	675	560	350	182	187
17	128	625	400	334	434	740	826	788	515	330	178	173
18	123	920	380	361	438	665	904	832	497	310	173	160
19	130	772	370	365	421	620	887	838	506	300	178	156
20	130	542	360	345	409	582	848	848	524	320	182	156
21	130	450	370	417	409	569	766	810	502	350	178	160
22	178	380	360	1,290	425	592	670	810	461	300	173	156
23	149	350	340	986	506	587	640	705	425	270	175	153
24	139	340	400	2,780	574	582	720	710	421	266	175	153
25	139	330	390	1,580	675	574	909	772	497	260	168	153
26	132	1,000	380	1,120	615	675	1,000	892	417	250	164	151
27	137	2,500	1,100	898	1,410	720	832	974	410	235	164	149
28	136	2,000	8,000	782	1,380	655	750	968	500	238	166	145
29	173	1,100	6,000	685	-	600	804	848	580	244	173	145
30	238	900	3,500	596	-	546	725	705	500	238	166	147
31	205	-	2,500	665	-	506	-	655	-	230	166	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,394	238	123	142	8,720
November	18,178	2,500	215	606	36,060
December	36,197	8,000	340	1,168	71,800
Calendar year 1945	197,939	8,000	123	542	392,600
January	30,409	2,780	334	981	60,320
February	17,328	1,410	409	619	34,370
March	24,489	1,690	506	790	48,570
April	20,170	1,000	413	672	40,010
May	24,504	980	630	790	48,600
June	15,986	700	410	533	31,710
July	11,851	750	230	382	23,510
August	5,809	230	164	187	11,520
September	4,713	187	145	157	9,350
Water year 1945-46	214,028	8,000	123	586	424,500

Note.- No gage-height record Nov. 21 to Dec. 3, Dec. 12 to Jan. 2, June 27 to July 23; discharge computed on basis of records for White River near Wapinitia and Hood River near Hood River.

Pacific Power & Light Co.'s conduit near Hood River, Oreg.

Location.- Venturi meter and electrical-output meter, lat. 45°42', long. 121°30', in NE¼ sec. 36, T. 3 N., R. 10 E., at Pacific Power & Light Co.'s plant on Hood River, half a mile southeast of town of Hood River.

Records available.- October 1922 to September 1946. October 1913 to September 1914 and January 1916 to July 1922 at site in tailrace of former plant.

Average discharge.- 24 years (1922-46), 363 second-feet.

Extremes.- Maximum daily discharge during year, 500 second-feet Dec. 31, Jan. 19; no flow Mar. 17 to Apr. 7, and occasionally at other times when power plant was shut down. 1913-14, 1916-46: Maximum discharge observed, 510 second-feet Dec. 30, 1932; no flow at times.

Remarks.- Records good. Discharge computed from relation between flow in conduit and output of power plant, based on discharge measurements. Pacific Power & Light Co.'s conduit diverts from Hood River in SE¼ sec. 11, T. 2 N., R. 10 E., just below Neal Creek. Water is diverted around station on Hood River near town of Hood River and returned to river in NE¼ sec. 36, T. 3 N., R. 10 E.

Cooperation.- Hourly readings of venturi meter and record of daily electrical output furnished by Pacific Power & Light Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	322	476	494	471	485	482	0	479	465	482	445	359
2	333	484	307	456	483	479	0	479	460	482	467	352
3	333	475	494	483	484	479	0	480	457	486	465	342
4	319	327	496	468	484	478	0	479	458	490	429	345
5	319	495	495	463	480	458	0	480	456	490	458	384
6	335	494	486	306	472	494	0	480	451	493	452	368
7	180	494	478	482	474	493	0	479	450	494	430	337
8	318	478	481	481	473	493	124	479	452	493	417	329
9	327	480	311	480	489	481	481	478	454	490	401	319
10	318	492	496	480	492	494	485	477	454	492	411	322
11	320	466	498	480	492	492	486	472	457	492	394	323
12	321	486	499	479	493	480	484	441	459	491	407	329
13	317	495	499	481	479	468	481	470	462	489	401	332
14	323	497	498	492	488	481	473	470	460	489	393	341
15	327	486	499	487	489	482	482	468	462	487	387	347
16	338	487	442	480	491	142	482	468	464	488	399	402
17	335	489	498	467	492	0	483	468	461	488	370	388
18	331	445	497	499	491	0	484	469	463	488	348	359
19	360	469	497	500	490	0	483	471	463	488	380	347
20	367	490	497	498	491	0	484	468	463	489	400	342
21	216	488	500	495	490	0	485	462	464	490	394	364
22	424	489	498	473	489	0	483	462	451	488	378	359
23	378	489	497	468	491	0	483	464	464	485	391	350
24	362	491	498	426	492	0	483	452	464	481	390	361
25	367	300	499	466	490	0	482	465	464	485	377	370
26	359	452	498	480	479	0	480	474	464	483	345	369
27	359	445	496	420	490	0	482	471	445	483	334	359
28	209	473	304	280	476	0	485	467	481	479	339	357
29	421	485	301	491	-	0	479	463	462	481	356	358
30	477	483	257	493	-	0	479	463	466	482	360	369
31	465	-	463	491	-	0	-	463	-	472	364	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10,480	477	180	388	20,790
November	14,100	497	300	470	27,970
December	14,273	500	257	460	28,310
Calendar year 1945	150,646	500	163	413	298,800
January	14,416	500	280	465	28,590
February	13,609	493	472	486	26,990
March	7,376	494	0	238	14,630
April	10,733	486	0	358	21,290
May	14,561	480	441	470	28,880
June	13,796	481	445	460	27,360
July	15,090	494	472	487	29,930
August	12,282	467	334	396	24,360
September	10,583	402	319	353	20,990
Water year 1945-46	151,299	500	0	415	300,100

White Salmon River near Underwood, Wash.

Location.- Water-stage recorder, lat. 45°45'00", long. 121°31'30", in NW¼ sec. 14, T. 3 N., R. 10 E., 1,000 feet downstream from Northwestern Electric Co.'s Condit power plant and 2 miles north of Underwood and mouth.

Drainage area.- 384 square miles.

Records available.- March 1915 to September 1930, September 1935 to September 1946. October 1912 to February 1913 at site at Condit Dam, 1 mile upstream.

Average discharge.- 26 years (1915-30, 1935-46), 1,014 second-feet.

Extremes.- Maximum discharge during year, 5,280 second-feet (regulated) Dec. 29 (gage height, 7.73 feet); minimum, 91 second-feet (regulated) Dec. 21 (gage height, 1.93 feet); minimum daily, 348 second-feet (regulated) Nov. 25.
1915-30, 1935-46: Maximum discharge, 9,700 second-feet Dec. 29, 1917 (gage height, 9.5 feet, datum then in use, relation to present datum unknown); practically no flow at times when power plant is shut down.

Remarks.- Records excellent. Many diversions near Trout Lake for irrigation. Flow regulated by power plant.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

2.0	101	3.0	356	5.0	1,660
2.2	133	3.5	573	5.5	2,200
2.4	173	4.0	865	6.0	2,800
2.7	254	4.5	1,230	7.0	4,150

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	626	520	866	2,560	1,410	1,820	1,240	1,480	1,740	1,420	812	†638
2	530	472	†748	2,650	1,440	1,790	1,250	1,450	†1,720	1,400	796	818
3	507	494	701	2,470	†1,350	†1,680	1,210	1,510	1,720	1,370	785	762
4	525	†428	970	2,450	1,310	1,580	1,210	1,650	1,700	1,330	†802	760
5	504	564	920	2,480	1,300	1,510	1,160	†1,760	1,660	1,290	933	771
6	496	484	1,050	†2,200	1,420	1,570	1,170	1,770	1,620	1,250	770	722
7	†402	512	1,260	1,990	1,430	1,510	†1,160	1,730	1,600	†1,250	793	762
8	618	476	1,250	1,770	1,360	1,460	1,150	1,640	1,570	1,210	759	†647
9	494	525	†950	1,550	1,350	1,430	1,180	1,710	†1,570	1,370	783	901
10	486	470	942	1,460	†1,320	†1,400	1,130	1,790	1,500	1,290	742	746
11	536	†386	864	1,340	1,310	1,380	1,250	1,790	1,460	1,300	†629	762
12	495	609	769	1,290	1,240	1,620	1,220	†1,810	1,450	1,240	872	763
13	522	536	724	†1,290	1,250	1,600	1,320	1,830	1,490	1,210	815	695
14	†378	502	688	1,180	1,150	1,520	†1,280	1,780	1,690	†1,110	792	706
15	634	618	684	1,130	1,140	1,610	1,320	1,710	1,790	1,130	758	†609
16	485	598	†566	1,090	1,140	1,510	1,420	1,690	†1,750	1,060	767	841
17	444	625	838	1,050	†1,140	†1,520	1,470	1,770	1,630	975	770	744
18	446	†671	566	1,050	1,130	1,460	1,530	1,880	1,610	918	†662	696
19	464	667	608	1,050	1,110	1,440	1,540	†1,960	1,570	935	858	670
20	482	550	677	†1,000	1,110	1,420	1,570	2,000	1,590	927	780	679
21	†380	558	542	1,040	1,130	1,370	†1,540	1,920	1,570	†853	742	655
22	643	412	614	1,160	1,150	1,380	1,470	1,950	1,560	1,010	758	†652
23	442	594	†529	1,280	1,300	1,370	1,430	1,940	†1,480	935	746	668
24	464	548	657	2,270	†1,320	†1,410	1,440	1,910	1,420	865	751	680
25	472	†348	704	2,310	1,430	1,370	1,530	1,900	1,440	864	†605	662
26	460	833	649	1,810	1,410	1,360	1,640	†1,970	1,440	844	866	661
27	466	1,240	856	†1,650	1,810	1,390	1,670	2,130	1,370	850	762	582
28	†376	1,070	2,930	1,540	1,950	1,390	†1,590	2,120	1,380	†831	744	686
29	567	1,140	4,270	1,470	-	1,370	1,620	2,000	1,570	823	714	†492
30	522	899	†3,820	1,380	-	1,330	1,580	1,890	†1,500	792	736	701
31	559	-	3,030	1,350	-	†1,320	-	1,780	-	810	702	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	15,425	643	376	498	30,600
November	18,349	1,240	348	612	36,390
December	35,242	4,270	529	1,137	69,900
Calendar year 1945	327,182	4,270	348	896	649,000
January	50,310	2,650	1,000	1,623	99,790
February	36,910	1,950	1,110	1,318	73,210
March	45,890	1,820	1,320	1,480	91,020
April	41,290	1,670	1,130	1,376	81,900
May	56,220	2,130	1,450	1,814	111,500
June	47,160	1,790	1,370	1,572	93,540
July	33,462	1,420	792	1,079	66,370
August	23,604	933	602	761	46,820
September	21,131	901	492	704	41,910
Water year 1945-46	424,993	4,270	348	1,164	843,000

Little White Salmon River near Willard, Wash.

Location.- Staff gage, lat. 45°48'00", long. 121°38'30", in SW¼ sec. 26, T. 4 N., R. 9 E., 300 feet upstream from Moss Creek and 1½ miles north of Willard.

Drainage area.- 40.6 square miles.

Records available.- November 1944 to September 1946.

Extremes.- Maximum discharge during year, 1,900 second-feet Dec. 29 (gage height, 6.40 feet); minimum observed, 12 second-feet Sept. 25-30.
1944-46: Maximum discharge observed, 1,900 second-feet Feb. 8, Dec. 29, 1945; maximum gage height, that of Dec. 29, 1945; minimum observed, 12 second-feet Aug. 23, 24, 25, 1945, Sept. 25-30, 1946.

Remarks.- Records good except those for periods of shifting control, which are fair. Gage read once daily, oftener during periods of high water. No diversion or regulation above station.

Rating tables, water year 1945-46, except periods of shifting control (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
1.2	18	3.0	330	1.4	16	3.5	470
1.4	35	3.5	500	1.6	28	4.0	670
1.6	55	4.0	710	2.0	71	5.0	1,140
2.0	102	5.0	1,190	2.5	164	6.0	1,680
2.5	195	6.0	1,730	3.0	300		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	24	220	850	365	585	164	136	79	64	35	21
2	13	24	184	850	365	545	159	131	77	59	33	19
3	13	24	195	895	315	418	150	140	77	59	32	18
4	13	23	273	850	300	365	140	145	77	56	32	17
5	13	23	301	940	285	382	140	154	75	53	30	18
6	13	23	500	940	315	330	140	140	78	51	30	18
7	13	23	540	625	435	315	136	138	72	51	28	19
8	13	21	392	470	365	300	136	131	72	75	28	18
9	13	23	246	400	348	270	136	131	74	64	28	17
10	13	26	233	330	348	242	164	127	71	57	27	16
11	15	35	195	300	285	242	242	122	68	55	27	16
12	15	35	184	270	256	452	228	118	68	51	25	16
13	15	45	151	228	242	418	228	111	72	51	25	16
14	15	77	142	215	228	365	228	107	81	49	25	15
15	15	96	142	202	215	382	228	104	75	49	24	20
16	13	116	109	189	215	330	215	100	72	48	24	20
17	13	132	109	189	215	300	228	104	71	46	23	18
18	13	195	109	189	215	270	242	100	68	46	21	18
19	15	184	109	189	215	256	228	100	66	44	21	16
20	15	162	102	189	228	228	215	102	66	43	21	16
21	16	132	89	189	228	215	189	98	66	41	21	16
22	23	89	89	189	228	228	164	96	62	41	20	18
23	18	73	83	202	228	242	159	92	62	41	20	15
24	18	66	102	1,190	315	242	164	91	64	39	20	15
25	18	70	96	1,040	365	228	176	88	64	39	19	12
26	16	132	89	670	382	242	202	88	61	37	19	12
27	18	710	151	505	625	242	189	91	66	37	18	12
28	20	580	1,460	435	670	242	154	90	79	37	18	12
29	24	426	1,900	382	-	215	154	84	77	37	17	12
30	24	301	1,240	330	-	202	145	81	70	35	17	12
31	24	-	895	330	-	215	-	81	-	35	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	495	24	13	16.0	0.394	0.45	982
November	3,890	710	21	130	3.20	3.56	7,720
December	10,630	1,900	83	343	8.45	9.74	21,080
Calendar year 1945	47,022	1,900	12	129	3.18	43.06	93,270
January	14,772	1,190	189	477	11.7	13.53	29,300
February	8,796	670	215	314	7.73	8.06	17,450
March	9,508	585	202	307	7.56	8.71	18,860
April	5,443	242	136	181	4.46	4.99	10,800
May	3,419	154	81	110	2.71	3.13	6,780
June	2,130	81	61	71.0	1.75	1.95	4,220
July	1,490	75	35	48.1	1.18	1.36	2,960
August	744	35	16	24.0	.591	.68	1,480
September	487	21	12	16.2	.399	.45	966
Water year 1945-46	61,804	1,900	12	169	4.16	56.61	122,600

Note.- Shifting-control method used Nov. 27 to Dec. 28, Jan. 24 to Mar. 3, May 20 to July 19.

Little White Salmon River at Willard, Wash.

Location.- Water-stage recorder, lat. 45°47'00", long. 121°37'30", in NW¼ sec. 1, T. 3 N., R. 9 E., a quarter of a mile downstream from Lava Creek at Willard.

Drainage area.- 117 square miles.

Records available.- December 1944 to September 1946. November 1903 to August 1906 (fragmentary).

Extremes.- Maximum discharge during year, 3,200 second-feet Dec. 28 (gage height, 8.80 feet), from rating curve extended above 1,000 second-feet; minimum, 8.3 second-feet Oct. 26 (gage height, 1.14 feet).

1903-6, 1944-46: Maximum gage height, 9.5 feet Feb. 8, 1945, from doubtful high-water mark on gage (discharge uncertain; figure published in Water-Supply Paper 1044 appears to be too low); minimum, that of Oct. 26, 1946.

Remarks.- Records fair. Small diversion for water supply. Other diversions for irrigation and for industrial and hatchery purposes. No regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.2	10	2.0	50	3.3	220	6.0	820
1.4	17	2.3	77	3.6	276	7.0	1,320
1.6	28	2.6	112	4.0	358	8.0	2,240
1.8	37	3.0	170	5.0	578	9.0	3,460

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	14	466	960	717	820	499	444	499	444	358	176
2	15	15	411	1,120	765	790	477	444	488	444	358	172
3	18	13	422	1,120	717	765	466	455	499	444	348	164
4	17	12	499	1,250	693	717	455	477	499	444	348	159
5	17	16	555	1,480	693	670	444	477	499	444	337	156
6	16	18	823	1,250	820	717	433	477	510	444	337	151
7	16	20	1,020	1,180	790	717	433	466	510	433	326	148
8	15	19	741	1,060	741	693	422	466	510	455	316	142
9	15	20	624	960	693	670	422	466	510	455	316	138
10	14	25	544	880	670	647	455	466	510	444	306	132
11	14	32	488	820	624	647	521	466	510	433	296	128
12	13	41	455	790	601	855	532	455	510	433	296	122
13	13	57	433	741	578	880	532	455	510	433	286	120
14	13	90	411	717	555	790	521	455	521	433	286	116
15	14	144	390	670	544	790	510	444	521	422	276	115
16	18	186	379	624	521	741	510	444	510	422	276	113
17	18	225	368	601	521	717	510	455	499	422	266	108
18	16	346	348	601	521	693	521	466	488	422	257	104
19	18	358	326	601	510	647	510	466	488	411	248	100
20	19	276	316	578	499	624	499	466	477	411	248	95
21	19	222	306	578	499	624	477	466	477	411	236	92
22	24	188	286	741	510	624	455	466	466	400	231	88
23	21	173	276	765	578	624	444	466	466	400	225	85
24	20	167	288	1,740	624	624	455	466	455	400	218	81
25	19	178	286	1,480	717	624	477	466	455	390	215	78
26	15	306	286	1,060	693	624	499	488	444	390	205	75
27	10	920	386	880	862	624	488	477	444	390	198	73
28	10	790	2,100	790	960	624	466	477	466	379	193	70
29	12	708	2,320	741	-	578	466	488	466	379	189	68
30	15	555	1,320	693	-	544	455	488	455	368	184	65
31	17	-	1,010	693	-	521	-	488	-	368	181	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	498	24	10	16.1	988
November	6,132	920	12	204	12,160
December	18,881	2,320	278	609	37,450
Calendar year 1945	124,653	2,320	10	342	247,200
January	28,164	1,740	578	909	55,860
February	18,216	960	499	651	36,130
March	21,225	880	521	685	42,100
April	14,354	532	422	478	28,470
May	14,446	488	444	466	28,650
June	14,662	521	444	489	29,080
July	12,968	455	368	418	25,720
August	8,360	358	181	270	16,580
September	3,434	176	65	114	6,810
Water year 1945-46	161,340	2,320	10	442	320,000

Peak discharge.- Nov. 27 (8 a.m.) 1,120 sec.-ft.; Dec. 7 (1 a.m.) 1,180 sec.-ft.; Dec. 28 (7:30 p.m.) 3,200 sec.-ft.; Jan. 24 (2:30 p.m.) 2,030 sec.-ft.; Feb. 27 (10:30 p.m.) 1,010 sec.-ft.; Mar. 12 (4 p.m.) 960 sec.-ft.

Wind River above Trout Creek, near Carson, Wash.

Location.- Staff gage, lat. 45°48'30", long. 121°54'30", in NE¼ sec. 26, T. 4 N., R. 7 E., three-quarters of a mile upstream from mouth of Trout Creek and 7 miles northwest of Carson.

Drainage area.- 108 square miles.

Records available.- October 1944 to September 1946.

Extremes.- Maximum discharge observed during year, 5,900 second-feet Dec. 28 (gage height, 12.80 feet), from rating curve extended above 5,000 second-feet; minimum observed, 59 second-feet Oct. 18.

1944-46: Maximum discharge, 8,880 second-feet Feb. 8, 1945 (gage height, 15.5 feet, from high-water mark), from rating curve extended above 5,000 second-feet; minimum observed, 52 second-feet Oct. 27-30, 1945.

Remarks.- Records good. Gage read twice daily. Very small regulation by fish hatchery dam above station. No diversion above station which is not returned to stream.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-9)

1.6	76	4.0	442	9.0	2,650
2.0	120	5.0	700	10.0	3,380
2.5	178	6.0	1,040	12.0	5,100
3.0	249	7.0	1,460		
3.5	335	8.0	2,000		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	120	1,040	2,180	795	1,240	540	730	590	466	166	109
2	82	154	900	2,720	900	1,160	515	760	615	442	154	104
3	82	178	1,000	2,240	795	1,080	490	900	590	419	154	104
4	82	166	1,200	2,370	700	970	490	970	540	375	154	104
5	76	166	1,240	2,720	700	865	466	935	515	355	148	109
6	76	166	1,880	1,880	1,080	1,000	466	865	515	355	148	104
7	76	154	1,880	1,940	970	970	466	830	490	316	142	104
8	71	142	1,360	1,610	830	900	466	760	515	397	142	98
9	71	142	1,040	1,320	760	830	466	730	490	442	136	98
10	71	154	900	1,200	700	830	540	760	466	375	131	98
11	66	154	795	970	640	830	865	760	442	335	131	92
12	65	191	700	865	590	1,280	830	760	442	316	131	92
13	66	265	615	760	540	1,280	865	760	466	298	131	92
14	66	397	565	700	515	1,120	830	700	590	281	131	92
15	64	565	515	640	490	1,040	830	640	565	281	131	104
16	63	640	490	615	490	935	830	670	515	265	126	109
17	60	565	466	590	515	900	830	760	466	249	120	104
18	60	970	419	590	515	795	935	830	442	249	120	98
19	66	865	397	615	490	730	935	830	442	234	120	98
20	71	615	397	590	466	700	865	830	466	234	120	92
21	71	515	375	590	490	670	830	795	466	219	114	92
22	82	419	375	1,040	515	670	730	795	442	219	114	92
23	82	375	397	1,000	730	700	700	700	397	205	114	92
24	76	375	442	2,240	830	730	760	700	397	191	109	87
25	76	466	442	1,710	1,080	700	935	730	442	191	109	82
26	76	1,120	466	1,240	935	760	1,040	830	397	191	109	82
27	104	3,000	670	1,040	1,360	795	900	865	355	178	109	82
28	104	2,180	4,740	935	1,510	730	830	795	490	178	104	82
29	109	1,760	4,920	830	-	700	900	700	640	166	109	82
30	126	1,280	3,220	730	-	615	795	640	540	166	109	82
31	126	-	2,440	730	-	590	-	615	-	166	109	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	2,453	126	60	79.1	0.732	0.84	4,870
November	18,259	3,000	120	609	5.64	6.29	36,220
December	36,286	4,920	375	1,171	10.8	12.50	71,970
Calendar year 1945	204,734	5,050	60	561	5.19	70.51	406,100
January	39,200	2,720	590	1,265	11.7	13.50	77,750
February	20,931	1,510	466	748	6.93	7.21	41,520
March	27,115	1,280	590	875	8.10	9.34	53,780
April	21,940	1,040	466	731	6.77	7.56	43,520
May	23,945	970	615	772	7.15	8.25	47,490
June	14,728	640	355	491	4.55	5.07	29,210
July	8,754	466	166	282	2.61	3.01	17,360
August	3,945	166	104	127	1.18	1.36	7,820
September	2,860	109	82	95.3	.882	.98	5,670
Water year 1945-46	220,416	4,920	60	604	5.59	75.91	437,200

Wind River near Carson, Wash.

Location.- Water-stage recorder, lat. 45°44'10", long. 121°48'10", in SW¼NE¼ sec. 21, T. 3 N., R. 8 E., three-quarters of a mile upstream from Little Wind River, 1 mile northeast of Carson, and 2½ miles upstream from mouth. Discharge measurements made just downstream from mouth of Little Wind River.

Drainage area.- 225 square miles, including that of Little Wind River.

Records available.- December 1934 to September 1946 (includes flow of Little Wind River).

Average discharge.- 11 years, 995 second-feet.

Extremes.- Maximum discharge during year, 14,200 second-feet Dec. 28 (gage height, 16.02 feet), from rating curve extended above 5,000 second-feet on basis of velocity-area studies; minimum, 174 second-feet Oct. 18, 19 (gage height, 2.87 feet).
1934-46: Maximum discharge, 16,700 second-feet Dec. 29, 1937 (gage height, 17.30 feet), from rating curve extended above 5,000 second-feet on basis of velocity-area studies; minimum, 136 second-feet Nov. 29, Dec. 1, 1936 (gage height, 2.21 feet).

Remarks.- Records good except those below 500 second-feet, which are fair. Flow occasionally affected by pondage at Forest Service power plant on Trout Creek. No diversion above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

3.1	209	5.0	725	9.0	3,460
3.3	244	5.5	910	10.0	4,650
3.6	304	6.0	1,110	12.0	7,450
4.0	402	7.0	1,670	14.0	10,600
4.5	550	8.0	2,440		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	224	283	2,270	5,040	1,980	2,920	1,110	1,340	990	870	339	244
2	206	364	1,880	5,720	2,530	2,720	1,050	1,340	990	830	327	235
3	201	416	2,030	5,040	1,990	2,620	1,050	1,520	970	778	327	235
4	199	376	2,530	5,440	1,640	2,190	990	1,740	930	725	327	235
5	196	364	2,820	6,140	1,580	1,920	970	1,640	890	690	316	235
6	195	351	4,560	4,400	3,380	2,350	950	1,520	850	638	316	235
7	193	339	4,520	4,520	2,820	2,270	930	1,460	850	620	316	226
8	190	316	3,130	3,920	2,110	2,030	970	1,340	870	690	304	226
9	188	316	2,350	3,020	1,810	1,840	1,010	1,280	850	830	304	226
10	188	364	1,880	2,440	1,610	1,700	1,340	1,310	812	708	294	218
11	184	460	1,580	2,030	1,400	2,530	2,190	1,310	778	672	283	218
12	181	535	1,370	1,740	1,260	3,500	2,030	1,340	760	620	283	218
13	182	708	1,210	1,550	1,160	3,240	1,920	1,310	795	585	283	218
14	182	1,050	1,070	1,400	1,090	2,620	1,810	1,240	950	568	283	218
15	178	1,460	990	1,260	1,070	2,620	1,740	1,140	990	550	283	235
16	177	1,810	930	1,160	1,090	2,270	1,700	1,140	910	535	273	244
17	175	1,780	890	1,090	1,160	1,990	1,740	1,240	850	490	273	235
18	175	2,930	830	1,140	1,260	1,780	1,920	1,340	812	475	263	226
19	182	2,480	778	1,160	1,160	1,610	1,920	1,340	795	460	263	218
20	192	1,610	760	1,140	1,090	1,460	1,780	1,370	795	460	263	218
21	190	1,180	742	1,160	1,070	1,370	1,610	1,310	795	445	254	209
22	218	990	708	2,820	1,210	1,430	1,430	1,280	760	430	254	209
23	218	850	742	2,620	1,780	1,550	1,340	1,210	708	416	254	209
24	199	778	950	6,360	2,190	1,640	1,430	1,148	690	402	244	206
25	195	1,020	1,010	4,520	2,820	1,640	1,740	1,180	778	389	244	201
26	196	3,530	1,110	3,020	2,270	1,740	1,990	1,260	690	376	244	196
27	226	7,450	2,410	2,350	3,780	1,810	1,740	1,340	655	376	244	196
28	254	5,300	11,300	1,950	3,800	1,640	1,520	1,260	795	364	235	196
29	263	4,160	10,600	1,700	-	1,490	1,580	1,160	1,090	351	235	195
30	294	3,020	7,010	1,480	-	1,310	1,490	1,070	990	351	235	193
31	304	-	5,580	1,460	-	1,210	-	1,030	-	351	244	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	6,345	304	175	205	0.911	1.05	12,590
November	46,590	7,450	283	1,553	6.90	7.70	92,410
December	80,540	11,300	708	2,598	11.5	13.31	159,700
Calendar year 1945	452,010	11,300	175	1,238	5.50	74.70	896,500
January	88,770	6,360	1,090	2,864	12.7	14.67	176,100
February	52,110	3,800	1,070	1,861	8.27	8.61	103,400
March	63,010	3,500	1,210	2,033	9.04	10.41	125,000
April	44,990	2,190	930	1,500	6.67	7.44	89,240
May	40,500	1,740	1,030	1,306	5.80	6.69	80,330
June	25,388	1,090	655	846	3.76	4.20	50,360
July	17,045	870	351	550	2.44	2.82	33,810
August	8,607	339	235	278	1.24	1.42	17,070
September	6,573	244	193	219	.973	1.09	13,040
Water year 1945-46	480,468	11,300	175	1,316	5.85	79.41	953,000

Peak discharge.- Nov. 27 (5 a.m.) 8,680 sec.-ft.; Dec. 6 (9 p.m.) 5,720 sec.-ft.; Dec. 28 (3:30 p.m.) 14,200 sec.-ft.; Jan. 5 (5:30 a.m.) 6,700 sec.-ft.; Jan. 24 (8:30 a.m.) 7,450 sec.-ft.

Falls Creek near Carson, Wash.

Location.- Water-stage recorder, lat. 45°54'30", long. 121°56'30", in SW¼ sec. 21, T. 5 N., R. 7 E., a third of a mile upstream from mouth and 14 miles northwest of Carson.

Drainage area.- 24.3 square miles.

Records available.- December 1944 to September 1946.

Extremes.- Maximum discharge during year, 536 second-feet Dec. 29 (gage height, 3.88 feet), from rating curve extended above 200 second-feet; minimum, 9.9 second-feet Oct. 16-18 (gage height, 1.63 feet).

1944-46: Maximum discharge recorded, 560 second-feet Feb. 8, 1945 (gage height, 4.05 feet), from rating curve extended above 200 second-feet; minimum that of Oct. 16-18, 1945. Discharge of 8.1 second-feet was measured Oct. 29, 1944.

Remarks.- Records good except those above 300 second-feet and those for period of ice effect, which are fair. No diversion or regulation above station.

Rating table, water year 1945-46, except period of ice effect
(gage height, in feet, and discharge, in second-feet)

1.7	12	2.5	93
1.9	24	2.7	129
2.1	42	3.0	217
2.3	66	3.3	319

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	18	123	298	123	145	80	155	188	123	49	30
2	14	23	106	362	127	137	79	176	188	119	49	29
3	14	20	132	344	113	127	76	207	179	113	47	28
4	14	19	161	362	106	115	74	220	170	107	46	28
5	13	20	164	377	103	109	72	217	161	104	45	30
6	13	19	250	302	150	119	71	207	161	99	42	28
7	13	20	237	326	137	113	69	201	150	98	40	28
8	13	19	170	277	119	107	71	188	161	111	40	27
9	12	19	132	243	109	104	72	185	147	115	38	26
10	12	21	115	217	101	104	87	195	139	103	38	24
11	12	22	103	195	96	106	132	195	134	98	36	24
12	12	25	90	173	90	161	117	201	134	92	38	24
13	12	32	83	155	86	164	111	198	139	86	36	24
14	11	54	80	142	83	145	111	188	176	83	36	24
15	10	64	b73	132	80	134	111	182	170	80	36	29
16	9.9	59	b68	125	79	119	111	185	152	78	36	30
17	9.9	52	b63	119	79	113	115	198	147	74	34	27
18	9.9	89	b60	121	78	106	127	211	139	71	34	25
19	14	76	b56	119	75	101	134	214	139	70	32	24
20	14	59	b56	111	72	93	137	214	142	70	32	24
21	13	49	b59	111	74	89	132	211	142	69	32	24
22	18	45	64	188	76	89	121	214	134	66	31	24
23	15	40	67	167	93	92	123	204	125	64	31	22
24	14	40	78	312	98	92	129	198	129	61	30	21
25	14	64	70	243	111	93	150	201	137	59	30	21
26	16	150	75	195	104	98	176	240	121	58	30	20
27	19	330	116	170	164	99	170	250	115	55	30	20
28	17	264	412	155	170	96	161	234	142	54	29	20
29	19	207	505	139	-	93	182	214	161	53	28	20
30	21	150	377	123	-	89	167	201	132	52	29	20
31	19	-	319	121	-	85	-	195	-	51	30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	431.7	21	9.9	13.9	0.572	0.66	856
November	2,069	330	18	69.0	2.84	3.17	4,100
December	4,464	505	56	144	5.93	6.83	8,850
Calendar year 1945	30,085.7	505	9.9	82.4	3.39	46.05	59,660
January	6,424	377	111	207	8.52	9.83	12,740
February	2,896	170	72	103	4.24	4.43	5,740
March	3,437	164	85	111	4.57	5.26	6,820
April	3,468	182	69	116	4.77	5.31	6,880
May	6,299	250	155	203	8.35	9.64	12,490
June	4,454	188	115	148	6.09	6.82	8,830
July	2,536	123	51	81.8	3.37	3.88	5,030
August	1,114	49	28	35.9	1.48	1.70	2,210
September	745	30	20	24.8	1.02	1.14	1,480
Water year 1945-46	38,337.7	505	9.9	105	4.32	58.67	76,030

Peak discharge.- Nov. 27 (8 a.m.) 377 sec.-ft.; Dec. 29 (1 a.m.) 536 sec.-ft.; Jan. 5 (1 a.m.) 422 sec.-ft.

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Trout Creek near Carson, Wash.

Location.- Water-stage recorder, lat. 45°48'00", long. 121°55'00", in SW¼ sec. 26, T. 4 N., R. 7 E., a quarter of a mile upstream from Martha Creek, half a mile upstream from mouth, and 7 miles northwest of Carson.

Drainage area.- 30.3 square miles.

Records available.- December 1944 to September 1946.

Extremes.- Maximum discharge during year, 2,690 second-feet Dec. 28 (gage height, 8.61 feet), from rating curve extended above 800 second-feet; minimum, 3.0 second-feet (regulated) Oct. 1 (gage height, 1.25 feet).
1944-46: Maximum discharge, 3,040 second-feet Feb. 7, 1945 (gage height, 9.10 feet), from rating curve extended above 800 second-feet; minimum, that of Oct. 1, 1945.

Remarks.- Records good except those for periods of ice effect or no gage-height record, and those above 1,000 second-feet and below 10 second-feet, which are fair. Some regulation at Forest Service power plant. No diversion above station.

Rating table, water year 1945-46, except period of ice effect
(gage height, in feet, and discharge, in second-feet)

1.4	4.7	2.3	46	3.6	250	5.5	870
1.6	9.1	2.6	78	4.0	343	6.0	1,120
1.8	16	3.0	133	4.5	484	7.0	1,670
2.0	26	3.3	187	5.0	655	8.0	2,270

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	f34	68	409	800	365	484	179	274	159	164	32	13
2	19	138	343	1,020	438	484	166	268	157	148	31	12
3	18	150	368	800	331	423	161	309	150	133	29	11
4	17	123	438	945	272	356	161	343	140	119	28	11
5	17	116	532	1,140	250	319	161	319	152	109	27	12
6	16	98	1,010	674	618	468	159	300	93	98	26	12
7	16	88	778	735	453	438	157	284	123	90	25	11
8	15	77	500	583	331	368	187	263	127	120	24	11
9	14	77	368	438	277	331	195	243	119	150	23	10
10	13	99	307	343	241	295	270	252	117	117	22	9.7
11	13	140	254	290	205	331	438	248	110	109	22	9.4
12	13	182	211	248	181	778	395	250	106	102	21	9.4
13	12	250	179	213	159	618	368	246	111	95	a20	8.9
14	12	368	154	187	142	453	368	224	157	90	a20	9.1
15	12	516	135	*164	135	423	356	203	168	93	a19	13
16	11	636	123	152	128	343	356	199	155	83	a18	20
17	12	583	119	142	152	307	356	220	147	76	a17	16
18	12	898	107	168	166	270	382	235	136	69	a17	12
19	13	636	b100	172	157	239	382	232	127	65	16	11
20	16	*423	b95	199	147	218	368	243	120	58	16	10
21	15	314	b90	178	157	207	343	232	113	56	16	10
22	32	250	b85	576	185	235	300	224	111	52	15	10
23	26	205	102	469	259	274	284	203	106	48	14	9.1
24	20	179	168	1,110	331	284	302	191	110	46	14	8.6
25	18	280	172	674	468	290	368	191	119	43	13	8.1
26	20	844	211	453	368	314	395	201	104	41	13	7.9
27	32	1,580	496	356	676	319	343	201	96	39	12	7.4
28	42	1,120	2,200	305	636	293	307	203	148	38	12	7.4
29	53	*800	1,720	259	-	259	356	195	209	36	12	7.2
30	66	549	1,020	222	-	224	314	178	187	35	13	6.9
31	67	-	870	222	-	199	-	166	-	33	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	696	67	11	22.5	0.743	0.85	1,380
November	11,787	1,580	68	393	13.0	14.47	23,380
December	13,664	2,200	85	441	14.6	16.77	27,100
Calendar year 1945	80,342.1	2,200	5.0	220	7.26	98.62	159,400
January	14,237	1,140	142	459	15.1	17.47	28,240
February	8,228	676	128	294	9.70	10.10	16,320
March	10,844	778	199	350	11.6	13.31	21,510
April	8,877	438	157	296	9.77	10.90	17,810
May	7,340	343	166	237	7.82	9.01	14,560
June	3,977	209	93	133	4.39	4.88	7,890
July	2,555	164	33	82.4	2.72	3.14	5,070
August	600	32	12	19.4	.640	.74	1,190
September	314.1	20	6.9	10.5	.347	.39	623
Water year 1945-46	83,119.1	2,200	6.9	228	7.52	102.03	164,900

Peak discharge.- Nov. 18 (10 a.m.) 1,200 sec.-ft.; Nov. 27 (4 a.m.) 1,970 sec.-ft.; Dec. 6 (4:30 p.m.) 1,240 sec.-ft.; Dec. 28 (11:30 a.m.) 2,690 sec.-ft.; Jan. 24 (6 a.m.) 1,300 sec.-ft.

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.
f Computed on basis of partly estimated gage-height record.

Panther Creek near Carson, Wash.

Location.- Water-stage recorder, lat. 45°48'00", long. 121°52'00", in SW¼ sec. 25, T. 4 N., R. 7½ E., a third of a mile upstream from Cedar Creek and 6 miles north of Carson.

Drainage area.- 30.1 square miles.

Records available.- December 1944 to September 1946.

Extremes.- Maximum discharge during year, 2,030 second-feet Dec. 28 (gage height, 4.86 feet); minimum, 48 second-feet Oct. 1-19, 24-27.
1944-46: Maximum discharge recorded, 2,150 second-feet Feb 7, 1945 (gage height, 5.0 feet); minimum, 47 second-feet Aug. 31 to Sept. 2, 1945 (gage height, 0.90 foot). Discharge of 40 second-feet was measured Oct. 30, 1944.

Remarks.- Records good except those above 2,000 second-feet, which are fair. No diversion or regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 27				Feb. 28 to Sept. 30			
1.0	62	2.3	398	0.9	50	1.8	239
1.2	100	2.6	518	1.0	65	2.0	300
1.4	143	3.0	730	1.2	100	2.3	398
1.6	192	3.5	1,050	1.4	139	2.6	518
1.8	245	4.0	1,400	1.6	185		
2.0	302	4.5	1,750				

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	54	285	585	242	381	150	157	125	129	91	77
2	48	56	242	682	326	342	141	152	125	125	89	75
3	48	54	279	600	279	329	137	171	121	121	89	75
4	48	54	345	626	232	284	133	193	119	119	87	74
5	48	54	361	760	223	254	133	185	117	117	87	74
6	48	54	523	505	405	319	131	173	119	113	87	72
7	48	56	527	509	364	326	131	161	117	111	87	72
8	48	53	364	467	296	281	133	152	119	123	86	72
9	48	56	285	367	256	251	139	150	115	121	86	70
10	48	67	234	305	229	236	188	152	113	115	84	70
11	48	80	202	259	205	236	294	152	111	113	84	70
12	48	94	180	229	187	428	281	152	111	111	84	68
13	48	110	162	205	172	413	263	150	111	110	84	68
14	48	162	148	192	165	332	251	141	121	108	82	70
15	48	187	136	153	170	310	236	135	125	110	82	70
16	48	223	130	165	180	275	228	133	121	108	82	70
17	48	215	123	155	205	254	231	143	117	104	82	68
18	48	351	115	155	223	233	254	150	115	102	80	67
19	50	296	110	160	205	214	251	148	111	100	79	67
20	50	202	108	157	187	201	222	148	111	100	79	67
21	50	153	106	170	184	195	198	141	111	100	79	67
22	53	125	102	384	218	198	180	139	111	98	79	65
23	50	108	110	348	311	217	171	133	110	96	79	65
24	48	100	141	807	371	228	180	131	113	95	79	65
25	48	145	155	537	435	233	214	131	115	95	79	65
26	48	497	195	364	348	251	236	146	111	95	79	64
27	52	980	541	290	528	260	203	148	111	93	79	64
28	52	615	1,740	251	509	236	180	141	127	93	79	62
29	53	467	f1,480	221	-	208	175	135	139	93	77	62
30	56	345	850	197	-	183	168	129	135	91	77	62
31	56	-	682	192	-	163	-	127	-	91	77	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,530	56	48	49.4	1.64	1.89	3,030
November	6,013	980	53	200	6.64	7.43	11,930
December	10,961	1,740	102	354	11.8	13.54	21,740
Calendar year 1945	61,509	1,740	47	169	5.61	75.99	122,000
January	10,997	807	153	355	11.8	13.59	21,810
February	7,655	528	165	273	9.07	9.46	15,180
March	8,271	428	163	267	8.87	10.22	16,410
April	5,832	294	131	194	6.45	7.21	11,570
May	4,599	193	127	148	4.92	5.68	9,120
June	3,527	139	110	118	3.92	4.36	7,000
July	3,300	129	91	106	3.52	4.08	6,550
August	2,554	91	77	82.4	2.74	3.16	5,070
September	2,057	77	62	68.6	2.28	2.54	4,080
Water year 1945-46	67,296	1,740	48	184	6.11	83.16	133,500

Peak discharge.- Nov. 27 (5 a.m.) 1,220 sec.-ft.; Dec. 28 (12 m. to 1 p.m.) 2,030 sec.-ft.; Jan. 24 (7 a.m.) 1,020 sec.-ft.
f Computed on basis of partly estimated gage-height record.

Sandy River near Marmot, Oreg.

Location.- Water-stage recorder, lat. 45°23', long. 122°08', in NE¼ sec. 24, T. 2 S., R 5 E., 1 mile southwest of Marmot, 1½ miles upstream from Sandy River Dam of Portland General Electric Co., and 5 miles downstream from Salmon River.

Drainage area.- 262 square miles.

Records available.- August 1911 to December 1915, July 1919 to September 1946. Equivalent records for period January 1916 to June 1919 obtained by combining records for Sandy River below dam near Marmot with records for Sandy River Canal near Marmot.

Average discharge.- 35 years, 1,297 second-feet.

Extremes.- Maximum discharge during year, 22,400 second-feet Dec. 28 (gage height, 15.23 feet), from rating curve extended above 4,000 second-feet; minimum, 276 second-feet Oct. 18, 19 (gage height, 2.26 feet).

1911-46: Maximum discharge, 29,200 second-feet Jan. 6, 1923 (gage height, 17.5 feet, site and datum then in use), by computation of flow over dam; minimum, 205 second-feet Sept. 21-24, 1940.

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

Cooperation.- Water-stage recorder inspected by employee of Portland General Electric Co.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30			
2.2	255	4.8	1,950	2.9	320	7.0	3,880
2.5	370	5.6	2,820	3.3	485	8.0	5,580
2.9	550	6.5	4,140	3.8	760	9.5	8,530
3.4	830	7.6	6,050	4.4	1,175	11.0	11,750
4.0	1,250	8.8	8,290	5.1	1,720	12.5	15,200
				6.0	2,580	14.0	19,050

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	342	622	1,890	3,270	2,110	2,580	1,080	1,700	1,740	1,180	540	400
2	334	2,030	1,590	2,930	1,860	2,250	1,040	1,920	1,680	1,130	535	392
3	330	1,520	1,500	2,520	1,540	2,060	1,000	2,440	1,580	1,060	520	376
4	322	1,090	1,600	2,790	1,350	1,820	967	2,700	1,460	988	515	380
5	314	1,400	1,620	3,990	1,400	1,760	988	2,370	1,380	946	515	396
6	314	1,110	3,370	2,820	1,840	2,330	1,020	2,210	1,420	904	530	a440
7	310	908	3,570	3,210	1,640	2,040	1,020	2,120	1,280	870	495	a410
8	302	758	2,330	2,700	1,410	1,820	1,060	1,980	1,310	1,060	480	a390
9	302	1,040	1,820	2,170	1,380	1,700	1,070	1,920	1,220	1,320	567	a370
10	298	1,510	1,610	1,940	1,310	1,710	1,280	2,160	1,160	1,060	476	356
11	298	1,350	1,430	1,670	1,190	1,670	1,780	2,110	1,100	1,010	467	356
12	294	1,880	1,270	1,500	1,110	2,900	1,780	2,090	1,090	967	458	352
13	294	1,750	1,120	1,380	1,040	2,600	1,770	2,010	1,300	918	458	352
14	286	1,700	1,030	1,280	1,040	2,060	1,800	1,770	1,420	858	458	364
15	286	1,960	960	1,200	1,090	2,050	1,760	1,660	1,460	799	454	396
16	302	1,860	940	1,120	1,170	1,780	1,870	1,800	1,400	754	454	462
17	306	1,740	1,220	1,080	1,230	1,700	2,100	2,000	1,390	730	432	458
18	280	2,250	1,110	1,090	1,250	1,610	2,570	2,050	1,310	718	428	380
19	298	2,470	1,020	1,090	1,160	1,480	2,430	2,040	1,260	706	436	352
20	326	1,720	988	1,040	1,100	1,400	2,160	2,090	1,230	718	444	336
21	302	1,350	1,160	1,180	1,090	1,360	1,940	1,900	1,180	736	440	344
22	446	1,110	1,230	3,990	1,130	1,420	1,710	1,910	1,120	712	432	340
23	414	995	1,270	2,870	1,380	1,400	1,680	1,700	1,060	658	428	328
24	354	995	1,540	5,740	1,660	1,350	1,990	1,830	1,040	618	428	332
25	338	1,160	1,550	3,600	1,860	1,310	2,610	1,720	1,210	590	412	336
26	322	1,740	1,710	2,450	1,560	1,500	2,820	2,130	1,090	580	396	328
27	334	7,340	2,920	1,970	3,480	1,760	2,240	2,550	1,210	560	396	320
28	334	5,400	17,300	1,730	3,580	1,560	2,000	2,540	1,380	565	388	313
29	362	3,390	10,800	1,550	-	1,400	2,050	2,600	1,420	585	400	313
30	496	2,400	5,620	1,350	-	1,260	1,810	2,120	1,280	565	408	320
31	500	-	4,180	1,500	-	1,150	-	1,880	-	540	416	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	10,340	500	280	334	1.27	1.47	20,510
November	56,548	7,340	622	1,885	7.19	8.03	112,200
December	81,268	17,300	840	2,622	10.0	11.54	161,200
Calendar year 1945	532,013	17,300	280	1,458	5.56	75.53	1,055,000
January	68,720	5,740	1,040	2,217	8.46	9.75	136,300
February	42,940	3,580	1,040	1,534	5.85	6.10	85,170
March	54,790	2,900	1,150	1,767	6.74	7.78	108,700
April	51,395	2,820	967	1,713	6.54	7.30	101,900
May	63,820	2,700	1,630	2,059	7.86	9.06	126,600
June	39,180	1,740	1,040	1,306	4.98	5.56	77,710
July	25,405	1,320	540	820	3.13	3.61	50,390
August	14,106	540	388	455	1.74	2.00	27,980
September	10,992	462	313	366	1.40	1.56	21,800
Water year 1945-46	519,504	17,300	280	1,423	5.43	73.76	1,030,000

Peak discharge.- Nov. 27 (8 a.m.) 8,210 sec.-ft.; Dec. 28 (6 p.m.) 22,400 sec.-ft.; Jan. 5 (1 p.m.) 4,460 sec.-ft.; Jan. 22 (6 a.m.) 5,810 sec.-ft.; Jan. 24 (6:30 a.m.) 6,780 sec.-ft.

a No gage-height record; discharge computed on basis of range in stage and records for Bull Run River near Bull Run.

Sandy River below Bull Run River, near Bull Run, Oreg.

Location.- Water-stage recorder, lat. 45°27', long. 122°15', in NW¼ sec. 30, T. 1 S., R. 5 E., 1 mile downstream from Bull Run River and 2 miles northwest of Bull Run. Altitude of gage, 202 feet (from river-profile map).

Drainage area.- 440 square miles.

Records available.- October 1929 to September 1946. April 1910 to September 1914 at site three-quarters of a mile upstream.

Average discharge.- 20 years (1910-11, 1912-14, 1929-46), 2,167 second-feet.

Extremes.- Maximum discharge during year, 44,300 second-feet Dec. 28 (gage height, 17.46 feet), from rating curve extended above 18,000 second-feet; minimum, 77 second-feet (regulated) Oct. 21 (gage height, 0.81 foot); minimum daily, 93 second-feet Oct. 7. 1910-14, 1929-46: Maximum discharge, 58,000 second-feet Mar. 31, 1931 (gage height, 20.6 feet), from rating curve extended above 18,000 second-feet; minimum, 53 second-feet (regulated) Oct. 4, 1931 (gage height, 0.53 foot); minimum daily, that of Oct. 7, 1945.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversion above station for irrigation; about 60,000 acre-feet annually diverted from Bull Run River by Portland Water Bureau. Flow slightly regulated by Bull Run Lake and Lake Ben Morrow Reservoir of Portland Water Bureau; considerable diurnal fluctuation by Bull Run power plant of Portland General Electric Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	484	884	3,560	5,990	4,200	4,900	1,800	2,630	2,460	1,900	648	223
2	672	3,690	2,930	5,760	3,800	4,200	1,700	2,850	2,300	1,660	693	334
3	695	3,800	2,740	4,970	2,900	3,800	1,600	3,620	2,170	1,650	623	628
4	426	2,380	2,800	5,160	2,400	3,300	1,500	4,200	1,980	1,240	368	461
5	369	3,000	2,960	8,250	2,500	3,200	1,500	3,490	1,850	1,350	676	486
6	201	2,340	7,210	5,760	4,700	5,500	1,600	3,210	1,860	1,210	641	490
7	93	1,910	7,580	6,540	3,500	4,400	1,600	3,110	1,720	1,160	629	691
8	428	1,610	4,510	5,740	2,800	3,700	1,700	2,850	1,770	1,590	654	164
9	318	1,820	3,200	4,290	2,500	3,300	1,700	2,690	1,590	2,360	566	560
10	366	3,400	2,870	3,630	2,400	3,200	2,100	2,990	1,530	1,880	374	459
11	406	3,160	2,580	3,130	2,200	3,100	3,200	2,940	1,420	1,670	328	492
12	454	4,500	2,310	2,710	1,990	6,500	3,200	2,880	1,400	1,430	706	412
13	490	4,330	1,990	2,410	1,780	5,500	3,100	2,860	1,700	1,150	596	584
14	108	3,900	1,780	2,230	1,730	4,000	3,100	2,420	1,900	1,260	585	525
15	376	4,330	1,460	2,080	1,770	3,700	3,000	2,210	2,120	1,170	466	510
16	371	4,010	1,400	1,810	1,860	3,200	3,200	2,420	1,920	1,080	507	564
17	372	3,650	2,310	1,730	1,940	3,000	3,500	2,630	1,950	1,080	441	542
18	636	2,470	2,010	1,720	2,100	2,900	4,200	2,810	1,840	944	292	498
19	412	5,580	1,750	1,790	2,000	2,600	3,900	2,840	1,640	921	598	424
20	531	3,530	1,770	1,680	1,900	2,400	3,600	2,930	1,620	751	550	373
21	271	2,720	2,130	1,790	1,900	2,200	3,300	2,610	1,490	804	560	205
22	415	2,030	2,160	7,840	2,000	2,300	2,900	2,640	1,490	920	502	107
23	590	2,030	2,300	5,640	2,500	2,400	2,700	2,310	1,450	752	521	400
24	406	1,760	3,290	11,600	3,000	2,300	3,200	2,150	1,480	861	456	345
25	450	2,060	3,110	7,000	3,500	2,300	3,830	2,220	1,790	718	135	379
26	498	3,360	3,570	4,500	3,000	2,600	4,650	2,890	1,640	747	552	304
27	516	16,600	5,250	3,500	7,000	3,000	3,510	3,850	1,730	530	540	338
28	316	12,300	36,600	3,000	7,000	2,700	3,000	4,020	2,050	586	480	388
29	514	7,120	21,400	2,800	-	2,400	3,160	4,060	2,350	788	481	220
30	752	4,750	10,600	2,200	-	2,200	2,870	3,110	2,030	664	626	434
31	740	-	7,610	2,500	-	2,000	-	2,840	-	624	404	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	13,674	752	93	441	1.00	1.16	27,120
November	119,024	16,600	884	3,967	9.02	10.06	236,100
December	157,720	36,600	1,400	5,088	11.6	13.33	312,800
Calendar year 1945	961,329	36,600	93	2,634	5.99	81.25	1,907,000
January	129,550	11,600	1,680	4,179	9.50	10.95	257,000
February	80,870	7,000	1,730	2,888	6.56	6.84	160,400
March	102,800	6,500	2,000	3,316	7.54	8.69	203,900
April	83,920	4,650	1,500	2,797	6.36	7.09	166,500
May	91,280	4,200	2,150	2,945	6.69	7.72	181,100
June	54,240	2,480	1,480	1,808	4.11	4.58	107,600
July	35,250	2,380	386	1,137	2.58	2.98	69,920
August	16,198	706	135	523	1.19	1.37	32,130
September	12,540	691	107	418	.950	1.06	24,870
Water year 1945-46	897,066	36,600	93	2,458	5.59	75.83	1,779,000

Peak discharge.- Nov. 27 (10 a.m.) 19,500 sec.-ft.; Dec. 6 (9 p.m.) 12,000 sec.-ft.; Dec. 28 (5 p.m.) 44,300 sec.-ft.; Jan. 22 (9 a.m.) 11,800 sec.-ft.; Jan. 24 (9 a.m.) 13,400 sec.-ft.

Note.- No gage-height record Jan. 24 to Feb. 11, Feb. 18 to Apr. 23, June 12-14; discharge computed on basis of records for Sandy River near Marmot, Bull Run River near Bull Run, and Little Sandy River near Bull Run.

Salmon River near Government Camp, Oreg.

Location.- Water-stage recorder, lat. 45°16', long. 121°43', in sec. 31, T 3 S., R. 9 E., near lower end of Red Top Meadows, 4 miles southeast of Government Camp Datum of gage is 3,446.45 feet above mean sea level, datum of 1929.

Drainage area.- 8.7 square miles.

Records available.- May 1910 to May 1912, April 1926 to September 1946.

Average discharge.- 21 years (1910-11, 1926-46), 40.2 second-feet.

Extremes.- Maximum discharge during year, 412 second-feet Dec. 28 (gage height, 3.05 feet); minimum, .16 second-feet Oct. 13-18.
1910-12, 1926-46: Maximum discharge, 650 second-feet Dec. 22, 1933 (gage height, 3.61 feet); minimum, 12 second-feet Nov. 21, 1929, Oct. 19, 1930, Nov. 2, 10-12, Nov. 28 to Dec. 4, 1936.

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 27, 28)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
0.3	13.6	1.3	97	0.4	20	1.4	99
.5	22.6	1.7	151	.6	30	1.8	150
.7	36.2	2.1	221	.8	43	2.2	220
1.0	64	2.5	310	1.1	69		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	35	34	80	32	37	30	66	104	72	39	29
2	18	76	32	79	32	36	30	89	106	70	38	28
3	18	31	34	65	31	34	30	112	103	67	37	28
4	18	26	40	72	30	32	31	117	97	65	37	28
5	18	29	35	65	30	33	32	107	98	64	36	31
6	18	24	51	53	31	42	32	102	96	62	38	29
7	17	23	40	52	30	37	31	94	91	61	37	28
8	17	22	33	46	29	36	31	89	90	79	35	28
9	17	23	30	43	28	37	29	97	84	80	35	26
10	17	23	30	41	28	36	31	109	82	65	34	26
11	17	22	28	38	28	35	37	102	85	62	34	26
12	17	24	26	37	28	36	39	102	95	60	34	28
13	16	23	26	37	28	34	45	99	108	57	34	28
14	16	29	25	36	28	32	49	88	101	56	34	26
15	16	33	24	35	28	32	49	91	91	55	33	28
16	17	28	28	34	28	30	54	99	89	53	32	32
17	17	24	41	34	28	30	63	111	86	52	32	28
18	16	23	30	34	28	29	67	115	89	50	31	28
19	19	23	28	34	27	29	66	117	91	49	31	25
20	18	22	26	32	27	30	60	115	91	49	31	24
21	19	22	27	32	27	30	53	110	86	48	30	26
22	23	21	28	41	26	31	51	108	81	46	30	25
23	20	21	28	41	28	30	56	98	77	45	30	24
24	19	23	30	76	30	30	71	99	77	44	30	24
25	19	25	31	48	30	29	92	110	81	43	29	24
26	18	35	30	40	29	32	90	135	74	42	29	24
27	18	118	81	38	53	37	75	141	76	42	28	24
28	18	73	315	37	45	34	70	144	95	41	28	23
29	19	50	187	35	-	32	70	126	82	41	29	23
30	26	39	106	34	-	31	62	110	75	41	30	23
31	23	-	93	33	-	30	-	106	-	40	30	-

Month	Seocnd-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	567	26	16	18.3	2.10	2.42	1,120
November	990	118	21	33.0	3.79	4.23	1,980
December	1,597	315	24	51.5	5.92	6.83	3,170
Calendar year 1945	15,106	315	16	41.4	4.78	64.58	29,960
January	1,402	80	32	45.2	5.20	5.99	2,780
February	847	53	26	30.3	3.48	3.62	1,880
March	1,023	42	29	33.0	3.79	4.37	2,030
April	1,526	92	29	50.9	5.86	6.52	3,030
May	3,308	144	66	107	12.3	14.14	6,560
June	2,681	108	74	89.4	10.3	11.48	5,320
July	1,701	80	40	54.9	6.31	7.27	3,370
August	1,015	39	28	32.7	3.78	4.34	2,010
September	788	32	23	26.3	3.02	3.37	1,560
Water year 1945-46	17,445	315	16	47.8	5.49	74.56	34,590

Salmon River below Linney Creek, Oreg.

Location.- Water-stage recorder, lat. 45°13', long. 121°52', 200 feet downstream from Linney Creek, 9 miles southeast of Welches, and 11 miles downstream from station near Government Camp.

Drainage area.- 54 square miles.

Records available.- October 1927 to September 1946.

Average discharge.- 19 years, 196 second-feet.

Extremes.- Maximum discharge during year, 2,210 second-feet Dec. 28 (gage height, 5.10 feet); minimum, 48 second-feet Oct. 14, 15 (gage height, 0.39 foot).
1927-46: Maximum discharge, 4,070 second-feet Mar. 31, 1931 (gage height, 5.81 feet), from rating curve extended above 1,500 second-feet; minimum, 37 second-feet Nov. 2, 1936 (gage height, 0.22 foot).

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
0.4	49	1.9	413	0.4	48	1.6	320
.6	73	2.2	536	.6	75	1.9	428
.8	102	2.6	735	.8	110	2.2	545
1.0	136	3.0	960	1.0	151	2.6	735
1.3	206	3.5	1,265	1.3	226	3.0	960
1.6	302	4.0	1,590				

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	94	178	604	215	261	192	470	410	204	108	78
2	51	164	157	572	207	246	192	550	398	196	106	75
3	51	102	166	501	192	226	186	665	384	189	103	75
4	51	83	212	541	182	212	186	715	359	184	101	77
5	50	92	209	558	179	210	194	680	344	176	99	82
6	50	80	270	439	199	270	196	645	355	174	103	77
7	50	76	275	424	184	243	199	617	320	172	99	72
8	50	73	215	355	169	238	202	568	320	202	98	69
9	49	80	183	320	167	240	196	568	300	221	92	68
10	49	93	166	293	160	246	199	608	286	182	90	66
11	49	86	153	264	153	238	238	590	274	169	90	66
12	50	107	142	240	147	280	258	590	277	165	90	64
13	49	99	125	229	143	258	289	572	338	160	89	66
14	48	108	122	212	143	235	330	517	338	158	89	69
15	48	131	113	202	143	226	359	505	313	151	87	74
16	49	118	118	192	140	204	395	521	293	147	85	94
17	50	104	155	186	143	199	455	541	283	143	82	85
18	49	112	132	184	143	194	533	550	264	138	80	70
19	53	112	118	184	138	189	545	554	258	134	82	66
20	57	99	116	172	136	192	521	568	255	132	80	64
21	54	90	116	174	134	196	474	537	246	128	80	68
22	77	84	116	313	134	202	432	525	238	126	78	64
23	65	81	118	277	143	196	447	486	229	124	77	63
24	57	84	132	455	162	189	521	482	229	122	77	60
25	54	104	136	348	172	184	645	497	238	118	75	60
26	53	153	140	293	165	210	710	599	223	118	75	60
27	53	478	235	264	302	249	626	576	223	118	74	60
28	53	383	1,600	249	313	229	581	554	264	114	72	59
29	60	285	1,510	229	-	215	550	550	243	114	74	58
30	79	218	960	207	-	204	486	470	215	114	77	58
31	72	-	752	207	-	196	-	439	-	112	84	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,682	79	48	54.3	1.01	1.16	3,340
November	3,973	478	73	132	2.44	2.74	7,880
December	9,140	1,600	113	295	5.46	6.29	18,130
Calendar year 1945	73,720	1,600	48	202	3.74	50.77	146,200
January	9,688	604	172	313	5.80	6.67	19,220
February	4,808	313	134	172	3.19	3.31	9,540
March	6,877	280	184	222	4.11	4.74	13,640
April	11,337	710	186	378	7.00	7.81	22,490
May	17,309	715	439	558	10.3	11.92	34,330
June	8,717	410	215	291	5.39	6.00	17,290
July	4,705	221	112	152	2.81	3.24	9,330
August	2,694	108	72	86.9	1.61	1.86	5,340
September	2,067	94	58	68.9	1.28	1.42	4,100
Water year 1945-46	82,997	1,600	48	227	4.20	57.16	164,600

Salmon River above Boulder Creek, near Brightwood, Oreg.

Location.- Water-stage recorder, lat. 45°22', long. 122°01', in SW¼SE¼ sec. 25, T. 2 S., R. 6 E., 1 mile upstream from Boulder Creek, 1½ miles south of Brightwood, and 2½ miles upstream from mouth. Datum of gage is 1,089.2 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).

Drainage area.- 106 square miles.

Records available.- August 1936 to September 1946. October 1912 to March 1913 (gage heights only) at site at fish hatchery below Boulder Creek. August 1913 to September 1914, July 1920 to September 1921, April 1925 to September 1936 at sites at or near Welches, about 5 miles above present site.

Average discharge.- 10 years (1936-46), 403 second-feet.

Extremes.- Maximum discharge during year, 8,840 second-feet Dec. 28 (gage height, 7.02 feet, from recorded range in stage), from rating curve extended above 4,100 second-feet; minimum, 81 second-feet Oct. 15 (gage height, 0.60 foot).
1913-14, 1920-21, 1925-46: Maximum discharge, 13,000 second-feet Mar. 31, 1931 (gage height, 9.80 feet at Welches), from rating curve extended above 4,800 second-feet; minimum, 59 second-feet Nov. 30, Dec. 1, 1936, Sept. 25, 26, 1940.

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
0.6	81	1.9	599	4.2	3,440	0.5	91	1.5	434	3.4	2,220
.8	127	2.2	810	5.0	4,850	.7	139	1.9	665	4.1	3,350
1.0	181	2.6	1,165	6.0	6,800	.9	197	2.3	975	5.0	4,290
1.3	286	3.0	1,620			1.2	300	2.8	1,460		
1.6	425	3.5	2,310								

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	218	568	1,320	826	916	372	658	600	341	156	119
2	96	619	479	1,220	707	780	364	772	570	316	153	109
3	94	390	468	1,060	552	700	346	975	534	300	150	109
4	94	278	537	1,260	470	606	341	1,070	496	285	145	109
5	92	380	556	1,790	454	576	346	975	465	274	145	132
6	90	303	1,420	1,180	639	802	364	916	490	270	147	124
7	88	247	1,250	1,290	570	686	364	874	444	260	145	114
8	85	212	765	1,060	480	600	368	795	444	308	139	109
9	85	334	587	826	439	570	372	772	410	368	134	102
10	85	479	514	728	405	594	454	842	391	293	154	100
11	83	420	452	620	372	570	646	818	368	274	132	98
12	83	665	a410	546	348	1,060	632	818	364	263	129	98
13	83	556	a350	502	329	898	632	802	439	253	129	98
14	83	543	a330	460	325	686	646	707	465	243	152	100
15	81	658	a300	429	354	679	646	665	490	236	129	109
16	85	625	a320	405	391	582	700	686	460	223	124	142
17	90	580	a400	386	410	546	802	735	454	216	122	150
18	85	936	a350	386	429	518	966	758	415	210	119	116
19	92	858	a320	391	386	480	924	765	386	203	116	107
20	108	537	a310	372	354	460	834	772	388	194	116	102
21	99	400	a310	410	350	465	750	707	354	191	114	105
22	153	328	a320	1,780	364	485	658	700	341	185	114	105
23	143	290	a350	1,140	434	470	652	632	329	179	114	100
24	115	299	a370	2,220	558	454	795	626	333	176	114	96
25	108	370	a380	1,330	646	439	1,040	652	359	173	112	96
26	103	731	a390	890	512	518	1,130	802	337	170	109	96
27	103	2,980	a1,500	707	1,430	632	916	874	364	167	107	93
28	105	1,650	a6,600	620	1,330	534	826	874	429	164	107	91
29	110	1,030	4,030	540	-	480	818	941	439	161	107	91
30	137	721	2,220	470	-	434	721	758	377	164	114	91
31	153	-	1,670	524	-	396	-	658	-	161	122	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	3,112	153	81	100	0.943	1.09	6,170
November	18,617	2,980	212	621	5.86	6.53	38,930
December	28,826	6,600	300	930	8.77	10.11	57,180
Calendar year 1945	182,586	6,600	81	500	4.72	64.05	362,200
January	26,862	2,220	372	867	8.18	9.42	53,280
February	14,862	1,430	325	531	5.01	5.21	29,480
March	18,616	1,060	396	601	5.67	6.55	36,920
April	19,425	1,130	341	647	6.10	6.82	38,530
May	24,399	1,070	626	787	7.42	8.56	48,390
June	12,715	600	329	424	4.00	4.46	25,220
July	7,221	368	161	233	2.20	2.53	14,320
August	3,950	156	107	127	1.20	1.38	7,800
September	3,211	150	91	107	1.01	1.13	6,370
Water year 1945-46	181,796	6,600	81	498	4.70	63.77	360,600

Peak discharge.- Nov. 27 (6 a.m.) 3,470 sec.-ft.; Dec. 28 (clock stopped), 8,840 sec.-ft.; Jan. 24 (9 a.m.) 2,630 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage and records for station below Linney Creek.

Lake Ben Morrow Reservoir near Bull Run, Oreg.

Location.- Water-stage recorder, lat. 45°29', long. 122°05', in SW¼ sec. 16, T. 1 S., R. 6 E., at Bear Creek Dam of city of Portland, 8½ miles northeast of Bull Run. Datum of gage is at mean sea level (levels by Portland Water Bureau).

Records available.- October 1928 to September 1946.

Extremes.- Maximum contents during year, 31,030 acre-feet Dec. 28 (elevation, 1,046.08 feet); minimum, 21,330 acre-feet Sept. 30 (elevation, 1,020.44 feet).
1928-46: Maximum contents, 31,600 acre-feet Mar. 31, 1931 (elevation, 1,047.40 feet); minimum after first filing in May 1929, 17,270 acre-feet Sept. 26, 1940 (elevation, 1,007.78 feet).

Remarks.- Records good. Lake Ben Morrow Reservoir is formed by concrete dam known as Bear Creek Dam on Bull Run River, completed in March 1929 for water supply of city of Portland. Capacity of reservoir, 26,930 acre-feet at crest of spillway (elevation, 1,036 feet); dead storage, 213 acre-feet at elevation 890 feet (center of outlet valves).

Cooperation.- Water-stage recorder inspected and capacity table furnished by Portland Water Bureau.

Monthly elevation and contents, water year October 1945 to September 1946

Date	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept. 30	1,026.34	23,370	-
Oct. 31	1,029.98	24,670	+1,300
Nov. 30	1,037.99	27,710	+3,040
Dec. 31	1,038.40	27,870	+160
Calendar year 1945	-	-	+710
Jan. 31	1,037.39	27,470	-400
Feb. 28	1,038.71	27,990	+520
Mar. 31	1,037.10	27,360	-630
Apr. 30	1,037.59	27,550	+190
May 31	1,037.34	27,450	-100
June 30	1,037.29	27,430	-20
July 31	1,035.94	26,910	-520
Aug. 31	1,025.83	23,190	-3,720
Sept. 30	1,020.44	21,330	-1,860
Water year 1945-46	-	-	-2,040

Bull Run River below Lake Ben Morrow Reservoir, Oreg.

Location.- Water-stage recorder above crest of spillway and scales indicating number of turns outlet needle valves are open, lat. 45°29', long. 122°05', in SW¼ sec. 16, T. 1 S., R. 6 E., at Bear Creek Dam on Bull Run River, 500 feet downstream from Bear Creek, 1,000 feet upstream from Fivemile Creek, and 8½ miles northeast of Bull Run. Datum of gage is at mean sea level (levels by Portland Water Bureau).

Drainage area.- 74 square miles.

Records available.- October 1934 to September 1946. October 1929 to September 1934 at site half a mile downstream.

Average discharge.- 17 years, 545 second-feet (adjusted).

Extremes.- Maximum discharge during year, 13,000 second-feet Dec. 28 (elevation, 1,046.08 feet); minimum daily, 57 second-feet Nov. 1.
1929-46: Maximum discharge at dam, 16,100 second-feet Mar. 31, 1931 (elevation, 1,047.40 feet with one valve open 30 turns); no flow part of Oct. 27, 1939.

Remarks.- Records fair. Daily discharge determined by combining discharge through valves near base of dam and that over crest of spillway (elevation, 1,036 feet). No diversion above station. Flow regulated by Bull Run Lake and Lake Ben Morrow Reservoir; adjustment applied for storage in Lake Ben Morrow only; flow from Bull Run Lake is not artificially regulated but reaches river through surface and underground channels.

Cooperation.- Water-stage recorder inspected and record of valve openings furnished by Portland Water Bureau.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	57	950	1,420	1,060	1,460	413	721	568	510	156	102
2	102	731	760	1,570	1,060	1,190	377	800	516	451	173	102
3	106	1,290	718	1,400	739	1,040	362	984	490	404	173	102
4	103	832	816	1,530	588	848	354	1,060	451	360	173	120
5	103	925	803	2,500	607	857	348	908	410	326	173	111
6	102	739	2,660	1,560	1,540	2,030	343	808	395	304	157	102
7	102	564	2,260	2,010	1,090	1,500	332	739	383	272	148	102
8	102	451	1,270	1,600	768	1,220	338	707	389	424	165	102
9	102	536	857	1,100	627	1,010	360	648	365	840	191	126
10	105	1,020	718	891	548	882	512	690	348	623	185	140
11	102	993	620	718	477	840	1,000	697	326	490	185	143
12	102	1,510	532	600	432	2,350	916	676	313	432	168	140
13	102	1,400	444	522	380	1,770	857	648	316	377	157	140
14	102	1,330	389	470	371	1,140	816	568	377	332	160	140
15	102	1,490	332	425	413	1,000	768	512	464	310	157	124
16	102	1,310	343	392	444	824	760	516	444	288	157	100
17	105	1,190	536	371	490	760	795	574	458	264	156	90
18	103	1,580	522	389	548	746	950	607	407	245	156	108
19	102	1,510	441	419	503	655	925	614	380	225	156	113
20	102	1,030	413	419	467	584	891	648	354	215	156	113
21	102	728	510	477	444	548	900	641	338	200	159	113
22	102	568	594	2,300	470	542	776	590	326	192	156	113
23	102	490	641	1,660	641	588	704	536	326	182	156	113
24	105	464	1,140	3,880	784	581	771	484	326	210	156	113
25	102	529	1,060	2,020	1,060	588	984	503	419	180	154	116
26	102	1,570	1,180	1,230	840	669	1,150	594	410	189	154	113
27	102	4,760	2,230	874	2,290	742	942	874	413	171	154	113
28	103	3,210	10,700	725	2,110	655	776	984	522	171	157	113
29	103	1,930	4,350	614	-	574	816	936	697	167	153	117
30	103	1,290	2,340	512	-	503	792	746	676	157	130	125
31	79	-	1,700	542	-	451	-	641	-	147	106	-

Month	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Runoff in acre-feet	Change in contents of Lake Ben Morrow Reservoir (acre-feet)	Adjusted for change in reservoir contents: Runoff in acre-feet	Adjusted for change in reservoir contents: Discharge in second-feet: Mean	Adjusted for change in reservoir contents: Discharge in second-feet: Per square mile	Adjusted for change in reservoir contents: Runoff in inches
October	106	79	102	6,260	+1,300	7,560	123	1.66	1.91
November	4,760	57	1,201	71,460	+3,040	74,500	1,252	16.9	18.86
December	10,700	332	1,382	84,950	+160	85,110	1,384	18.7	21.56
Calendar year 1945	10,700	57	694	502,490	+710	503,200	695	9.39	127.43
January	3,880	371	1,134	69,700	-400	69,300	127	15.2	17.52
February	2,290	371	778	43,220	+520	43,740	788	10.6	11.04
March	2,350	451	940	57,810	-630	57,180	930	12.6	14.53
April	1,150	332	701	41,710	+190	41,900	704	9.51	10.61
May	1,060	484	699	42,950	-100	42,850	697	9.42	10.86
June	697	313	420	24,970	-20	24,950	419	5.66	6.32
July	840	147	312	19,160	-520	18,640	303	4.09	4.72
August	191	106	159	9,790	-3,720	6,070	98.7	1.33	1.53
September	143	90	116	6,880	-1,860	5,020	84.4	1.14	1.27
Water year 1945-46	10,700	57	661	478,860	-2,040	476,820	659	8.91	120.73

Bull Run River near Bull Run, Oreg.

Location.- Water-stage recorder, lat. 45°27', long. 122°07', in SE¼ sec. 25, T. 1 S., R. 5 E., 1¾ miles upstream from intake of pipe line for water supply of city of Portland and 5 miles east of Bull Run.
Drainage area.- 102 square miles.
Records available.- January 1895 to September 1946.
Average discharge.- 39 years (1907-46), 728 second-feet (adjusted, 1929-46).
Extremes.- Maximum discharge during year, 15,200 second-feet Dec. 28 (gage height, 11.4 feet); minimum, 90 second-feet (regulated) Oct. 18 (gage height, 0.56 foot).
1895-1946: Maximum discharge, 20,600 second-feet Mar. 31, 1931 (gage height, 13.8 feet), by computation of flow over dam; minimum, 63 second-feet Aug. 13-16, 1926.
Remarks.- Records good. No diversion above station. Flow regulated by Bull Run Lake and Lake Ben Morrow Reservoir; adjustment applied only for storage in Lake Ben Morrow Reservoir; flow from Bull Run Lake is not artificially regulated but reaches river through surface and underground channels.
Cooperation.- Water-stage recorder inspected by Portland Water Bureau.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30					
0.7	112	2.5	760	0.8	119	2.7	780	7.0	6,110
1.0	172	3.2	1,205	1.1	167	3.3	1,190	8.5	8,990
1.3	250	4.0	1,860	1.4	244	4.0	1,820	10.0	12,100
1.6	345	4.8	2,700	1.8	378	4.8	2,700		
2.0	505			2.2	540	5.8	4,070		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	192	1,160	1,870	a1,600	1,950	513	s10	648	612	174	129
2	130	1,130	929	2,040	a1,600	1,610	475	879	598	531	189	127
3	130	1,540	899	1,760	a1,030	1,410	459	1,080	554	471	189	127
4	128	1,030	968	1,940	a820	1,160	443	1,170	508	419	187	135
5	126	1,200	948	3,260	a860	1,170	431	977	463	378	187	159
6	125	a960	3,140	2,080	2,400	2,650	423	860	479	349	180	132
7	123	a730	2,670	2,680	1,560	1,940	411	804	455	322	167	128
8	121	580	1,520	2,170	1,090	1,580	431	786	455	468	176	128
9	121	751	1,080	1,480	898	a1,310	455	715	427	998	205	142
10	121	1,380	911	1,210	769	a1,200	656	758	404	720	197	158
11	119	1,340	804	950	666	a1,150	1,250	752	367	567	197	158
12	119	1,980	678	780	594	a3,100	1,130	736	356	487	185	156
13	119	1,750	575	690	536	a2,300	1,040	705	378	435	174	156
14	119	1,660	510	616	531	a1,500	970	626	455	396	176	158
15	119	1,820	448	558	567	a1,300	905	554	572	374	171	156
16	123	1,600	436	513	590	a1,100	892	562	540	342	171	150
17	123	1,500	688	475	639	a1,000	938	630	526	311	171	129
18	117	2,010	645	495	705	a970	1,100	662	479	292	171	132
19	121	1,950	546	540	648	a850	1,050	662	443	269	169	140
20	123	1,300	518	536	594	752	1,050	710	411	250	169	138
21	123	968	672	618	594	695	1,050	695	385	232	169	138
22	148	754	771	3,040	634	710	879	648	398	221	167	138
23	138	610	827	2,230	846	786	792	580	411	205	167	137
24	132	580	1,350	5,020	1,050	764	872	526	427	221	167	135
25	130	744	1,290	2,810	1,390	780	1,100	554	540	202	167	137
26	128	1,700	1,430	1,640	1,090	866	1,330	662	495	197	167	135
27	138	5,680	2,440	1,170	2,950	950	1,040	1,020	522	182	165	134
28	138	4,010	12,600	964	2,810	846	860	1,170	644	180	167	134
29	154	2,360	5,910	816	-	725	944	1,170	853	176	167	135
30	194	1,540	3,150	675	-	639	898	892	720	171	154	142
31	172	-	2,260	a720	-	562	-	736	-	171	134	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Change in contents of Lake Ben Morrow Reservoir (acre-feet)	Adjusted for change in reservoir contents: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Runoff in inches
October	194	117	131	8,040	+1,300	9,340	152	1.49	1.72
November	5,680	192	1,512	89,950	+3,040	92,990	1,563	15.3	17.07
December	12,600	436	1,702	104,700	+160	104,860	1,705	16.7	19.25
Calendar year 1945	12,600	117	850	615,350	+710	616,060	851	8.34	113.13
January	5,020	475	1,495	91,930	-400	91,530	1,489	14.6	16.83
February	2,950	531	1,074	59,630	+520	60,150	1,085	10.6	11.04
March	3,100	562	1,236	76,020	-630	75,390	1,226	12.0	13.83
April	1,330	411	826	49,160	+190	49,350	829	8.13	9.07
May	1,170	526	777	47,780	-100	47,680	775	7.60	8.76
June	853	356	497	29,570	-20	29,550	497	4.87	5.43
July	998	171	360	22,110	-520	21,590	351	3.44	3.97
August	205	134	174	10,700	-3,720	6,980	114	1.12	1.29
September	159	127	140	8,340	-1,860	6,480	109	1.07	1.19
Water year 1945-46	12,600	117	826	597,930	-2,040	595,890	823	8.07	109.45

Peak discharge.- Nov. 27 (8 a.m.) 6,240 sec.-ft.; Dec. 6 (7 p.m.) 4,580 sec.-ft.; Dec. 28 (11 a.m.) 15,200 sec.-ft.; Jan. 22 (8 a.m.) 3,830 sec.-ft.; Jan. 24 (6:30 a.m.) 6,310 sec.-ft.; Feb. 27 (7 p.m.) 3,820 sec.-ft.
a No gage-height record; discharge computed on basis of records for station below Lake Ben Morrow Reservoir.

Little Sandy River near Bull Run, Oreg.

Location.- Water-stage recorder, lat. 45°25', long. 122°10', in NE¼ sec. 10, T. 2 S., R. 5 E., three-eighths of a mile upstream from Portland General Electric Co.'s dam and tunnel from Sandy River and 3 miles east of Bull Run. Datum of gage is 710.51 feet above mean sea level, adjustment of 1924 (levels by Portland General Electric Co.).

Drainage area.- 23 square miles.

Records available.- May 1911 to April 1913 (fragmentary), July 1919 to September 1946.

Average discharge.- 27 years (1919-46), 135 second-feet.

Extremes.- Maximum discharge during year, 2,940 second-feet Dec. 28 (gage height, 7.45 feet), from rating curve extended above 600 second-feet on basis of former curve defined to 2,000 second-feet; minimum, 14 second-feet Aug. 27-29, Sept. 30.
1911-13, 1919-46: Maximum discharge, 3,950 second-feet Nov. 20, 1921 (gage height, 9.18 feet), from rating curve extended above 2,000 second-feet; minimum, 8 second-feet Aug. 20, Sept. 16, 17, 1940.

Remarks.- Records fair below and poor above 500 second-feet. No diversion or regulation above station.

Cooperation.- Water-stage recorder graph furnished by Portland General Electric Co.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 10 to Sept. 30)

1.9	16	3.2	153	5.2	970
2.1	26	3.5	215	5.6	1,250
2.3	39	3.9	335	6.0	1,570
2.6	63	4.3	485	6.5	2,010
2.9	85	4.8	725	7.0	2,480

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	155	208	335	310	363	107	139	133	96	24	16
2	30	764	173	328	282	291	102	173	120	85	23	15
3	27	388	171	255	211	246	102	211	101	75	23	15
4	26	252	175	300	171	213	98	215	92	67	22	16
5	25	321	165	437	193	235	98	183	80	61	22	39
6	24	193	497	285	328	453	98	167	95	57	25	25
7	22	153	349	417	264	288	95	157	80	52	22	20
8	21	112	222	328	208	270	101	163	88	105	21	19
9	21	187	175	252	185	218	102	151	78	167	18	18
10	20	297	161	222	165	200	145	177	71	99	20	16
11	20	246	147	183	141	195	228	165	63	79	20	16
12	20	461	126	161	128	449	220	161	60	70	20	16
13	19	363	105	145	115	366	211	135	67	63	20	16
14	19	324	95	120	115	261	197	112	78	58	20	18
15	18	304	85	105	115	255	185	105	113	58	20	25
16	22	243	91	93	113	213	185	124	104	52	20	41
17	24	222	171	86	122	220	202	147	104	48	18	36
18	21	318	128	91	133	213	230	143	88	45	18	24
19	23	356	102	92	128	197	204	143	78	42	16	21
20	28	235	99	89	117	179	200	155	70	38	16	19
21	25	179	173	112	120	167	197	137	65	36	16	20
22	57	143	177	605	133	167	153	128	69	35	16	19
23	48	119	189	377	175	167	143	105	79	34	15	18
24	34	128	258	786	195	159	175	99	86	31	15	18
25	29	155	220	441	225	167	220	99	119	29	15	17
26	27	304	261	279	193	187	255	173	92	28	15	16
27	34	944	504	211	564	197	177	294	107	28	14	16
28	38	680	2,470	187	503	173	149	294	143	27	14	16
29	48	384	840	167	-	153	173	252	141	25	15	15
30	93	258	530	143	-	131	147	187	112	25	16	15
31	81	-	425	157	-	115	-	157	-	24	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	976	93	18	31.5	1.37	1.58	1,940
November	9,199	944	112	307	13.3	14.87	18,250
December	9,492	2,470	85	306	13.3	15.35	18,830
Calendar year 1945	60,601	2,470	13	166	7.22	97.99	120,200
January	7,789	786	86	251	10.9	12.59	15,450
February	5,652	564	113	202	8.78	9.14	11,210
March	7,108	453	115	229	9.96	11.49	14,100
April	4,899	255	95	163	7.09	7.92	9,720
May	5,051	294	99	163	7.09	8.17	10,020
June	2,776	143	60	92.5	4.02	4.49	5,510
July	1,739	167	24	56.1	2.44	2.81	3,450
August	575	24	14	18.5	.804	.93	1,140
September	601	41	15	20.0	.870	.97	1,190
Water year 1945-46	55,857	2,470	14	153	6.65	90.31	110,800

Washougal River near Washougal, Wash.

Location.- Staff gage, lat. 45°37'20", long. 122°18'00", in SE¼ sec. 27, T. 2 N., R. 4 E., half a mile above Cougar Creek and 5½ miles northeast of Washougal.

Drainage area.- 108 square miles.

Records available.- September 1944 to September 1946.

Extremes.- Maximum discharge observed during year, 18,200 second-feet Dec. 28 (gage height, 13.10 feet), from rating curve extended above 4,400 second-feet; minimum observed, 67 second-feet Sept. 29, 30 (gage height, 1.53 feet).

1944-46: Maximum discharge observed, 22,100 second-feet Feb. 7, 1945 (gage height, 14.40 feet), from rating curve extended above 4,400 second-feet; minimum observed, 57 second-feet Aug. 22, 1945 (gage height, 1.51 feet).

Remarks.- Records good except those above 7,500 second-feet or those for periods of shifting control or rapidly changing discharge, which are fair. Gage read twice daily except Oct. 21, Dec. 22, 26 when gage was read only once daily. No diversion or regulation above station.

Rating table, water year 1945-46, except for periods of shifting control (gage height, in feet, and discharge, in second-feet)

1.6	67	3.0	561	6.0	2,950
1.8	106	3.5	840	7.0	4,330
2.0	158	4.0	1,170	8.0	6,040
2.3	249	4.5	1,520	10.0	10,200
2.6	369	5.0	1,920	12.0	15,200

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	486	1,450	2,490	2,390	2,010	641	561	286	668	135	89
2	130	1,760	1,310	3,070	2,490	2,290	614	561	268	510	135	83
3	125	1,380	1,030	2,010	1,600	2,100	588	668	249	414	125	84
4	120	901	1,170	2,710	1,310	1,800	561	614	232	348	120	83
5	120	781	1,450	4,650	1,600	1,450	561	486	215	306	116	93
6	113	668	5,680	2,290	4,980	3,070	536	461	268	286	116	93
7	104	561	2,830	3,330	2,390	2,100	536	438	232	268	116	86
8	97	510	1,600	2,490	1,880	1,600	561	414	268	461	111	81
9	93	536	1,170	1,600	1,380	1,380	641	392	232	840	106	77
10	93	1,030	1,030	1,310	1,170	1,240	1,450	369	232	614	102	74
11	91	1,600	901	1,100	1,030	1,310	2,290	369	215	486	104	71
12	89	2,490	724	964	901	5,500	1,600	326	196	414	108	72
13	89	2,190	668	901	781	2,490	1,240	326	215	348	108	74
14	84	2,710	641	781	781	1,880	1,030	306	268	326	111	89
15	81	2,490	614	696	781	2,010	901	286	414	268	108	130
16	93	2,490	536	614	781	1,520	840	286	414	249	104	187
17	93	2,600	588	588	1,030	1,520	840	286	369	249	99	133
18	84	3,880	510	614	1,170	1,450	964	268	326	232	91	99
19	97	2,710	486	668	901	1,240	840	268	306	212	91	86
20	106	1,680	461	724	781	1,030	781	249	268	203	86	79
21	91	1,170	461	1,170	901	964	724	268	249	193	86	83
22	a120	964	438	3,200	1,030	1,030	614	249	249	181	86	79
23	a140	781	a500	1,760	1,450	1,380	588	232	249	176	86	79
24	a120	840	a640	6,230	2,100	1,380	641	215	268	170	83	72
25	a110	964	a550	2,950	2,390	1,310	668	249	414	167	83	72
26	148	4,650	1,310	1,760	1,680	1,310	696	306	369	156	84	74
27	286	6,990	2,100	1,380	4,650	1,310	588	348	348	153	84	72
28	348	3,740	13,800	1,100	2,950	1,030	510	392	486	148	81	72
29	326	2,830	5,320	1,030	-	964	641	414	1,380	138	84	67
30	438	1,840	3,200	840	-	781	614	369	901	138	97	72
31	461	-	3,200	1,100	-	696	-	326	-	135	91	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	4,628	461	81	149	1.38	1.59	9,180
November	58,222	6,990	486	1,941	18.0	20.05	115,500
December	56,388	13,800	438	1,818	16.8	19.41	111,800
Calendar year 1945	356,746	13,800	58	977	9.05	122.85	707,600
January	56,120	6,230	588	1,810	16.8	19.33	111,300
February	47,078	4,980	781	1,681	15.6	16.21	93,380
March	50,745	5,500	696	1,637	15.2	17.47	100,700
April	24,299	2,290	510	810	7.50	8.37	48,200
May	11,302	668	215	365	3.38	3.89	22,420
June	10,386	1,380	196	346	3.20	3.58	20,600
July	9,455	840	135	305	2.82	3.26	18,750
August	3,137	135	81	101	.935	1.08	6,220
September	2,605	187	67	86.8	.804	.90	5,170
Water year 1945-46	334,345	13,800	67	916	8.48	115.14	663,200

a No gage-height record; discharge computed on basis of records for Wind River above Trout Creek, near Carson.

Note.- Shifting-control method used Apr. 7 to June 22, July 1 to Sept. 30.

Middle Fork Willamette River above Salt Creek, near Oakridge, Oreg.

Location.- Water-stage recorder, lat. 43°44', long. 122°26', in SW¼ sec. 22, T. 21 S., R. 3 E., 400 feet upstream from Salt Creek and 2 miles southwest of Oakridge. Datum of gage is 1,202.8 feet above mean sea level (from river-profile survey).

Drainage area.- 392 square miles.

Records available.- October 1913 to September 1914, September 1935 to September 1946.

Average discharge.- 12 years, 1,016 second-feet.

Extremes.- Maximum discharge during year, 34,000 second-feet Dec. 28 (gage height, 12.06 feet), from rating curve extended above 13,000 second-feet by logarithmic plotting; minimum, 232 second-feet Oct. 15, 16 (gage height, 2.07 feet).
1913-14, 1935-46: Maximum discharge, that of Dec. 28, 1945; minimum, 201 second-feet Nov. 27 to Dec. 2, 1936 (gage height, 1.53 feet).

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30			
2.0	205	3.7	1,230	7.0	8,620	2.3	330	5.0	3,360
2.2	284	4.2	1,840	8.0	12,500	2.6	465	6.0	5,760
2.5	408	4.7	2,640	9.0	17,100	3.0	710	7.0	8,900
2.9	605	5.3	3,870	10.5	24,800	3.5	1,150	8.0	12,600
3.3	868	6.0	5,570			4.0	1,710	9.0	17,100
						4.5	2,420		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	252	341	1,730	3,240	1,180	2,390	1,190	1,440	1,520	822	420	370
2	248	366	1,370	3,220	1,190	2,040	1,090	1,470	1,600	846	410	374
3	248	362	1,170	3,320	1,130	1,900	1,010	1,750	1,630	830	406	397
4	248	313	1,360	5,010	1,050	1,740	960	1,980	1,520	798	402	406
5	244	333	1,500	9,790	1,030	1,610	924	1,850	1,450	758	402	384
6	244	354	3,260	5,080	1,760	1,740	888	1,700	1,400	726	397	370
7	244	329	4,380	3,880	1,790	1,660	862	1,670	1,240	710	392	362
8	240	313	2,310	3,260	1,440	1,510	879	1,570	1,200	726	392	358
9	240	527	1,690	2,370	1,250	1,440	879	1,520	1,170	718	388	354
10	240	807	1,580	2,040	1,140	1,490	897	1,570	1,090	675	384	350
11	240	611	1,460	1,760	1,030	1,450	915	1,570	1,050	668	384	346
12	240	1,020	1,250	1,550	951	2,430	1,030	1,570	1,070	654	379	342
13	236	884	1,060	1,400	888	3,440	1,130	1,580	1,160	634	379	342
14	236	706	917	1,300	879	2,340	1,200	1,490	1,330	614	374	342
15	232	1,200	822	1,250	933	2,140	1,290	1,390	1,300	588	374	358
16	240	1,320	765	1,180	1,020	1,970	1,450	1,420	1,210	557	370	420
17	260	1,250	719	1,130	1,040	1,930	1,710	1,610	1,120	539	370	397
18	244	2,370	675	1,100	1,110	1,890	2,110	1,830	1,090	521	366	366
19	244	3,800	640	1,070	1,160	1,670	2,070	1,810	1,170	515	366	354
20	268	1,800	634	1,020	1,220	1,480	1,790	1,840	1,290	510	384	346
21	256	1,140	942	996	1,270	1,340	1,540	1,810	1,340	500	366	342
22	284	968	1,130	3,140	1,290	1,330	1,350	1,670	1,280	495	366	342
23	272	950	1,180	2,860	1,230	1,270	1,270	1,550	1,160	485	362	338
24	256	942	1,770	3,990	1,540	1,230	a1,500	1,430	1,060	475	362	334
25	248	1,300	1,620	3,880	1,880	1,160	a2,000	1,440	1,000	460	362	330
26	244	1,730	2,000	2,590	1,570	1,180	a2,250	1,650	933	460	358	330
27	256	6,140	3,690	2,080	4,330	1,380	a2,000	1,870	862	455	354	330
28	317	6,610	24,600	1,810	3,420	1,420	a1,800	1,880	846	440	354	326
29	296	4,140	15,800	1,600	-	1,490	a1,800	1,720	830	435	397	326
30	391	2,410	7,850	1,380	-	1,430	1,540	1,540	806	435	392	322
31	370	-	4,700	1,250	-	1,300	-	1,490	-	430	374	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	8,078	391	232	261	0.666	0.77	16,020
November	45,336	6,610	313	1,511	3.85	4.30	89,920
December	94,574	24,600	634	3,051	7.78	8.97	187,600
Calendar year 1945	448,159	24,600	232	1,228	3.13	42.51	888,900
January	79,546	9,790	996	2,566	6.55	7.55	157,800
February	39,721	4,330	879	1,419	3.62	3.77	78,790
March	52,790	3,440	1,160	1,703	4.34	5.01	104,700
April	41,324	2,250	882	1,377	3.51	3.92	81,960
May	50,680	1,980	1,390	1,635	4.17	4.81	100,500
June	35,727	1,630	806	1,191	3.04	3.39	70,860
July	18,479	846	430	596	1.52	1.75	36,650
August	11,786	420	354	380	.969	1.12	23,380
September	10,658	420	322	355	.906	1.01	21,140
Water year 1945-46	488,699	24,600	232	1,339	3.42	46.37	969,300

Peak discharge.- Nov. 27 (6:30 p.m.) 7,980 sec.-ft.; Dec. 6 (10 p.m.) 7,690 sec.-ft.; Dec. 28 (8:30 p.m.) 34,000 sec.-ft.; Jan. 5 (6 a.m.) 11,100 sec.-ft.; Jan. 24 (5 p.m.) 5,440 sec.-ft.; Feb. 27 (12 m.) 5,930 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage and records for Salt Creek and Salmon Creek near Oakridge.

Middle Fork Willamette River at Eula, Oreg.

Location.- Water-stage recorder, lat. 43°50', long. 122°37', in sec. 18, T. 20 S., R. 2 E., a quarter of a mile southwest of Eula and 8 miles downstream from North Fork. Datum of gage is 861.65 feet above mean sea level, datum of 1929.

Drainage area.- 941 square miles.

Records available.- July 1923 to September 1946.

Average discharge.- 22 years (1923-26, 1927-46), 2,413 second-feet.

Extremes.- Maximum discharge during year, 65,200 second-feet Dec. 28 (gage height, 18.8 feet, from floodmark), from rating curve extended above 39,000 second-feet; minimum, 588 second-feet Oct. 15 (gage height, 1.23 feet).
1923-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 450 second-feet Nov. 24, 25, Dec. 5, 6, 1929, Sept. 4-6, 16, 17, 1931.

Remarks.- Records good. No large diversions above station. Occasional diurnal fluctuation during periods of low water caused by logging operations upstream.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30					
1.3	620	4.7	4,220	2.9	700	5.1	3,470	10.0	17,800
1.7	830	5.7	6,220	3.3	1,000	6.0	5,480	11.5	24,200
2.2	1,180	7.0	9,380	3.8	1,510	7.0	8,000	13.0	31,400
3.0	1,870	8.5	14,200	4.4	2,310	8.5	12,400	15.0	42,100
3.8	2,800								

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	611	856	4,740	8,760	3,320	6,510	3,280	3,690	3,730	2,010	984	826
2	611	1,000	3,720	8,400	3,320	5,670	3,030	3,710	3,880	2,030	968	833
3	606	979	3,160	8,350	3,120	5,260	2,820	4,360	3,940	1,990	944	888
4	606	788	3,320	10,800	2,930	4,880	2,640	5,000	3,710	1,890	944	898
5	606	869	3,590	14,900	2,820	4,520	2,580	4,720	3,510	1,800	936	856
6	602	930	6,100	9,540	3,820	4,910	2,460	4,310	3,510	1,750	928	826
7	598	856	9,380	9,060	4,360	4,820	2,380	4,200	3,080	1,710	920	814
8	593	800	5,930	8,300	3,690	4,380	2,440	4,030	2,930	1,730	912	798
9	593	1,360	4,460	6,680	3,280	4,090	2,480	3,840	2,910	1,750	896	784
10	593	2,280	4,130	5,770	3,000	4,160	2,490	3,920	2,740	1,820	888	770
11	593	1,770	3,850	5,000	2,790	4,050	2,610	3,960	2,810	1,590	872	763
12	593	2,980	3,340	4,360	2,580	6,080	2,770	3,900	2,600	1,560	872	756
13	598	2,870	2,840	3,940	2,430	8,840	2,960	3,900	2,750	1,510	864	749
14	593	2,080	2,520	3,630	2,370	6,840	3,140	3,750	3,280	1,480	856	749
15	588	3,010	2,290	3,430	2,480	6,110	3,320	3,510	3,320	1,410	848	805
16	598	3,260	2,120	3,190	2,660	5,550	3,670	3,570	3,050	1,360	840	1,010
17	629	3,320	2,000	3,070	2,720	5,410	4,200	3,980	2,800	1,300	833	968
18	611	4,390	1,880	2,960	2,820	5,260	5,290	4,590	2,890	1,260	826	856
19	606	8,960	1,770	2,900	2,930	4,750	5,380	4,630	2,770	1,230	819	805
20	652	5,000	1,740	2,800	3,030	4,200	4,770	4,630	2,950	1,200	840	784
21	638	3,180	2,190	2,690	3,120	3,820	4,110	4,490	3,050	1,170	826	770
22	710	2,620	2,580	7,040	3,140	3,750	3,650	4,200	3,000	1,160	814	770
23	680	2,490	2,710	7,740	3,020	3,530	3,390	3,920	2,800	1,130	814	756
24	638	2,370	3,700	9,260	3,510	3,430	3,860	3,590	2,630	1,090	814	749
25	624	2,900	3,600	9,650	4,490	3,240	5,220	3,610	2,580	1,060	814	742
26	620	3,670	4,420	7,270	3,920	3,260	5,890	4,110	2,380	1,050	798	728
27	624	11,100	7,340	5,910	7,840	3,690	5,020	4,860	2,200	1,060	791	728
28	710	13,600	40,800	5,070	8,300	3,840	4,360	4,750	2,150	1,020	791	721
29	705	9,580	35,800	4,540	-	4,110	4,380	4,450	2,120	1,000	888	714
30	869	6,330	18,700	3,900	-	3,920	4,090	3,880	2,020	1,000	904	707
31	902	-	11,800	3,550	-	3,630	-	3,710	-	1,000	848	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	19,800	902	588	838	0.678	0.78	39,270
November	106,198	13,600	788	3,540	3.76	4.20	210,600
December	206,520	40,800	1,740	8,662	7.08	8.16	409,600
Calendar year 1945	1,131,837	40,800	588	3,101	3.30	44.73	2,245,000
January	192,460	14,900	2,890	6,208	6.60	7.81	381,700
February	97,810	8,300	2,370	3,493	3.71	3.87	194,000
March	146,510	8,840	3,240	4,726	5.02	5.79	290,800
April	108,660	5,890	2,380	3,622	3.85	4.29	215,500
May	127,570	5,000	3,510	4,115	4.37	5.04	253,000
June	87,690	3,940	2,020	2,923	3.11	3.47	173,900
July	43,920	2,030	1,000	1,417	1.51	1.74	87,110
August	26,892	984	791	867	.921	1.06	53,340
September	23,921	1,010	707	797	.847	.95	47,450
Water year 1945-46	1,187,951	40,800	588	3,255	3.46	46.96	2,356,000

Peak discharge.- Nov. 27 (8 p.m.) 15,000 sec.-ft.; Dec. 28 (about 10 p.m.) 65,200 sec.-ft.; Jan. 5 (8 a.m.) 16,600 sec.-ft.; Jan. 24 (8 p.m.) 11,700 sec.-ft.; Feb. 27 (3 p.m.) 10,700 sec.-ft.; Mar. 13 (1 a.m.) 10,100 sec.-ft.

Willamette River at Springfield, Oreg.

Location.- Water-stage recorder, lat. 44°02'45", long. 123°01'40", in SE¼ sec. 34, T. 17 S., R. 3 W., at highway bridge at Springfield. Datum of gage is 423.47 feet above mean sea level, datum of 1929.

Drainage area.- 2,030 square miles.

Records available.- November 1911 to December 1913, October 1928 to September 1946. June 1919 to September 1928 at site 4 miles downstream, published as Willamette River at Eugene; 1894 to 1946 (records of stage by U. S. Weather Bureau) at site at Eugene.

Average discharge.- 28 years (1912-13, 1919-46), 4,949 second-feet.

Extremes.- Maximum discharge during year, 140,000 second-feet Dec. 29 (gage height, 20.9 feet), from rating curve extended above 93,000 second-feet; minimum, 809 second-feet (regulated) Aug. 10 (gage height, 1.67 feet); minimum daily, 811 second-feet Oct. 8-12, 14-16.

1911-13, 1919-46: Maximum discharge, that of Dec. 29, 1945; minimum, 500 second-feet Aug. 11, 1926.

Maximum stage recorded by U. S. Weather Bureau, 22.0 feet Jan. 25, 1903, at Eugene. Floods in December 1861 and February 1890 reached about the same stage.

Remarks.- Records good. Slight diurnal fluctuation at low flow caused by logging operations in basin of Middle Fork Willamette River. Small diversions above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	858	1,400	10,800	21,500	7,450	14,900	6,350	5,110	4,600	2,450	1,210	1,010
2	847	1,440	8,260	18,800	7,840	12,600	5,730	4,830	4,700	2,420	1,170	990
3	847	1,710	6,910	21,500	7,750	13,900	5,160	5,230	4,700	2,410	1,150	1,010
4	838	1,360	6,530	22,400	7,000	12,400	4,650	6,020	4,490	2,300	1,130	1,040
5	838	1,300	7,450	49,800	6,470	10,800	4,330	6,000	4,200	2,240	1,120	1,030
6	829	1,830	8,990	32,500	9,900	11,200	4,100	5,480	4,240	2,190	1,100	998
7	829	1,630	27,300	24,600	13,700	11,000	3,880	5,210	3,820	2,150	1,080	986
8	811	1,480	17,400	26,700	11,200	9,660	3,990	5,180	3,660	2,150	1,070	950
9	811	2,230	12,000	18,800	9,430	8,600	4,200	5,020	3,520	2,250	1,110	918
10	811	6,910	10,300	15,000	8,560	8,230	4,470	4,930	3,420	2,160	982	902
11	811	5,780	9,830	12,500	7,660	8,140	4,740	4,900	3,200	2,030	1,050	886
12	811	8,510	8,020	10,700	6,760	12,600	4,830	4,830	3,080	1,970	1,040	862
13	820	9,730	6,700	9,400	6,050	29,900	5,020	4,810	3,180	1,840	1,040	838
14	811	5,730	5,760	8,560	5,550	20,700	5,110	4,700	3,680	1,790	1,020	846
15	811	6,350	5,110	8,020	5,760	15,700	5,130	4,380	4,240	1,760	998	918
16	811	8,470	4,700	7,330	6,300	14,400	5,400	4,240	3,840	1,650	1,010	1,200
17	829	10,000	4,200	6,760	6,270	13,800	5,860	4,600	3,520	1,600	990	1,670
18	847	10,800	3,880	6,330	6,560	14,600	6,910	5,060	3,440	1,530	990	1,570
19	838	32,300	3,600	6,020	8,470	12,000	7,450	5,230	3,340	1,470	974	1,470
20	865	18,400	3,420	5,760	6,760	10,000	6,730	5,210	3,480	1,450	958	1,420
21	912	11,400	3,860	5,420	6,640	8,630	5,910	5,130	3,600	1,420	974	1,390
22	980	8,170	4,600	13,600	6,730	8,020	5,230	4,880	3,600	1,400	950	1,360
23	1,060	6,850	4,720	18,500	6,240	7,570	4,830	4,650	3,360	1,360	942	1,350
24	970	5,830	7,480	19,700	6,790	7,090	4,930	4,200	3,240	1,340	934	1,340
25	912	6,440	7,860	28,000	9,560	6,670	6,160	4,180	3,220	1,270	958	1,330
26	884	8,760	8,920	17,600	8,350	6,300	7,540	4,970	3,030	1,270	950	1,330
27	884	20,100	11,700	13,400	15,000	6,880	8,850	6,080	2,810	1,290	910	1,300
28	950	33,100	64,200	11,300	21,100	7,120	5,830	6,530	2,670	1,270	910	1,300
29	1,040	28,300	106,000	10,400	-	8,200	5,630	6,440	2,690	1,230	958	1,290
30	1,130	15,900	51,000	9,010	-	7,900	5,680	5,500	2,820	1,200	1,080	1,300
31	1,560	-	30,600	7,840	-	7,180	-	4,930	-	1,210	1,050	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	27,853	1,560	811	898	0.442	0.51	55,250
November	280,210	33,100	1,300	9,340	4.60	5.13	555,800
December	471,700	106,000	3,420	15,220	7.50	8.64	935,800
Calendar year 1945	2,321,821	106,000	793	8,361	3.13	42.53	4,605,000
January	485,750	49,800	5,420	15,670	7.72	8.90	963,500
February	233,850	21,100	5,550	8,352	4.11	4.28	463,800
March	346,690	29,900	6,300	11,180	5.51	6.35	687,600
April	162,630	7,540	3,880	5,421	2.67	2.98	322,600
May	158,460	6,530	4,180	5,112	2.52	2.90	314,300
June	107,190	4,700	2,620	3,573	1.76	1.96	212,600
July	54,070	2,450	1,200	1,744	.859	.99	107,200
August	31,808	1,210	910	1,026	.505	.58	63,090
September	34,784	1,670	838	1,159	.571	.64	68,990
Water year 1945-46	2,394,995	106,000	811	6,562	3.23	43.86	4,750,000

Peak discharge.- Nov. 19 (12 m.) 39,400 sec.-ft.; Dec. 7 (8 to 10 a.m.) 32,900 sec.-ft.; Dec. 29 (1 a.m.) 140,000 sec.-ft.; Jan. 5 (2 p.m.) 57,700 sec.-ft.; Jan. 25 (3:30 a.m.) 29,400 sec.-ft.; Mar. 13 (9:30 a.m.) 33,000 sec.-ft.

Willamette River at Harrisburg, Oreg.

Location.- Water-stage recorder, lat. 44°16'03", long. 123°10'24", in SW¼SE¼ sec. 16, T. 15 S., R. 4 W., at east end of State highway bridge at Harrisburg. Datum of gage is 290.07 feet above mean sea level, datum of 1929.

Drainage area.- 3,420 square miles.

Records available.- October 1944 to September 1946.

Extremes.- Maximum discharge during year, 210,000 second-feet Dec. 29 (gage height, 19.69 feet), from rating curve extended above 55,000 feet; minimum, 2,210 second-feet Oct. 14, 15 (gage height, 1.37 feet).

1944-46: Maximum discharge, that of Dec. 29, 1945; minimum, 1,990 second-feet Oct. 30, 1944.

Flood of 1861 reached a stage of about 21 feet (present site and datum), from information by local residents. Flood of Jan. 1, 1943, reached a stage of 19.1 feet (present datum), from U. S. Weather Bureau records.

Remarks.- Records good. Many small diversions above station for irrigation; about 15 second-feet diverted from McKenzie River for city of Eugene water supply. Flow regulated at times by Cottage Grove and Fern Ridge Reservoirs (see pp. 116, 128).

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.2	2,010	6.8	14,850	15.5	80,900
2.0	3,050	8.5	22,330	17.5	124,000
3.0	4,700	10.5	32,420	18.9	169,600
4.1	6,980	12.5	45,580		
5.3	10,000	14.5	65,600		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,370	3,350	25,300	43,200	14,500	30,100	12,800	11,300	10,300	6,180	3,490	2,870
2	2,360	3,280	19,100	35,100	14,800	24,300	11,700	10,600	10,200	6,040	3,410	2,850
3	2,350	3,970	15,500	37,600	14,800	25,200	10,900	11,000	10,200	5,970	3,340	2,850
4	2,350	3,490	13,700	35,400	13,500	23,100	10,200	12,300	10,100	5,850	3,260	2,850
5	2,320	3,100	14,700	58,900	12,500	20,200	9,730	12,900	9,680	5,640	3,230	2,800
6	2,300	3,690	15,100	60,600	15,700	19,800	9,360	12,000	9,600	5,440	3,200	2,780
7	2,270	3,830	37,300	41,500	26,000	20,500	8,990	11,400	9,200	5,260	3,200	2,740
8	2,250	3,570	36,000	45,200	21,700	18,200	8,990	11,200	8,580	5,280	3,120	2,690
9	2,240	3,510	25,400	36,400	17,900	16,500	9,360	10,600	8,460	5,720	3,080	2,630
10	2,250	9,500	20,600	29,500	16,000	15,400	9,760	10,500	8,100	5,500	3,140	2,580
11	2,240	10,600	19,200	24,700	14,700	15,300	10,300	10,600	7,710	5,160	2,950	2,550
12	2,250	11,700	16,500	20,900	13,100	18,100	10,500	10,600	7,520	5,000	2,990	2,510
13	2,250	18,200	13,900	18,100	12,000	42,700	10,800	10,500	7,520	4,870	2,980	2,470
14	2,240	11,600	a12,000	16,200	11,200	38,900	10,800	10,400	8,100	4,700	2,940	2,510
15	2,230	10,800	a10,700	15,000	11,300	30,000	10,800	9,920	9,600	4,660	2,920	2,670
16	2,250	14,900	9,950	13,700	11,900	28,300	11,000	9,680	9,280	4,560	2,900	3,120
17	2,270	18,100	9,170	12,700	11,900	25,000	11,500	9,920	8,680	4,390	2,840	3,690
18	2,290	17,100	8,680	12,000	12,200	27,100	12,800	10,800	8,160	4,320	2,780	3,620
19	2,290	40,100	8,200	11,600	12,200	23,500	14,500	11,400	7,830	4,170	2,770	3,320
20	2,300	37,200	7,830	11,300	12,400	19,900	13,700	11,400	7,860	4,080	2,760	3,220
21	2,440	22,400	8,180	10,900	12,400	17,200	12,400	11,300	7,960	4,000	2,740	3,140
22	2,540	15,800	9,810	17,000	12,700	15,900	11,200	10,800	7,930	3,930	2,760	3,100
23	2,770	12,700	10,000	34,300	12,100	15,200	10,400	10,600	7,880	3,830	2,700	3,060
24	2,630	11,000	13,400	31,200	12,200	14,400	10,300	9,890	7,500	3,780	2,690	3,010
25	2,580	11,000	15,700	46,100	16,100	13,700	11,800	9,780	7,400	3,670	2,740	2,990
26	2,370	15,000	16,300	36,400	16,100	13,000	14,600	10,400	7,280	3,610	2,760	2,980
27	2,350	28,400	21,200	27,300	19,100	13,400	14,400	11,600	6,840	3,650	2,700	2,920
28	2,400	57,200	45,000	22,300	36,400	14,200	12,600	12,400	6,550	3,560	2,640	2,910
29	2,600	54,700	173,000	19,900	-	15,300	11,700	12,700	6,710	3,510	2,730	2,870
30	2,760	37,400	100,000	17,700	-	15,200	12,300	11,600	6,420	3,510	2,970	2,880
31	3,300	-	60,600	15,300	-	14,000	-	10,600	-	3,510	2,980	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	74,410	3,300	2,230	2,400	0.702	0.81	147,600
November	497,190	57,200	3,100	16,570	4.85	5.41	986,200
December	812,020	173,000	7,830	26,190	7.66	8.83	1,611,000
Calendar year 1945	4,535,960	173,000	2,230	12,430	3.63	49.33	8,998,000
January	858,000	60,600	10,900	27,680	8.09	9.33	1,702,000
February	427,200	36,400	11,200	15,260	4.46	4.65	847,300
March	643,600	42,700	13,000	20,760	6.07	7.00	1,277,000
April	340,190	14,600	8,990	11,340	3.32	3.70	674,800
May	340,690	12,900	9,680	10,990	3.21	3.70	675,700
June	249,150	10,300	6,420	8,305	2.43	2.71	494,200
July	143,350	6,180	3,510	4,624	1.35	1.56	284,300
August	91,710	3,490	2,640	2,958	.865	1.00	181,900
September	87,180	3,690	2,470	2,906	.850	.95	172,900
Water year 1945-46	4,564,690	173,000	2,230	12,510	3.66	49.65	9,055,000

a No gage-height record; discharge computed on basis of records for Willamette River at Springfield and McKenzie River near Coburg.

Willamette River at Albany, Oreg.

Location.- Water-stage recorder, lat. 44°38'20", long. 123°06'20", in SW¼ sec. 6, T. 11 S., R. 3 W., at Albany, just downstream from Calapooya River. Datum of gage is 171.70 feet above mean sea level, datum of 1929.

Drainage area.- 4,840 square miles.

Records available.- November 1878 to April 1882, 1883 to 1888 (fragmentary), January 1892 to September 1946.

Average discharge.- 51 years (1895-1946), 13,582 second-feet.

Extremes.- Maximum discharge during year, 206,000 second-feet Dec. 30 (gage height, 30.0 feet); minimum, 2,680 second-feet Sept. 13, 14 (gage height, -0.60 foot).
1878-82, 1892-1946: Maximum discharge, 266,000 second-feet Jan. 14, 1881 (gage height, 32.8 feet); minimum, 1,840 second-feet Sept. 1, 2, 1940.
Maximum stage known, 36.0 feet Dec. 4, 1861 (discharge, 340,000 second-feet, from rating curve extended above 220,000 second-feet). Flood of Feb. 4, 1890, reached a stage of 33.9 feet (discharge, 291,000 second-feet).

Remarks.- Records good. Flow regulated at times by Cottage Grove and Fern Ridge Reservoirs (see pp.116, 128). Albany power canal diverts water from South Santiam River into Willamette River above station; small diversions for irrigation.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,280	4,500	54,700	86,500	22,500	41,500	17,200	13,300	11,100	6,940	3,690	3,080
2	3,320	4,470	36,200	62,500	21,600	35,300	15,400	12,100	10,600	6,650	3,670	2,960
3	3,310	4,640	28,300	50,600	22,800	32,400	14,000	11,700	10,700	6,510	3,590	3,010
4	3,320	5,130	24,800	51,200	21,600	32,600	13,000	12,500	10,700	6,410	3,530	3,030
5	3,480	4,410	24,200	53,500	20,000	29,500	12,000	14,000	10,300	6,270	3,450	3,010
6	3,640	3,880	25,300	67,500	26,900	26,700	11,400	13,800	9,910	6,090	3,400	2,960
7	3,830	4,350	31,100	78,300	39,500	26,600	10,800	13,000	9,940	5,860	3,390	2,960
8	3,990	4,220	49,500	65,200	44,400	25,300	10,500	12,300	9,380	5,880	3,360	2,930
9	3,950	4,200	46,800	61,900	36,000	22,500	10,800	11,900	8,980	5,790	3,320	2,830
10	3,910	5,210	35,000	51,500	30,000	20,500	11,500	11,400	8,730	6,000	3,300	2,780
11	3,910	11,400	29,800	41,000	26,400	20,100	12,300	11,300	8,310	5,720	3,260	2,760
12	4,000	11,100	26,300	34,300	22,300	23,000	13,000	11,300	7,920	5,430	3,190	2,730
13	4,020	15,900	22,100	29,800	19,600	39,000	13,000	11,200	7,800	5,280	3,190	2,690
14	4,000	16,800	18,600	26,600	17,600	58,100	13,100	11,100	7,980	5,060	3,190	2,720
15	3,930	12,000	16,200	24,300	16,100	55,500	12,800	10,700	8,980	5,000	3,160	2,860
16	3,900	13,800	14,700	22,500	16,000	45,400	12,800	10,200	9,860	4,920	3,080	3,000
17	3,690	18,400	13,700	20,900	16,200	39,900	13,100	10,100	9,240	4,760	3,070	3,340
18	3,420	21,000	12,700	19,600	16,000	37,400	13,800	10,700	8,790	4,540	3,030	3,670
19	3,300	25,900	11,900	18,700	16,000	36,200	15,800	11,600	8,390	4,470	2,990	3,550
20	3,180	44,200	11,200	17,700	15,700	30,700	16,500	11,900	8,230	4,370	2,960	3,370
21	3,220	40,900	11,200	16,500	15,800	26,000	15,200	12,100	8,230	4,220	2,930	3,530
22	3,360	26,400	12,800	18,300	15,900	22,700	13,700	11,600	8,280	4,090	2,920	4,280
23	3,550	19,200	14,800	32,900	15,900	20,000	12,200	11,200	8,310	4,060	2,930	4,450
24	3,690	15,600	18,600	43,000	15,500	19,900	11,400	10,800	7,950	3,950	2,890	4,080
25	3,530	14,000	23,600	47,600	17,900	19,200	11,900	10,200	7,900	3,860	2,880	3,610
26	3,320	18,300	24,100	57,700	21,400	18,300	14,700	10,300	7,820	3,780	2,860	4,680
27	3,200	31,400	26,600	48,800	21,000	17,500	16,800	11,500	7,600	3,830	2,850	4,760
28	3,010	52,300	34,500	36,900	32,300	18,500	15,300	12,600	7,350	3,860	2,830	4,740
29	3,120	71,100	69,100	31,300	-	19,300	13,600	13,400	7,180	3,830	2,800	4,720
30	3,390	72,700	185,000	28,800	-	20,700	13,500	13,300	7,200	3,740	2,880	4,720
31	3,810	-	130,000	25,500	-	19,300	-	11,900	-	3,710	3,130	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	110,580	4,020	3,010	3,567	0.737	0.85	219,300
November	597,410	72,700	3,880	19,910	4.11	4.59	1,185,000
December	1,083,400	185,000	11,200	34,950	7.22	8.32	2,149,000
Calendar year 1945	5,865,620	185,000	2,550	16,070	3.32	45.07	11,640,000
January	1,271,400	86,500	16,500	41,010	8.47	9.77	2,522,000
February	622,900	44,400	15,500	22,250	4.60	4.79	1,236,000
March	899,600	58,100	17,500	29,020	6.00	6.91	1,784,000
April	401,100	17,200	10,500	13,370	2.76	3.08	795,600
May	365,000	14,000	10,100	11,770	2.43	2.80	724,000
June	263,660	11,100	7,180	8,789	1.82	2.03	523,000
July	154,880	6,940	3,710	4,996	1.03	1.19	307,200
August	97,720	3,690	2,800	3,152	.651	.75	193,800
September	103,810	4,760	2,690	3,460	.715	.80	205,900
Water year 1945-46	5,971,460	185,000	2,690	16,360	3.38	45.88	11,840,000

Peak discharge.- Nov. 30 (2 a.m.) 74,600 sec.-ft.; Dec. 8 (8 to 9 p.m.) 53,300 sec.-ft.; Dec. 30 (8:30 a.m.) 206,000 sec.-ft.; Jan. 7 (6 to 7 a.m.) 80,900 sec.-ft.; Jan. 26 (12 m.) 59,100 sec.-ft.; Mar. 14 (8 p.m.) 61,100 sec.-ft.

Willamette River at Salem, Oreg.

Location.- Water-stage recorder, lat. 44°56'40", long. 123°02'30", in SW¼ sec. 22, T. 7 S., R. 3 W., 300 feet upstream from highway bridge at Salem. Datum of gage is 113.61 feet above mean sea level, datum of 1929.

Drainage area.- 7,280 square miles.

Records available.- October 1909 to December 1916, October 1927 to September 1946.

Average discharge.- 26 years, 21,670 second-feet.

Extremes.- Maximum discharge during year, 255,000 second-feet Dec. 30 (gage height, 28.35 feet); minimum, 3,430 second-feet Sept. 13 (gage height, -3.99 feet).
1909-16, 1927-46: Maximum discharge observed, 315,000 second-feet Nov. 25, 1909 (gage height, 30.5 feet); minimum, 2,470 second-feet Aug. 27, 1940 (gage height, -4.45 feet).
Maximum discharge known, 500,000 second-feet Dec. 4, 1861 (gage height, about 39 feet), from rating curve extended above 250,000 second-feet in 1916.
Flood of Feb. 5, 1890, reached a stage of 37.1 feet.

Remarks.- Records good. Many small diversions for irrigation above station; part of flow of Salen Canal, which diverts water from North Santiam River, returns to Willamette River below station, through Mill Creek at Salem. Flow regulated at times by Cottage Grove and Fern Ridge Reservoirs (see pp. 116, 128).

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,160	5,510	95,300	159,000	36,400	66,400	26,500	21,700	17,300	10,600	5,060	4,220
2	4,200	5,900	66,200	116,000	37,400	60,400	24,000	20,000	16,700	10,100	5,000	4,130
3	4,260	7,690	49,200	89,600	38,100	54,800	22,000	19,600	16,500	9,780	4,920	4,040
4	4,260	8,310	42,200	81,300	35,200	52,300	20,500	21,400	16,400	9,400	4,830	4,130
5	4,330	7,310	40,800	87,600	32,600	47,200	19,100	23,300	15,700	9,000	4,770	4,130
6	4,390	6,820	43,300	96,500	49,900	42,800	18,200	22,700	15,100	8,640	4,700	4,070
7	4,500	6,900	59,900	105,000	69,600	43,400	17,400	21,200	15,200	8,310	4,590	4,000
8	4,660	6,900	72,700	108,000	69,600	40,800	16,900	20,300	14,500	8,130	4,530	3,980
9	4,720	6,600	73,300	94,700	57,700	36,400	17,400	19,400	13,800	8,490	4,420	3,950
10	4,720	8,760	59,000	82,600	a49,000	33,200	18,500	18,500	13,400	9,270	4,370	3,780
11	4,680	16,700	47,800	66,500	a42,000	32,300	22,300	18,600	12,600	8,760	4,260	3,600
12	4,660	19,200	41,400	54,000	36,800	36,900	24,600	18,500	12,100	8,190	4,180	3,570
13	4,740	24,600	35,100	45,900	31,500	68,200	24,300	18,300	11,800	7,770	4,150	3,500
14	4,740	28,600	29,300	40,300	28,100	81,200	23,900	18,100	12,100	7,470	4,150	3,460
15	4,720	24,500	25,300	36,200	25,600	84,300	23,100	17,300	13,300	7,260	4,150	3,710
16	4,680	25,800	22,600	33,100	24,600	76,500	22,700	16,600	15,100	7,160	4,110	3,950
17	4,680	32,500	21,300	30,300	24,800	65,900	23,000	15,500	14,800	6,920	4,000	4,610
18	4,350	35,800	20,400	27,700	24,800	61,300	24,400	17,400	13,900	6,600	3,960	5,130
19	4,240	50,600	19,100	26,400	24,600	56,800	27,600	18,700	12,900	6,410	3,910	4,960
20	4,130	63,100	17,900	25,100	23,700	49,000	28,000	19,200	12,600	6,270	3,820	4,630
21	4,090	63,400	18,300	23,800	23,500	41,000	26,300	19,100	12,400	6,120	3,780	4,390
22	4,200	45,600	21,400	33,800	23,800	36,200	23,800	18,200	12,200	6,050	3,770	4,760
23	4,400	31,800	24,100	57,400	24,200	33,900	21,400	17,700	12,200	5,850	3,710	5,040
24	4,760	26,000	31,400	73,000	24,200	32,100	20,100	17,000	11,900	5,790	3,680	5,080
25	4,740	24,300	40,500	89,700	28,300	30,200	21,200	16,100	11,600	5,630	3,730	4,610
26	4,520	32,000	42,100	86,900	33,300	a29,000	25,200	16,400	11,900	5,430	3,660	4,960
27	4,370	66,700	45,100	75,200	35,600	a28,000	27,900	18,500	11,400	5,390	3,680	5,410
28	4,260	104,000	63,600	58,300	58,300	a29,000	25,500	20,000	10,700	5,350	3,680	5,410
29	4,150	120,000	134,000	a50,000	-	30,400	22,700	21,000	10,800	5,290	3,730	5,410
30	4,330	114,000	221,000	44,600	-	31,400	22,400	20,700	11,200	5,190	3,730	5,430
31	4,700	-	221,000	38,900	-	29,600	-	18,800	-	5,150	3,890	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	138,340	4,760	4,090	4,463	0.613	0.71	274,400
November	1,019,900	120,000	5,510	34,000	4.67	5.21	2,023,000
December	1,744,600	221,000	17,900	56,280	7.73	8.91	3,460,000
Calendar year 1945	9,606,830	221,000	3,090	26,320	3.62	49.07	19,060,000
January	2,037,400	159,000	23,800	65,720	9.03	10.41	4,041,000
February	1,013,200	69,600	23,500	36,190	4.97	5.18	2,010,000
March	1,440,900	84,300	28,000	46,480	6.38	7.36	2,858,000
April	680,900	28,000	16,900	22,700	3.12	3.48	1,351,000
May	590,800	23,300	16,100	19,060	2.62	3.02	1,172,000
June	402,100	17,300	10,700	13,400	1.84	2.05	797,600
July	225,770	10,600	5,150	7,283	1.00	1.15	447,800
August	128,920	5,060	3,660	4,159	.571	.66	255,700
September	132,050	5,430	3,460	4,402	.605	.67	261,900
Water year 1945-46	9,554,880	221,000	3,460	26,180	3.60	48.81	18,950,000

a No gage-height record; discharge computed on basis of records for Willamette River at Albany and Santiam River at Jefferson.

Salt Creek near Oakridge, Oreg.

Location.- Water-stage recorder, lat. 43°44', long. 122°25', in SW¼ sec. 23, T. 21 S., R. 3 E., 0.7 mile upstream from mouth and 2 miles southeast of Oakridge. Datum of gage is 1,245.67 feet above mean sea level, datum of 1929.

Drainage area.- 113 square miles.

Records available.- July 1913 to September 1914, October 1933 to September 1946.

Average discharge.- 14 years, 271 second-feet.

Extremes.- Maximum discharge during year, 4,320 second-feet Dec. 28 (gage height, 7.70 feet), from rating curve extended above 1,700 second-feet; minimum, 96 second-feet Oct. 6-16 (gage height, 1.80 feet).
1913-14, 1933-46: Maximum discharge, that of Dec. 28, 1945; minimum, 55 second-feet Jan. 8, 1937 (computed on basis of records for Salmon Creek near Oakridge).

Remarks.- Records fair except those for period of no gage-height record and those above 1,500 second-feet, which are poor. No diversion above station; slight diurnal fluctuation at times.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
1.8	96	2.9	420	5.0	1,900	2.0	130	3.3	620	5.0	1,680
1.9	120	3.3	620	5.5	2,320	2.3	208	3.7	840	5.5	2,030
2.1	170	3.7	885	6.0	2,760	2.6	300	4.1	1,080	6.0	2,400
2.3	220	4.1	1,180			2.9	420	4.5	1,340		
2.6	310	4.5	1,500								

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	158	438	818	328	515	314	420	545	328	a158	140
2	101	175	373	763	328	485	297	438	570	335	154	142
3	101	155	331	708	314	447	281	510	604	328	152	157
4	101	135	338	912	294	420	268	570	576	310	149	159
5	101	152	331	1,180	294	402	262	540	560	300	147	154
6	98	148	459	829	388	442	252	520	555	290	147	147
7	96	138	582	848	398	424	252	520	485	284	144	144
8	96	135	456	763	355	393	259	505	470	290	144	140
9	96	195	396	614	324	387	256	510	456	287	142	137
10	98	241	420	555	300	367	259	525	429	285	142	135
11	98	200	392	485	264	359	282	530	411	265	142	135
12	98	292	348	438	271	475	271	530	418	259	140	135
13	98	262	310	402	282	598	287	535	447	249	140	135
14	96	232	280	371	256	520	310	520	545	240	140	135
15	96	307	256	351	288	505	328	500	530	231	140	149
16	103	324	244	332	274	465	351	520	485	222	137	170
17	106	310	226	318	278	470	402	570	442	217	137	167
18	103	521	215	310	284	447	490	631	429	208	135	152
19	106	780	208	300	297	411	510	858	456	202	135	144
20	113	475	205	290	307	387	480	642	495	202	137	140
21	110	356	229	287	314	359	416	680	510	197	135	137
22	120	317	241	465	307	343	380	664	510	194	132	137
23	113	289	253	480	304	328	375	598	456	188	135	135
24	108	288	269	692	347	324	424	545	438	177	132	135
25	106	310	298	730	393	307	545	550	420	a175	135	135
26	103	342	342	576	359	310	620	604	375	a172	132	135
27	110	706	473	495	848	339	545	708	347	a170	132	135
28	120	885	2,830	447	620	343	505	692	339	a168	132	132
29	118	732	2,420	406	-	359	505	631	332	a185	154	132
30	152	540	1,480	383	-	347	452	550	321	a162	149	130
31	148	-	1,070	339	-	332	-	535	-	a160	144	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	3,312	152	98	107	0.947	1.09	6,570
November	10,080	885	135	336	2.97	3.32	19,990
December	16,733	2,830	205	540	4.78	5.51	33,190
Calendar year 1945	121,809	2,830	98	333	2.95	40.02	241,200
January	16,885	1,180	287	544	4.81	5.55	33,450
February	9,396	648	256	336	2.97	3.09	18,640
March	12,530	598	307	404	3.58	4.12	24,850
April	11,138	620	252	371	3.28	3.67	22,090
May	17,429	708	420	562	4.97	5.74	34,570
June	13,954	604	321	465	4.12	4.59	27,880
July	7,240	335	180	234	2.07	2.38	14,360
August	4,374	158	132	141	1.25	1.44	8,680
September	4,260	170	130	142	1.28	1.40	8,450
Water year 1945-46	127,311	2,830	96	349	3.09	41.90	252,500

Peak discharge.- Nov. 18 (9 p.m.) 1,230 sec.-ft.; Dec. 6 (8 p.m.) 752 sec.-ft.; Dec. 28 (6 to 9 p.m.) 4,320 sec.-ft.; Jan. 5 (6:30 a.m.) 1,330 sec.-ft.; Jan. 24 (9 p.m.) 829 sec.-ft.; Feb. 27 (12 m.) 774 sec.-ft.

a No gage-height record; discharge interpolatad.

Salmon Creek near Oakridge, Oreg.

Location.- Water-stage recorder, lat. 43°45', long. 122°23', in SW¼ sec. 7, T. 21 S., R. 4 E., a quarter of a mile upstream from Slide Creek and 4 miles east of Oakridge.

Drainage area.- 117 square miles at cable a quarter of a mile above gage, where all discharge measurements are made.

Records available.- October 1933 to September 1946. February 1913 to September 1914 at site 2 miles downstream, below Flat Creek; October 1914 to October 1919 at site 1 mile downstream.

Average discharge.- 13 years (1933-46), 358 second-feet.

Extremes.- Maximum discharge during year, 8,720 second-feet Dec. 28 (gage height, 8.40 feet), from rating curve extended above 2,500 second-feet by logarithmic plotting; minimum, 108 second-feet Oct. 14-16, 19, 26, 27 (gage height, 1.24 feet).
1913-19, 1933-46: Maximum discharge, that of Dec. 28, 1945; minimum, 63 second-feet Jan. 8, 1937 (gage height, 0.87 foot).

Remarks.- Records good except those for periods of no gage-height record, which are poor. No regulation above station. Since 1936 village of Oakridge has diverted water around station in an 8-inch pipe. Tunnel and control gates that were built to divert part of outflow from Waldo Lake into Salmon Creek Basin were not used during year.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	154	570	1,160	430	900	500	565	570	340	185	160
2	116	197	474	1,140	430	800	460	595	585	350	185	161
3	116	165	424	1,100	420	740	428	716	590	340	181	163
4	116	145	432	1,500	380	720	407	802	555	330	181	161
5	116	165	428	1,800	380	700	390	732	536	320	181	160
6	114	161	602	1,400	520	750	370	678	520	310	179	158
7	114	154	818	1,400	540	700	370	661	500	300	177	158
8	112	150	622	1,300	480	660	380	620	490	310	177	156
9	112	247	514	1,100	440	640	370	605	470	300	173	154
10	112	313	505	1,000	410	640	380	620	460	290	173	152
11	112	253	482	850	390	625	390	620	440	290	171	152
12	110	448	432	700	370	922	410	615	450	280	171	152
13	110	388	384	600	350	1,110	430	620	500	270	171	151
14	110	338	346	550	340	904	460	590	550	265	169	152
15	108	444	320	500	350	814	490	555	540	260	169	165
16	112	420	299	478	370	732	520	580	500	250	169	185
17	114	400	282	460	400	732	600	650	460	240	167	171
18	112	546	269	451	420	705	700	722	450	230	165	158
19	116	812	260	442	450	640	700	716	470	220	165	156
20	126	550	260	424	460	585	620	710	500	220	167	152
21	128	408	306	424	490	536	560	656	520	220	163	152
22	141	369	346	1,040	480	540	510	625	510	210	163	152
23	126	369	369	1,000	470	520	500	590	470	210	161	149
24	120	361	420	1,200	580	480	650	546	450	200	161	149
25	116	404	436	1,300	650	440	850	560	440	200	161	147
26	110	452	510	1,000	600	450	920	640	420	200	161	145
27	118	806	847	800	1,300	550	800	672	390	195	160	145
28	128	1,180	5,620	700	1,200	580	690	688	370	195	160	145
29	126	995	4,450	600	-	590	694	640	350	195	179	144
30	161	734	2,240	500	-	580	615	580	340	190	167	144
31	154	-	1,510	450	-	540	-	565	-	190	161	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	3,704	161	108	119	1.02	1.18	7,350
November	12,528	1,180	145	418	3.57	3.98	24,850
December	25,777	5,620	260	832	7.11	8.19	51,130
Calendar year 1945	158,067	5,620	108	433	3.70	50.23	313,500
January	27,369	1,800	424	883	7.55	8.70	54,290
February	14,100	1,300	340	504	4.31	4.48	27,970
March	20,825	1,110	440	672	5.74	6.62	41,310
April	16,164	920	370	539	4.61	5.14	32,060
May	19,734	802	546	637	5.44	6.27	39,140
June	14,396	590	340	480	4.10	4.58	28,550
July	7,920	350	190	255	2.18	2.52	15,710
August	5,273	185	160	170	1.45	1.68	10,460
September	4,649	185	144	155	1.32	1.48	9,220
Water year 1945-46	172,439	5,620	108	472	4.03	54.82	342,000

Note.- No gage-height record Jan. 3-14, Jan. 23 to Mar. 8, Mar. 22 to Apr. 2, Apr. 5-28, June 6 to July 31; discharge computed on basis of records for Middle Fork Willamette River above Salt Creek, near Oakridge, and Salt Creek near Oakridge.

Waldo Lake Outlet near Oakridge, Oreg.

Location.- Water-stage recorder and artificial control on lake outlet, lat. 43°46', long. 122°03', in NW¼ sec. 7, T. 21 S., R. 6 E., on artificial outlet channel of Waldo Lake, 20 miles east of Oakridge. Altitude of water surface of lake and of gage, 5,410 feet (from topographic map).

Drainage area.- 30 square miles.

Records available.- October 1936 to September 1946.

Average discharge.- 10 years, 25.3 second-feet.

Extremes.- Maximum discharge during year, 78 second-feet Feb. 7 (gage height, 2.08 feet); practically no flow Oct. 1 to Nov. 12 (lake level below weir crest).
1936-46: Maximum discharge, 144 second-feet Jan. 2, 1943 (gage height, 2.98 feet), from rating curve extended above 80 second-feet; no flow at times.

Remarks.- Records good except those for periods of no gage-height record, which are fair. At times seiches on Waldo Lake cause rapid changes in stage at gage several times per hour. Lake not artifically regulated. Diversion tunnel into head of Black Creek, near south end of lake, built about 1914, is not used, but there is leakage past control gates.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 9						Jan. 10 to Sept. 30					
0.0	0	0.4	8.5	1.2	39.2	0.0	0	0.4	8.7	1.2	37.2
.1	1.1	.6	14.9	1.5	53.5	.1	1.2	.6	14.8	1.5	50.4
.2	3.2	.8	22.2	1.8	68.3	.2	3.4	.8	21.6	1.8	64.2
.3	5.7	1.0	30.4			.3	5.9	1.0	29.1	2.1	78.6

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	15	55	70	62	60	46	49	51	26	10
2		0	15	56	69	63	59	45	49	50	25	10
3		0	15	57	70	64	57	45	49	50	25	11
4		0	15	61	70	63	56	45	49	49	24	11
5		0	15	70	68	62	55	44	50	49	23	10
6		0	16	72	72	61	54	44	51	48	22	9.9
7		0	22	72	77	60	53	44	50	47	21	9.3
8		0	24	75	74	59	53	44	50	47	20	8.7
9		0	23	74	71	59	55	43	49	47	19	8.1
10		0	24	69	68	59	55	43	49	46	18	7.6
11		0	23	68	66	59	54	42	48	45	17	7.0
12		0	22	67	64	63	53	42	48	45	16	6.5
13		.1	21	65	62	68	52	42	49	44	15	5.9
14		.7	21	64	60	70	51	41	51	43	14	5.6
15		1.0	20	62	59	72	50	41	51	42	14	6.5
16		1.9	20	60	58	71	49	41	51	41	14	7.0
17		2.4	20	60	57	70	48	41	51	39	12	7.0
18		3.4	20	59	56	69	48	41	51	38	13	6.7
19		9.1	19	57	56	68	47	41	51	37	12	5.6
20		10	18	56	55	68	47	41	51	36	12	5.2
21		9.7	19	56	55	67	47	43	51	36	11	4.6
22		9.4	19	61	54	67	47	44	52	35	11	4.2
23		8.8	18	64	53	66	46	44	53	34	10	3.6
24		8.5	19	66	53	66	45	44	53	33	9.9	3.4
25		9.4	20	72	53	66	45	44	54	32	9.3	3.2
26		11	21	71	57	64	46	45	54	31	8.7	2.7
27		13	23	70	61	63	45	46	53	31	8.1	2.5
28		15	35	69	61	63	45	48	53	30	8.4	2.1
29		16	50	70	-	63	46	49	52	29	12	1.6
30		15	54	71	-	62	47	49	51	28	11	1.2
31		-	54	70	-	61	-	49	-	27	11	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0	0
November	144.4	16	0	4.81	286
December	720	54	15	23.2	1,430
Calendar year 1945	7,737.1	66	0	21.2	15,350
January	2,019	75	55	65.1	4,000
February	1,749	77	53	62.5	3,470
March	1,998	72	59	64.5	3,960
April	1,515	60	45	50.5	3,000
May	1,361	49	41	43.9	2,700
June	1,523	54	48	50.8	3,020
July	1,240	51	27	40.0	2,460
August	472.4	26	8.1	15.2	937
September	187.7	11	1.2	6.26	372
Water year 1945-46	12,929.5	77	0		25,640

Note.- No gage-height record Feb. 5 to Mar. 24; discharge computed on basis of recorded range in stage and records for Odell Creek near Crescent.

North Fork of Middle Fork Willamette River near Oakridge, Oreg.

Location.- Water-stage recorder, lat. 43°45', long. 122°30', in SW¼ sec. 7, T. 21 S., R. 3 E., 1 mile upstream from mouth and 2½ miles northeast of Oakridge. Datum of gage is 1,029.6 feet above mean sea level (from river-profile survey).
Drainage area.- 246 square miles.
Records available.- October 1909 to September 1921 (fragmentary), September 1935 to September 1946. October 1913 to February 1916 at site half a mile upstream, above a small tributary.
Average discharge.- 11 years (1935-46), ~~693~~ second-feet.
Extremes.- Maximum discharge during year, 17,000 second-feet Dec. 28 (gage height, 16.6 feet), from rating curve extended above 8,000 second-feet by logarithmic plotting; minimum, 85 second-feet (regulated) Nov. 4 (gage height, 0.57 foot); minimum daily, 109 second-feet Oct. 9, 10, 15.
1909-16, 1935-46: Maximum discharge, that of Dec. 28, 1945. Flood of Nov. 22, 1909, reached a stage of 12.4 feet, site and datum then in use (discharge not determined). Minimum discharge, 26 second-feet (regulated) Oct. 14, 1939.
Remarks.- Records good Oct. 1 to Dec. 28, fair thereafter. Tunnel and control gates that were built to divert part of outflow from Waldo Lake into Salmon Creek Basin were not used during year. Occasional diurnal fluctuation during low-water periods caused by log pond upstream.
Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 28 to Sept. 30					
0.7	109	2.5	800	7.2	5,040	2.7	135	4.5	825	9.5	5,490
.9	153	3.0	1,110	9.0	7,380	2.9	180	5.1	1,230	11.0	7,580
1.2	235	3.6	1,540	11.0	10,360	3.2	230	5.8	1,760	13.0	10,680
1.6	370	4.5	2,250	13.0	13,730	3.6	390	6.8	2,590		
2.0	540	5.7	3,380			4.0	560	8.0	3,730		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	197	1,440	3,000	1,010	1,980	1,010	1,100	957	434	205	155
2	117	295	1,140	2,740	978	1,740	924	1,110	999	414	205	155
3	115	244	1,000	2,660	898	1,630	843	1,300	992	398	192	185
4	115	183	1,030	3,080	831	1,460	783	1,470	924	380	198	160
5	115	211	1,060	3,980	789	1,360	760	1,380	867	355	190	158
6	115	223	1,720	2,820	904	1,500	721	1,240	867	348	188	155
7	113	194	2,260	2,690	950	1,450	700	1,200	771	338	185	153
8	111	178	1,620	2,470	855	1,350	710	1,150	710	338	182	151
9	109	341	1,310	2,010	801	1,280	716	1,090	710	380	180	149
10	109	575	1,220	1,740	765	1,290	726	1,110	675	341	175	147
11	111	438	1,130	1,490	705	1,260	760	1,120	630	320	172	145
12	111	957	980	1,330	685	2,080	819	1,120	610	308	168	145
13	111	794	866	1,200	630	2,780	904	1,120	655	302	168	143
14	111	605	784	1,100	630	2,060	957	1,050	813	296	188	143
15	109	630	728	1,010	645	1,820	1,030	971	861	284	165	151
16	113	794	685	957	660	1,600	1,130	999	765	278	168	210
17	117	800	650	898	670	1,590	1,290	1,140	690	266	162	208
18	115	1,020	620	873	700	1,510	1,660	1,280	645	260	160	178
19	115	1,720	580	861	716	1,380	1,680	1,280	640	248	158	162
20	130	1,120	570	825	738	1,260	1,480	1,280	665	233	155	155
21	130	784	712	795	777	1,170	1,310	1,170	660	225	155	151
22	160	690	784	2,660	795	1,150	1,150	1,060	635	215	153	149
23	139	670	842	2,520	783	1,100	1,070	999	610	212	153	149
24	126	665	1,060	3,330	911	1,060	1,220	892	575	208	151	145
25	120	784	1,060	3,120	1,150	1,010	1,660	911	600	202	155	147
26	117	962	1,280	2,320	1,050	1,010	1,780	1,080	546	198	149	143
27	122	3,430	2,110	1,870	2,420	1,140	1,490	1,190	497	202	145	143
28	139	3,870	12,900	1,600	2,470	1,190	1,300	1,240	484	a202	145	143
29	157	2,830	10,400	1,400	-	1,280	1,310	1,210	479	a202	155	141
30	186	1,920	6,290	1,220	-	1,210	1,230	1,040	450	a198	178	139
31	197	-	4,080	1,070	-	1,110	-	971	-	a198	165	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	3,855	197	109	124	0.504	0.58	7,650
November	28,324	3,870	178	944	3.84	4.28	56,180
December	62,891	12,900	570	2,029	8.25	9.51	124,700
Calendar year 1945	323,515	12,900	109	886	3.60	48.91	641,700
January	59,619	3,980	795	1,923	7.82	9.01	118,300
February	25,896	2,470	630	925	3.76	3.91	51,360
March	44,790	2,780	1,010	1,445	5.87	6.77	88,840
April	33,123	1,780	700	1,104	4.49	5.01	65,700
May	35,273	1,470	892	1,138	4.63	5.33	69,960
June	20,982	999	450	699	2.84	3.17	41,620
July	8,783	434	198	283	1.15	1.33	17,420
August	5,248	205	145	169	.687	.79	10,410
September	4,638	210	139	155	.630	.70	9,200
Water year 1945-46	333,422	12,900	109	911	3.70	50.39	681,300

Peak discharge.- Nov. 27 (5 p.m.) 4,470 sec.-ft.; Dec. 28 (6 to 9 p.m.) 17,000 sec.-ft.; Jan. 22 (1 p.m.) 3,470 sec.-ft.; Jan. 24 (3 p.m.) 3,980 sec.-ft.
a No gage-height record; discharge computed on basis of recorded range in stage and records for Middle Fork Willamette River above Salt Creek, near Oakridge, and at Eula.

Fall Creek below Winberry Creek, near Fall Creek, Oreg.

Location.- Staff gage, lat. 43°57', long. 122°47', near center of sec. 2, T. 19 S., R. 1 W., 1½ miles downstream from Winberry Creek and 2½ miles southeast of Fall Creek. Datum of gage is 637.80 feet above mean sea level, datum of 1929.

Drainage area.- 190 square miles.

Records available.- October to December 1911 (gage heights only), September 1935 to September 1946.

Average discharge.- 11 years, 503 second-feet.

Extremes.- Maximum discharge during year, 21,500 second-feet Dec. 28 (gage height, 18.0 feet, from floodmark), from rating curve extended above 4,000 second-feet by logarithmic plotting; minimum observed, 27 second-feet Oct. 9-15.
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 19 second-feet Dec. 1, 1936.

Remarks.- Records good. Gage read once daily, oftener during periods of high water. No diversion above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	123	1,070	1,600	732	1,600	678	307	163	106	52	42
2	32	150	740	1,780	895	1,410	607	292	149	98	50	42
3	30	196	612	1,870	800	1,540	515	281	142	95	49	40
4	28	94	592	2,910	692	1,430	464	275	138	85	48	39
5	31	104	608	5,990	620	1,200	411	250	134	85	48	38
6	30	211	1,070	2,900	1,010	1,650	383	239	134	85	48	37
7	28	169	1,690	2,830	1,440	1,380	376	229	133	85	48	37
8	28	143	1,510	2,240	1,070	1,090	390	213	127	103	48	35
9	27	211	1,100	1,760	950	940	418	206	123	98	48	35
10	27	1,440	1,250	1,450	880	895	519	199	115	92	47	34
11	27	815	1,100	1,220	785	780	571	199	107	80	47	32
12	27	2,910	900	965	624	1,940	591	203	106	78	47	32
13	27	1,470	721	840	607	2,950	535	185	106	75	47	31
14	27	960	572	770	651	2,000	492	178	206	73	45	31
15	27	1,220	454	705	820	1,810	460	167	366	71	45	35
16	28	1,120	436	633	910	1,760	436	161	242	68	43	187
17	32	1,330	418	575	885	1,730	446	159	201	68	43	68
18	33	2,060	380	543	940	1,760	575	157	165	66	42	56
19	29	4,010	356	495	940	1,480	439	171	142	62	42	44
20	38	1,950	347	470	925	1,160	408	161	127	62	40	37
21	38	1,160	471	446	880	945	369	159	121	60	40	37
22	107	900	485	3,150	840	880	322	159	118	58	38	35
23	75	730	460	1,300	790	790	298	159	127	56	38	34
24	50	596	850	2,870	955	780	313	143	171	56	38	33
25	39	740	730	2,450	1,150	750	362	157	270	54	40	33
26	35	815	1,070	1,400	915	750	386	313	178	53	40	33
27	33	3,030	1,200	1,0e0	2,620	780	313	334	129	52	38	32
28	54	3,080	12,200	980	2,080	770	278	369	149	50	38	32
29	52	2,410	7,420	e80	-	965	484	358	124	50	42	32
30	75	1,460	3,310	700	-	875	343	270	112	52	58	32
31	113	-	2,240	660	-	750	-	226	-	52	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,260	113	27	40.6	0.214	0.25	2,500
November	35,607	4,010	94	1,187	6.25	6.97	70,630
December	46,362	12,200	347	1,496	7.87	9.07	91,960
Calendar year 1945	252,350	12,200	27	691	3.64	49.39	500,600
January	48,462	5,990	446	1,563	8.23	9.49	96,120
February	27,406	2,620	607	979	5.15	5.36	54,360
March	39,540	2,950	750	1,275	6.71	7.74	78,430
April	13,182	678	278	439	2.31	2.58	26,150
May	6,879	369	143	222	1.17	1.35	13,640
June	4,625	366	106	154	.811	.91	9,170
July	2,228	106	50	71.9	.378	.44	4,420
August	1,385	58	38	44.7	.235	.27	2,750
September	1,265	187	31	42.2	.222	.25	2,510
Water year 1945-46	228,201	12,200	27	625	3.29	44.68	452,600

Little Fall Creek near Fall Creek, Oreg.

Location.- Staff gage, lat. 43°59', long. 122°45', in sec. 25, T. 18 S., R. 1 W., 4 miles northeast of Fall Creek.

Drainage area.- 48 square miles.

Records available.- September 1935 to September 1946.

Average discharge.- 11 years, 171 second-feet.

Extremes.- Maximum discharge during year, 6,110 second-feet Dec. 28 (gage height, 8.20 feet, observed at peak), from rating curve extended above 1,800 second-feet by velocity-area studies; minimum observed, 14 second-feet Oct. 15, 19, Sept. 13, 26-29.
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 10 second-feet Dec. 1, 1936, Aug. 26, 27, Aug. 30 to Sept. 1, 1940.

Remarks.- Records fair. Gage read twice daily Oct. 1 to Mar. 31, once daily thereafter. No regulation or diversion above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
1.3	18	2.3	115	4.1	745	1.3	17	2.3	120	4.1	810
1.5	28	2.6	175	4.6	1,060	1.5	26	2.6	195	4.6	1,130
1.7	41	2.9	255	5.1	1,500	1.7	38	2.9	280	5.1	1,550
1.9	60	3.3	390	5.7	2,150	1.9	55	3.3	415		
2.1	84	3.7	555	6.3	2,920	2.1	80	3.7	590		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	37	430	635	307	585	220	93	50	34	22	17
2	17	71	299	630	331	540	205	85	48	32	21	18
3	17	56	267	590	298	610	190	82	44	32	21	17
4	16	37	237	750	268	531	180	79	44	31	21	16
5	16	54	225	1,680	256	487	165	76	46	30	20	16
6	16	62	498	990	398	565	155	73	48	30	20	16
7	16	62	660	870	439	504	148	73	44	30	20	16
8	16	52	510	762	376	431	168	70	42	73	20	16
9	15	188	410	610	345	387	180	69	41	42	19	15
10	15	310	426	526	324	366	210	64	40	35	19	15
11	15	276	398	443	292	531	232	63	38	32	19	15
12	15	836	334	384	265	954	220	62	38	31	19	15
13	16	442	282	345	244	1,090	205	60	40	30	18	14
14	15	296	246	307	241	768	190	59	73	30	18	15
15	14	334	215	280	262	670	175	57	63	28	18	24
16	15	434	200	256	262	570	165	56	53	28	18	37
17	16	486	185	232	274	595	155	55	48	27	17	21
18	16	745	175	218	283	560	152	53	44	27	17	18
19	16	1,260	161	200	286	487	145	51	42	26	17	16
20	20	680	159	198	298	423	140	51	40	25	16	16
21	22	462	190	195	310	373	135	53	38	25	16	16
22	35	338	180	876	298	342	118	56	39	24	16	16
23	26	276	185	595	295	310	111	50	41	24	16	16
24	20	240	330	774	362	304	107	52	44	24	16	15
25	18	252	299	768	431	280	102	57	42	22	17	15
26	17	279	366	570	370	268	111	72	40	24	16	14
27	a16	650	438	455	756	262	98	70	37	23	16	14
28	25	866	3,810	398	720	266	91	77	48	22	16	14
29	26	720	2,180	352	-	289	116	63	41	22	24	14
30	50	524	1,180	304	-	268	107	55	45	24	20	15
31	41	-	858	283	-	241	-	51	-	23	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	615	50	14	19.8	0.412	0.48	1,220
November	11,325	1,260	37	378	7.87	8.77	22,460
December	16,333	3,810	159	527	11.0	12.65	32,400
Calendar year 1945	85,230	3,810	14	234	4.68	66.04	169,000
January	16,476	1,680	195	531	11.1	12.77	32,680
February	9,591	756	241	343	7.15	7.43	19,020
March	14,659	1,090	241	473	9.85	11.36	29,080
April	4,696	232	91	157	3.27	3.64	9,310
May	1,987	93	50	64.1	1.34	1.54	3,940
June	1,341	73	37	44.7	.931	1.04	2,660
July	910	73	22	29.4	.612	.71	1,800
August	570	24	16	18.4	.383	.44	1,130
September	502	37	14	16.7	.348	.39	996
Water year 1945-46	79,005	3,810	14	216	4.50	61.22	156,700

a No gage-height record; discharge computed on basis of records for Fall Creek near Fall Creek and Middle Fork Willamette River at Eula.

Coast Fork Willamette River at London, Oreg.

Location.- Water-stage recorder, lat. 43°39', long. 123°05', in SW¼ sec. 20, T. 22 S., R. 3 W., 0.6 mile north of London, and 11 miles south of Cottage Grove. Datum of gage is 852.65 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).

Drainage area.- 69 square miles.

Records available.- September 1935 to September 1946.

Average discharge.- 11 years, 183 second-feet.

Extremes.- Maximum discharge during year, 8,800 second-feet Dec. 28 (gage height, 13.25 feet), from rating curve extended above 3,400 second-feet; minimum, 13 second-feet Sept. 13, 14 (gage height, 1.08 feet).
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum, 10 second-feet on several days in 1936, 1938, 1939, and 1940.

Remarks.- Records good except those for Nov. 9-16, which are fair. No diversion above station; millpond 3 miles above station may cause slight regulation at times.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 9-16)

Oct. 1 to Dec. 28

1.2	18	2.8	305	5.0	1,440
1.4	32	2.9	420	6.0	2,040
1.6	55	3.3	585	7.0	2,740
1.8	87	3.7	765	8.0	3,520
2.0	127	4.1	965		
2.3	205	4.5	1,165		

Dec. 29 to Sept. 30

1.2	18	2.0	119	3.3	580
1.4	30	2.3	195	3.7	770
1.6	51	2.6	290	4.1	970
1.8	81	2.9	405	4.5	1,170

Note.- Same as preceding table above 5.0 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	32	396	630	252	526	210	85	76	34	22	17
2	16	30	288	790	290	526	189	79	68	34	20	16
3	16	29	256	775	269	656	173	78	62	32	22	16
4	16	26	288	1,310	237	562	160	76	58	31	22	16
5	16	52	416	2,110	234	472	150	73	58	31	20	16
6	16	68	1,360	1,110	680	472	140	70	59	30	20	16
7	16	61	1,270	1,260	652	413	137	68	52	29	20	15
8	16	54	738	1,080	504	349	157	67	49	35	19	15
9	16	172	528	740	413	304	178	65	47	39	18	14
10	16	392	468	589	381	297	219	62	45	32	18	14
11	16	288	408	481	325	266	207	59	43	29	18	14
12	16	460	333	405	286	1,070	195	58	41	29	18	14
13	16	274	274	349	252	1,220	178	57	43	29	18	14
14	16	132	229	308	249	750	162	55	61	28	17	14
15	16	263	205	269	280	740	150	54	76	28	17	21
16	16	534	185	240	286	638	140	52	62	27	17	49
17	18	639	164	219	280	740	135	51	54	26	16	30
18	16	1,660	151	201	276	700	135	49	47	26	16	20
19	17	1,790	141	184	286	548	124	47	44	25	16	18
20	20	720	134	173	294	437	117	47	41	24	16	17
21	23	436	141	170	294	361	109	52	38	23	15	16
22	35	305	134	649	269	325	101	54	38	22	15	16
23	24	238	183	553	243	290	97	57	39	22	15	16
24	19	199	364	992	325	290	95	50	43	22	15	16
25	18	320	372	920	421	266	97	61	47	21	16	15
26	17	532	598	594	361	252	103	137	41	22	15	15
27	23	1,240	700	445	750	249	92	170	38	24	15	14
28	36	1,340	5,630	377	680	249	85	157	40	22	15	14
29	31	935	2,650	333	-	294	105	135	39	22	17	15
30	68	554	1,180	283	-	272	94	107	36	23	19	15
31	43	-	810	255	-	240	-	88	-	23	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	665	68	16	21.5	0.312	0.36	1,320
November	13,775	1,790	26	459	6.65	7.42	27,320
December	21,004	5,630	134	678	9.83	11.32	41,660
Calendar year 1945	90,148	5,630	14	247	3.58	48.60	178,800
January	18,784	2,110	170	606	8.78	10.12	37,260
February	10,069	750	234	360	5.22	5.43	19,970
March	14,774	1,220	240	477	6.91	7.96	29,300
April	4,234	219	85	141	2.04	2.28	8,400
May	2,320	170	47	74.8	1.08	1.25	4,600
June	1,485	76	36	49.5	.717	.80	2,950
July	844	39	21	27.2	.394	.45	1,670
August	545	22	15	17.6	.255	.29	1,080
September	518	49	14	17.3	.251	.28	1,030
Water year 1945-46	89,017	5,630	14	244	3.54	47.96	176,600

Peak discharge.- Nov. 18 (8 p.m.) 3,820 sec.-ft.; Dec. 6 (7 p.m.) 3,130 sec.-ft.; Dec. 28 (6 p.m.) 8,800 sec.-ft.; Jan. 5 (5 a.m.) 2,760 sec.-ft.

Cottage Grove Reservoir near Cottage Grove, Oreg.

Location.- Water-stage recorder, lat. 43°43', long. 123°03', in NE¼ sec. 28, T. 21 S., R. 3 W., in east abutment of dam on Coast Fork Willamette River, 5½ miles south of Cottage Grove. Gage readings are elevations above mean sea level (surveys by Corps of Engineers, War Department).
Drainage area.- 104 square miles.
Records available.- October 1942 to September 1946.
Extremes.- Maximum contents during year, 33,330 acre-feet May 29, 30 (elevation, 791.21 feet); minimum, 2,761 acre-feet Jan. 30 (elevation, 749.02 feet).
1942-46: Maximum contents observed, 34,200 acre-feet June 2, 1943 (elevation, 791.95 feet); minimum observed since first filling, 646 acre-feet Jan. 26, 1944 (elevation, 738.74 feet).
Remarks.- Reservoir is formed by earth-fill dam with concrete spillway completed by Corps of Engineers, War Department, in 1942; storage began Oct. 31, 1942 (slight pondage at times in water year 1941-42, when inflow temporarily exceeded 2,600 second-feet, capacity of outlets). Capacity, 33,090 acre-feet between elevation 719.0 feet (outlet conduit) and 791.0 feet (crest of spillway). Dead storage negligible. Reservoir used for flood control and improvement of navigation below Albany. Daily contents computed from reservoir elevation at 12 p.m.
Cooperation.- Gage readings furnished and recorder inspected by Corps of Engineers, War Department.

Contents, in acre-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,596	3,737	3,241	6,202	3,142	12,450	23,010	30,740	33,240	33,040	32,270	30,910
2	9,391	3,573	3,317	4,393	3,438	12,960	23,440	30,870	33,220	33,030	32,240	30,900
3	9,176	3,458	3,133	3,232	3,737	13,250	23,830	30,990	33,190	33,010	32,200	30,890
4	8,964	3,348	3,056	3,642	4,002	13,590	24,180	31,130	33,170	32,980	32,160	30,860
5	8,753	3,277	3,308	5,878	4,251	14,010	24,430	31,240	33,170	32,970	32,130	30,830
6	8,544	3,253	4,352	5,179	4,682	14,390	24,700	31,340	33,170	32,970	32,040	30,790
7	8,333	3,208	4,686	5,085	4,751	14,610	25,010	31,420	33,170	32,960	31,990	30,720
8	8,124	3,142	3,474	4,431	5,076	14,900	25,310	31,510	33,150	33,000	31,960	30,670
9	7,924	3,336	3,045	3,515	5,430	15,340	25,620	31,600	33,120	33,020	31,940	30,640
10	7,714	3,314	2,850	3,080	5,972	15,740	26,020	31,680	33,100	33,000	31,850	30,610
11	7,513	3,103	2,969	2,975	6,319	15,970	26,380	31,760	33,100	32,980	31,800	30,590
12	7,320	3,211	3,106	2,917	6,639	16,800	26,730	31,830	33,090	32,970	31,780	30,540
13	7,108	3,124	3,106	3,001	7,045	16,650	27,040	31,910	33,100	32,950	31,730	30,510
14	6,904	3,115	2,996	2,966	7,502	16,790	27,340	31,940	33,160	32,900	31,620	30,490
15	6,710	3,305	2,842	2,940	7,990	17,340	27,650	31,940	33,190	32,890	31,630	30,540
16	6,518	3,499	2,780	3,010	8,345	17,690	27,890	32,010	33,200	32,860	31,610	30,120
17	6,324	3,541	2,797	3,080	8,481	18,050	28,160	32,050	33,180	32,830	31,530	29,210
18	6,129	5,816	2,831	3,097	8,602	18,340	28,390	32,080	33,150	32,810	31,500	28,270
19	5,948	7,470	2,839	3,085	9,022	18,650	28,630	32,120	33,120	32,790	31,450	27,320
20	5,760	6,319	2,836	3,039	9,439	19,110	28,850	32,170	33,100	32,760	31,400	26,360
21	5,589	4,622	2,842	3,007	9,895	19,440	29,010	32,200	33,060	32,700	31,320	25,470
22	5,452	3,717	2,836	3,376	10,280	19,620	29,200	32,270	33,060	32,660	31,330	24,550
23	5,288	3,401	2,889	3,121	10,610	19,980	29,360	32,330	33,060	32,620	31,280	23,640
24	5,106	3,229	3,247	3,512	10,840	20,420	29,530	32,390	33,080	32,570	31,220	22,720
25	4,928	3,413	3,163	3,622	10,990	20,740	29,720	32,550	33,090	32,520	31,180	21,810
26	4,747	3,534	2,955	3,454	11,590	21,100	29,910	32,860	33,080	32,500	31,110	20,890
27	4,590	4,019	3,145	3,097	11,880	21,250	30,070	33,160	33,060	32,450	31,080	19,970
28	4,462	4,262	13,760	2,923	11,910	21,610	30,210	33,310	33,060	32,410	31,050	19,070
29	4,321	3,525	16,300	2,822	-	22,030	30,440	33,330	33,060	32,370	31,040	18,190
30	4,196	3,145	14,140	2,800	-	22,380	30,590	33,320	33,050	32,350	31,020	17,330
31	3,974	-	10,010	2,938	-	22,640	-	33,270	-	32,320	30,960	-

Monthly elevation and contents, water year October 1945 to September 1946

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	764.74	9,797	-
Oct. 31	752.93	3,974	-5,823
Nov. 30	750.36	3,145	-829
Dec. 31	765.09	10,010	+6,865
Calendar year 1945	-	-	+6,874
Jan. 31	749.65	2,938	-7,072
Feb. 28	768.04	11,910	+8,972
Mar. 31	781.15	22,640	+10,730
Apr. 30	788.80	30,590	+7,950
May 31	791.16	33,270	+2,680
June 30	790.97	33,050	-220
July 31	790.33	32,320	-730
Aug. 31	789.13	30,960	-1,360
Sept.30	775.22	17,330	-13,630
Water year 1945-46	-	-	+7,533

† Elevation at 12 p.m.

Coast Fork Willamette River below Cottage Grove Dam, Oreg.

Location.- Water-stage recorder, lat. 43°43', long. 123°03', in NE¼ sec. 28, T. 21 S., R. 3 W., at bridge a quarter of a mile downstream from Cottage Grove Dam and 5½ miles south of Cottage Grove. Datum of gage is 711.00 feet above mean sea level (Corps of Engineers, War Department, bench mark).

Drainage area.- 104 square miles.

Records available.- October 1944 to September 1946. January 1939 to September 1944 at site 0.8 mile downstream, published as Coast Fork Willamette River near Cottage Grove.

Extremes (regulated).- Maximum discharge during year, 3,230 second-feet Dec. 30 (gage height, 9.16 feet); minimum, 28 second-feet Sept. 8-15 (gage height, 2.61 feet).
1939-46: Maximum discharge recorded, 3,340 second-feet (regulated) Jan. 4, 1943 (gage height, 10.06 feet, site and datum then in use); practically no flow July 5-7, 1945.

Remarks.- Records excellent. No diversion above station. Flow regulated by Cottage Grove Reservoir.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

2.6	27	3.7	206	6.2	1,320
2.8	42	4.0	290	7.0	1,790
3.0	63	4.5	470	8.0	2,410
3.2	96	5.0	690	9.0	3,100
3.4	137	5.6	990		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	164	485	2,580	249	427	96	36	108	38	33	28
2	118	116	366	1,960	249	503	46	36	96	36	39	28
3	116	91	438	1,670	222	779	46	36	78	35	30	28
4	116	91	406	1,590	204	591	46	36	69	34	30	28
5	114	89	382	1,810	204	440	77	36	68	33	30	28
6	114	89	1,010	1,860	752	406	61	36	68	33	30	28
7	112	89	1,680	1,890	960	410	48	36	64	33	30	44
8	112	89	1,690	1,870	583	308	72	36	63	36	30	28
9	112	89	960	1,530	418	184	89	36	57	36	30	28
10	112	454	745	1,050	281	194	89	36	51	38	46	28
11	112	480	454	715	287	246	89	36	49	35	29	28
12	112	474	358	578	249	1,180	91	36	47	33	29	28
13	112	460	358	402	159	1,860	76	36	46	33	29	28
14	110	235	355	422	124	1,020	56	36	57	46	29	28
15	110	232	355	366	126	825	49	36	72	33	29	28
16	110	522	275	284	194	740	49	36	75	33	30	260
17	110	765	211	243	285	900	49	36	70	33	47	510
18	110	800	182	243	287	845	49	36	63	33	30	510
19	108	1,290	180	243	154	596	49	36	58	33	30	506
20	108	1,520	180	243	166	361	49	36	52	33	30	494
21	108	1,430	182	243	139	338	49	36	47	53	30	494
22	108	895	182	628	141	362	40	38	45	33	30	494
23	106	503	199	840	141	223	35	36	44	33	30	486
24	106	355	465	1,120	317	182	35	36	45	33	48	482
25	104	311	426	1,220	458	192	36	37	44	33	30	478
26	102	529	650	900	175	157	36	37	44	33	29	470
27	102	1,310	890	800	857	246	36	42	43	46	29	466
28	102	1,710	1,480	604	898	196	36	110	56	33	29	462
29	102	1,690	2,280	537	-	196	36	146	40	33	29	458
30	139	1,020	2,620	410	-	196	36	139	39	33	29	454
31	164	-	3,040	287	-	196	-	122	-	33	46	-

Month	Observed				Change in contents in Cottage Grove Reservoir (acre-feet)	Adjusted for change in contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	164	102	113	6,920	-5,823	1,100	17.8	0.171	0.20
November	1,710	89	596	35,490	-829	34,660	582	5.60	6.25
December	3,040	180	757	46,540	+6,865	53,400	869	8.36	9.63
Calendar year 1945	3,040	0	314	227,220	+6,874	234,100	323	3.11	42.22
January	2,580	243	940	57,790	-7,072	50,720	825	7.93	9.14
February	960	124	331	18,400	+8,972	27,370	493	4.74	4.93
March	1,860	157	494	30,350	+10,730	41,080	668	6.42	7.41
April	96	35	55.0	3,270	+7,950	11,220	189	1.82	2.02
May	146	36	48.3	2,970	+2,680	5,650	91.9	.884	1.02
June	108	39	58.8	3,490	-220	3,270	55.0	.529	.59
July	53	33	35.2	2,160	-730	1,430	23.3	.224	.26
August	48	29	32.2	1,980	-1,360	620	10.1	.097	.11
September	510	28	249	14,800	-13,630	1,170	19.7	.189	.21
Water year 1945-46	3,040	28	310	224,200	+7,533	231,700	320	3.08	41.77

Coast Fork Willamette River at Saginaw, Oreg.

Location.- Water-stage recorder, lat. 43°50'05", long. 123°02'30", in NW¼ sec. 15, T. 20 S., R. 3 W., at Saginaw, 1 mile downstream from Row River. Datum of gage is 595.47 feet above mean sea level, datum of 1929.

Drainage area.- 529 square miles.

Records available.- October 1923 to September 1946.

Average discharge.- 20 years (1925-26, 1927-46), 1,141 second-feet.

Extremes.- Maximum discharge during year, 32,900 second-feet Dec. 28 (gage height, 12.38 feet), from rating curve extended above 16,000 second-feet; minimum, 50 second-feet Sept. 18-18.
1923-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 7 second-feet July 31, 1928.

Remarks.- Records fair, based largely upon summation of flows at upstream stations. Small diversions and regulation by log ponds above station; regulation by Cottage Grove Reservoir (see p. 116).

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	351	2,630	5,080	1,480	3,590	1,260	606	614	201	92	92
2	170	306	1,920	5,290	1,650	3,170	1,090	598	529	189	92	81
3	170	351	1,670	5,580	1,620	3,630	942	639	480	176	89	70
4	165	257	1,820	7,780	1,470	3,270	886	657	420	168	75	72
5	170	312	2,210	12,900	1,390	2,800	831	606	382	165	84	72
6	170	581	4,520	7,350	3,250	3,040	810	536	398	157	81	72
7	165	440	10,200	7,580	3,760	2,820	770	515	354	150	81	78
8	165	351	5,560	7,010	2,740	2,260	800	501	332	157	75	72
9	160	1,020	3,640	4,800	2,220	1,860	886	474	310	185	75	64
10	155	2,490	3,250	3,590	1,970	1,760	978	474	300	165	75	60
11	155	2,020	2,710	2,880	1,760	1,700	1,030	474	285	154	86	62
12	155	2,800	2,060	2,470	1,580	5,040	1,060	462	270	142	72	57
13	155	2,760	1,690	2,130	1,390	9,070	1,050	432	270	142	72	57
14	160	1,480	1,450	1,970	1,340	5,000	990	398	321	154	70	60
15	151	2,060	1,290	1,860	1,570	4,260	942	376	409	135	67	72
16	155	2,920	1,130	1,620	1,740	3,850	942	365	387	128	67	354
17	155	3,680	972	1,480	1,720	3,850	966	387	348	121	70	693
18	160	6,320	872	1,370	1,790	3,900	1,050	409	316	115	70	598
19	160	11,800	812	1,280	1,720	3,080	966	392	300	111	67	582
20	165	5,610	800	1,180	1,810	2,480	853	387	285	108	64	543
21	175	3,870	946	1,110	1,700	2,090	740	387	265	121	62	536
22	212	2,600	1,050	3,580	1,650	1,910	675	370	251	98	62	529
23	231	2,020	1,090	3,760	1,500	1,640	622	398	246	95	60	522
24	200	1,590	2,190	5,360	1,810	1,530	657	354	255	89	75	515
25	180	1,920	1,940	6,200	2,640	1,480	780	420	275	84	70	515
26	170	3,070	3,030	3,850	2,200	1,450	810	820	280	92	64	508
27	170	9,300	4,040	2,960	5,370	1,690	666	1,090	251	108	62	508
28	195	10,800	24,700	2,410	4,980	1,580	598	1,080	251	98	60	508
29	218	7,370	16,300	2,130	-	1,810	630	1,090	246	89	64	508
30	347	4,320	8,930	1,810	-	1,740	648	919	219	92	81	508
31	430	-	6,730	1,530	-	1,530	-	711	-	92	108	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	5,764	430	151	186	0.352	0.41	11,430
November	94,569	11,800	257	3,152	5.96	6.65	187,600
December	122,152	24,700	800	3,940	7.45	8.59	242,300
Calendar year 1945	613,923	24,700	64	1,682	3.18	43.17	1,218,000
January	119,680	12,900	1,110	3,861	7.30	8.41	237,400
February	59,820	5,370	1,340	2,136	4.04	4.21	118,700
March	88,880	9,070	1,450	2,867	5.42	6.25	176,300
April	25,928	1,260	598	864	1.63	1.82	51,450
May	17,327	1,090	354	559	1.06	1.22	34,370
June	9,849	614	219	328	.620	.69	19,540
July	4,081	201	84	132	.250	.29	8,090
August	2,292	108	60	73.9	.140	.16	4,550
September	8,968	693	57	299	.565	.63	17,790
Water year 1945-46	559,310	24,700	57	1,532	2.90	39.33	1,110,000

Peak discharge.- Nov. 19 (1 a.m.) 25,500 sec.-ft.; Nov. 27 (7 p.m.) 15,400 sec.-ft.; Dec. 7 (1 a.m.) 18,200 sec.-ft.; Dec. 28 (4 to 5 p.m.) 32,900 sec.-ft.; Mar. 13 (12:30 a.m.) 12,000 sec.-ft.

Row River at Star, Oreg.

Location.- Water-stage recorder, lat. 43°44', long. 122°53', in NW¼ sec. 24, T. 21 S., R. 2 W., half a mile west of Star and 3 miles upstream from Teeter Creek. Datum of gage is 856.16 feet above mean sea level, datum of 1929.

Drainage area.- 211 square miles.

Records available.- September 1935 to September 1946.

Average discharge.- 11 years, 536 second-feet.

Extremes.- Maximum discharge during year, 19,600 second-feet Dec. 28 (gage height, 14.33 feet), from rating curve extended above 9,300 second-feet; minimum, 15 second-feet Sept. 14, 29 (gage height, 1.50 feet).
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum, 12 second-feet Sept. 2, 1940.

Remarks.- Records excellent. No diversion above station; possible slight regulation at times by log ponds.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.6	20	2.6	112	4.2	580	7.2	2,960
1.8	32	2.9	162	4.8	900	8.5	4,660
2.0	47	3.3	254	5.4	1,310	10.0	7,650
2.3	76	3.7	378	6.0	1,770	12.0	12,700

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	100	1,060	1,430	535	1,610	625	347	303	92	38	28
2	24	123	786	2,100	616	1,310	544	371	279	87	36	25
3	24	149	650	2,210	598	1,380	472	452	251	82	33	24
4	24	86	913	3,530	526	1,330	422	456	216	78	32	24
5	24	158	1,120	5,720	480	1,160	400	364	195	75	31	23
6	24	238	3,250	2,800	1,520	1,590	382	315	216	72	31	23
7	24	153	3,500	3,020	1,380	1,320	358	306	174	69	30	22
8	22	115	1,810	2,490	1,020	1,040	385	274	160	71	30	21
9	22	824	1,250	1,660	840	913	418	254	149	78	29	18
10	21	1,210	1,500	1,390	720	939	505	271	141	68	28	18
11	21	752	1,300	1,160	620	822	580	271	129	63	28	16
12	22	1,750	958	900	544	2,280	640	262	124	60	27	16
13	22	1,250	725	764	480	3,370	650	254	127	59	27	16
14	22	798	589	715	526	2,020	612	226	189	57	26	16
15	21	1,350	496	680	810	1,790	607	204	238	56	25	21
16	22	1,510	433	602	900	1,600	620	209	197	52	25	53
17	25	1,510	396	540	840	1,630	680	254	168	50	25	60
18	24	3,310	368	514	894	1,640	810	274	153	48	24	37
19	24	4,590	338	484	978	1,270	650	244	144	47	22	29
20	30	1,930	331	441	1,010	998	518	244	141	44	21	25
21	36	1,110	514	407	965	852	433	231	130	41	21	23
22	72	894	571	2,310	900	840	375	221	121	41	20	22
23	67	858	571	1,880	792	774	354	223	118	39	21	21
24	44	725	1,100	2,540	1,140	725	472	193	120	38	20	20
25	36	1,030	840	2,380	1,420	700	635	233	153	36	22	19
26	31	1,610	1,310	1,510	1,030	774	598	488	141	37	22	18
27	31	4,630	2,090	1,110	2,940	958	429	655	122	41	20	17
28	61	4,360	14,500	894	2,300	882	361	616	116	38	18	18
29	64	2,780	6,660	747	-	1,040	407	598	114	37	22	16
30	153	1,560	3,260	612	-	920	396	441	100	37	35	18
31	124	-	2,020	544	-	747	-	351	-	39	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,188	153	21	38.3	0.182	0.21	2,360
November	41,463	4,630	86	1,382	6.55	7.31	82,240
December	55,209	14,500	331	1,781	8.44	9.73	109,500
Calendar year 1945	270,744	14,500	18	742	3.52	47.72	537,000
January	48,084	5,720	407	1,551	7.35	8.48	95,370
February	27,324	2,940	480	976	4.63	4.82	54,200
March	39,224	3,370	700	1,265	6.00	6.91	77,800
April	15,338	810	354	511	2.42	2.70	30,420
May	10,102	655	193	326	1.55	1.78	20,040
June	4,927	303	100	164	.777	.87	9,770
July	1,732	92	36	55.9	.265	.31	3,440
August	820	38	18	26.5	.126	.14	1,630
September	707	60	16	23.6	.112	.12	1,400
Water year 1945-46	246,118	14,500	16	674	3.19	43.38	488,170

Peak discharge.- Nov. 18 (10:30 p.m.) 9,630 sec.-ft.; Nov. 27 (3 p.m.) 5,180 sec.-ft.; Dec. 7 (6 p.m.) 8,380 sec.-ft.; Dec. 28 (2:30 and 3:30 p.m.) 19,600 sec.-ft.; Jan. 5 (8 a.m.) 6,980 sec.-ft.; Mar. 13 (11 p.m.) 4,690 sec.-ft.

Row River near Dorena, Oreg.

Location.- Water-stage recorder, lat. 43°48', long. 122°57', in NE¼ sec. 36, T. 20 S., R. 3 W., 1½ miles upstream from Mosby Creek and 3½ miles northwest of Dorena. Datum of gage is 685.24 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).

Drainage area.- 270 square miles.

Records available.- January 1939 to September 1946.

Extremes.- Maximum discharge during year; 21,400 second-feet Dec. 28 (gage height, 18.20 feet); minimum, 18 second-feet Sept. 12 (gage height, 1.32 feet).
1939-46: Maximum discharge, that of Dec. 28, 1945; minimum, 14 second-feet Aug. 29 to Sept. 2, 1940 (gage height, 1.23 feet).

Remarks.- Records good except those below 40 second-feet and those for periods of no gage-height record, which are fair. No diversion or regulation above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27						Dec. 28 to Sept. 30					
1.6	38	2.6	320	5.2	1,880	1.5	33	2.6	343	6.2	2,890
1.7	54	2.9	450	6.0	2,520	1.6	46	3.0	530	7.5	4,200
1.9	92	3.3	650	7.2	3,550	1.7	62	3.4	745	9.0	6,060
2.1	140	3.8	940	9.0	5,420	1.9	103	3.9	1,060	11.0	8,940
2.3	205	4.5	1,380			2.1	158	4.5	1,480	13.0	12,100
						2.3	225	5.2	2,030	15.0	15,450

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	120	1,360	1,850	723	2,030	787	415	356	113	a48	37
2	34	132	1,010	2,420	853	1,700	684	428	330	106	a46	33
3	32	191	814	2,760	823	1,850	652	515	301	99	a43	32
4	32	110	1,010	4,120	723	1,730	535	530	258	94	h42	31
5	32	194	1,260	7,540	652	1,510	495	447	229	90	a41	31
6	32	324	3,330	3,700	1,890	1,960	471	383	251	85	41	31
7	32	216	4,280	3,860	1,930	1,690	442	369	218	83	40	30
8	30	170	2,260	3,330	1,440	1,350	471	339	197	85	38	29
9	30	917	1,540	2,240	1,190	1,170	520	314	184	96	36	28
10	29	1,650	1,760	1,850	1,030	1,170	618	326	171	85	34	27
11	30	1,100	1,560	1,520	878	1,030	690	330	155	77	34	26
12	30	2,110	1,180	1,210	745	2,730	757	318	152	75	34	23
13	32	1,680	916	1,010	662	4,490	769	309	152	75	34	25
14	32	994	736	936	690	2,700	718	278	211	73	33	23
15	32	1,560	625	872	995	2,350	706	244	278	72	33	31
16	32	1,860	550	757	1,120	2,090	706	244	236	70	33	79
17	36	1,900	490	674	1,080	2,130	757	282	208	66	33	85
18	38	4,130	445	635	1,120	2,150	910	318	187	62	32	56
19	38	5,910	410	596	1,190	1,670	751	278	174	60	32	42
20	48	2,580	396	550	1,270	1,330	602	274	164	59	31	34
21	58	1,500	560	505	1,190	1,130	510	262	155	a54	30	32
22	94	1,140	650	2,550	1,120	1,060	438	247	149	a54	29	30
23	101	1,070	615	2,290	988	976	410	262	146	a51	29	28
24	72	892	1,220	3,080	1,310	924	510	222	149	a49	28	28
25	58	1,210	988	3,100	1,390	878	690	270	177	a46	29	27
26	51	1,750	1,510	1,970	1,270	917	679	618	174	a47	31	26
27	54	5,040	2,080	1,440	3,370	1,130	500	763	149	a51	28	26
28	84	5,180	15,800	1,190	2,830	1,050	410	745	138	h48	27	26
29	97	3,480	8,850	1,010	-	1,270	471	718	138	a47	30	26
30	167	2,010	4,240	835	-	1,150	471	535	124	a47	43	26
31	152	-	2,600	728	-	950	-	424	-	a49	43	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,657	167	29	53.5	0.198	0.23	3,290
November	51,120	5,910	110	1,704	6.31	7.04	101,400
December	65,045	15,800	396	2,098	7.77	8.96	129,000
Calendar year 1945	332,954	15,800	22	912	3.38	45.85	660,400
January	61,128	7,540	505	1,972	7.30	8.42	121,200
February	34,752	3,370	652	1,241	4.60	4.79	68,930
March	50,265	4,490	878	1,621	6.00	6.92	99,700
April	18,130	910	410	604	2.24	2.50	35,960
May	12,007	763	222	387	1.43	1.65	23,820
June	5,911	356	124	197	.730	.81	11,720
July	2,168	113	46	69.9	.259	.30	4,300
August	1,065	48	27	35.0	.130	.15	2,150
September	1,008	85	23	33.6	.124	.14	2,000
Water year 1945-46	304,276	15,800	23	834	3.09	41.91	603,500

Peak discharge.- Nov. 18 (11 p.m.) 11,900 sec.-ft.; Nov. 27 (5 p.m.) 5,880 sec.-ft.; Dec. 6 (9 p.m.) 9,300 sec.-ft.; Dec. 28 (2:30 p.m.) 21,400 sec.-ft.; Jan. 5 (8:30 p.m.) 9,000 sec.-ft.

a No gage-height record; discharge computed on basis of records for station near Star.
h Computed from tape-gage readings.

Mosby Creek near Cottage Grove, Oreg.

Location.- Staff gage, lat. 43°45', long. 122°59', in NW¼ sec. 18, T. 21 S., R. 3 W., 5 miles southeast of Cottage Grove.

Drainage area.- 85 square miles.

Records available.- February 1936 to September 1946 (discontinued).

Average discharge.- 10 years, 191 second-feet.

Extremes.- Maximum discharge during year, 8,520 second-feet Dec. 28 (gage height, 10.4 feet from floodmark), from rating curve extended above 2,400 second-feet; minimum observed, 6 second-feet Sept. 9-14.
1936-46: Maximum discharge, that of Dec. 28, 1945; minimum, 3 second-feet Aug. 15 to Sept. 2, 1940.

Remarks.- Records poor prior to Sept. 4, fair thereafter. Gage read once daily, twice daily at medium and high stages; water-stage recorder at site 2½ miles downstream used Sept. 5-30, low-water flow being essentially the same at that site. No diversion or regulation above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	35	415	322	a220	590	191	74	-		-	a9
2	8.0	33	a300	1,030	a230	617	166	69	-		-	a8
3	8.0	30	a250	1,160	a220	644	145	67	53		-	a8
4	8.0	30	a300	1,770	a200	639	130	a65	-		-	a8
5	8.0	35	a1,000	3,820	a200	556	a120	63	-		-	8
6	8.0	d70	1,660	a1,200	a700	480	a140	61	53		-	8
7	a8.0	56	1,520	1,290	a600	420	184	59	-		-	a7
8	8.0	70	a1,000	1,020	a500	362	197	58	-		-	a7
9	7.4	88	a700	794	a400	322	210	55	-		-	6
10	7.4	d500	490	686	a350	258	194	a53	-		-	6
11	8.0	270	a400	568	287	224	172	51	-		-	6
12	7.4	650	304	455	266	842	160	a49	-		-	6
13	7.4	518	258	a350	247	1,340	154	47	-		11	6
14	a7.4	270	a240	236	258	903	149	45	-		-	6
15	7.4	367	a220	210	291	800	140	44	-		-	8
16	7.4	562	a200	191	279	674	135	42	-		-	19
17	9.4	650	191	172	a280	a700	127	42	-		-	16
18	8.7	2,010	a175	151	d290	584	117	41	-		-	12
19	7.4	1,480	a160	140	d300	529	110	40	-		-	11
20	9.4	800	a150	124	d310	465	100	a40	-		-	10
21	14	425	a150	112	d290	358	93	a45	-		-	8
22	17	279	a160	367	d270	504	91	a50	-		-	8
23	17	228	a250	650	254	250	a88	a55	-		-	8
24	15	181	a350	1,510	262	232	87	a50	-		-	8
25	14	622	a400	1,400	d400	228	84	a80	-		-	7
26	12	1,320	a600	540	372	a230	a86	a150	-		-	7
27	14	2,260	a800	415	1,120	a230	78	250	-		-	7
28	d30	2,650	6,330	385	842	a230	a76	a160	-		8.2	7
29	35	a1,500	2,630	a330	-	a300	78	a110	-		-	7
30	49	a800	a2,000	a280	-	a260	74	a90	-		-	7
31	42	-	1,650	a240	-	221	-	a70	-		-	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	418.4	49	7.4	13.5	0.159	0.18	830
November	18,789	2,650	30	626	7.36	8.22	37,270
December	25,253	6,330	150	815	9.59	11.05	50,090
Calendar year 1945	106,078.7	6,330	6.4	291	3.42	46.42	210,400
January	21,918	3,820	112	707	8.32	9.59	43,470
February	10,238	1,120	200	366	4.31	4.48	20,310
March	14,792	1,340	221	477	5.61	6.47	29,340
April	3,877	210	74	129	1.52	1.70	7,690
May	2,175	250	40	70.2	.826	.95	4,310
June	1,230	-	-	41	.482	.54	2,440
July	651	-	-	21	.247	.28	1,290
August	341	-	-	11	.129	.15	676
September	249	19	6	8.3	.098	.11	494
Water year 1945-46	99,931.4	6,330	6	274	3.22	43.72	198,200

a No gage-height record; discharge computed on basis of records for Row River at Star and at Dorena and Coast Fork Willamette River at London and at Saginaw.
d Doubtful gage-height record; discharge computed as explained under a.
Note.- No gage-height record June 1 to Aug. 31; discharge computed on basis of 4 staff-gage readings and records for Row River at Star and at Dorena and Coast Fork Willamette River at London and at Saginaw (monthly mean discharges only, June, July and August).

McKenzie River at McKenzie Bridge, Oreg.

Location.- Water-stage recorder, lat. 44°11', long. 122°07', in NE¼ sec. 18, T. 16 S., R. 6 E., 1.7 miles east of village of McKenzie Bridge. Datum of gage is 1,419.04 feet (revised) above mean sea level, datum of 1929.

Drainage area.- 345 square miles at measuring section three-quarters of a mile above gage.

Records available.- August 1910 to September 1946.

Average discharge.- 30 years (1910-14, 1915-16, 1918-21, 1923-25, 1926-46), 1,577 second-feet.

Extremes.- Maximum discharge during year, 13,300 second-feet Dec. 28 (gage height, 8.03 feet), from rating curve extended above 7,200 second-feet; minimum, 858 second-feet Oct. 7-10, 13 (gage height, 1.26 feet).
1910-46: Maximum discharge, 18,000 second-feet Jan. 6, 1923 (gage height, 8.3 feet, from floodmarks at former gage at highway bridge), from rating curve extended above 2,400 second-feet; minimum, 805 second-feet Oct. 20, 1931.

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

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	872	872	1,720	3,410	1,850	2,080	1,360	2,050	2,310	1,720	1,350	1,220
2	872	910	1,580	3,500	1,810	2,000	1,330	2,080	2,350	1,710	1,340	1,230
3	865	880	1,480	3,400	1,730	1,900	1,300	2,280	2,330	1,700	1,330	1,220
4	865	872	1,490	3,770	1,670	1,820	1,270	2,450	2,260	1,680	1,330	1,200
5	865	888	1,500	3,910	1,680	1,770	1,250	2,380	2,220	1,660	1,320	1,200
6	865	880	1,790	3,320	1,830	1,820	1,230	2,360	2,200	1,630	1,310	1,180
7	858	880	1,930	3,230	1,770	1,790	1,230	2,320	2,140	1,610	1,300	1,150
8	858	872	1,730	2,950	1,690	1,760	1,240	2,240	2,130	1,670	1,300	1,130
9	858	941	1,620	2,680	1,640	1,730	1,240	2,220	2,080	1,640	1,300	1,120
10	858	989	1,560	2,490	1,610	1,760	1,250	2,270	2,020	1,610	1,280	1,100
11	865	957	1,480	2,350	1,560	1,750	1,270	2,280	1,990	1,590	1,250	1,100
12	870	1,060	1,410	2,190	1,510	2,030	1,310	2,280	1,990	1,570	1,250	1,100
13	872	1,060	1,360	2,070	1,480	2,060	1,350	2,280	2,020	1,570	1,250	1,080
14	872	1,100	1,310	1,960	1,460	1,910	1,360	2,220	2,190	1,540	1,250	1,080
15	872	1,230	1,280	1,870	1,470	1,930	1,310	2,150	2,150	1,530	1,230	1,150
16	872	1,210	1,240	1,830	1,450	1,810	1,490	2,220	2,060	1,510	1,230	1,270
17	872	1,170	1,220	1,770	1,450	1,830	1,620	2,370	1,990	1,500	1,220	1,220
18	872	1,270	1,200	1,730	1,440	1,790	1,870	2,490	1,970	1,480	1,220	1,180
19	865	1,380	1,160	1,690	1,420	1,730	1,810	2,500	1,970	1,470	1,200	1,150
20	872	1,320	1,150	1,640	1,410	1,680	1,730	2,490	2,000	1,460	1,200	1,100
21	872	1,230	1,210	1,670	1,440	1,640	1,680	2,360	1,990	1,450	1,200	1,100
22	872	1,170	1,230	2,500	1,420	1,640	1,630	2,320	1,930	1,440	1,200	1,100
23	865	1,140	1,280	2,360	1,410	1,620	1,630	2,260	1,880	1,440	1,200	1,080
24	865	1,150	1,360	3,530	1,500	1,580	1,820	2,220	1,840	1,420	1,200	1,080
25	865	1,250	1,390	3,050	1,590	1,530	2,170	2,280	1,840	1,410	1,180	1,050
26	865	1,710	1,510	2,630	1,570	1,540	2,380	2,450	1,780	1,400	1,180	1,050
27	865	3,530	1,970	2,370	2,280	1,630	2,220	2,480	1,760	1,400	1,180	1,050
28	865	2,980	9,560	2,220	2,280	1,560	2,070	2,530	1,780	1,390	1,180	1,050
29	865	2,370	8,140	2,090	-	1,460	2,200	2,440	1,760	1,380	1,230	1,050
30	888	1,950	5,390	1,950	-	1,450	2,130	2,320	1,730	1,370	1,230	1,050
31	880	-	4,040	1,890	-	1,400	-	2,290	-	1,360	1,220	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	26,907	888	858	868	2.52	2.90	53,370
November	39,221	3,530	872	1,307	3.79	4.23	77,790
December	66,290	9,560	1,150	2,138	6.20	7.15	131,500
Calendar year 1945	559,766	9,560	858	1,534	4.45	60.35	1,110,000
January	78,020	3,910	1,640	2,517	7.30	8.41	154,800
February	45,420	2,280	1,410	1,622	4.70	4.90	90,090
March	54,000	2,080	1,400	1,742	5.05	5.82	107,100
April	47,750	2,380	1,230	1,592	4.61	5.15	94,710
May	71,880	2,530	2,050	2,319	6.72	7.75	142,600
June	60,660	2,350	1,730	2,022	5.86	6.54	120,300
July	47,310	1,720	1,360	1,528	4.42	5.10	93,840
August	38,660	1,350	1,180	1,247	3.61	4.17	76,680
September	33,840	1,270	1,050	1,128	3.27	3.65	67,120
Water year 1945-46	609,958	9,560	858	1,671	4.84	65.77	1,210,000

Peak discharge.- Nov. 27 (2 p.m.) 3,960 sec.-ft.; Dec. 28 (5:30 p.m.) 13,300 sec.-ft.; Jan. 4 (11 p.m.) 4,260 sec.-ft.; Jan. 24 (10 a.m.) 4,160 sec.-ft.

Note.- No gage-height record Oct. 11, 12, Aug. 8 to Sept. 30; discharge computed on basis of records for station near Vida.

McKenzie River near Vida, Oreg.

Location.- Water-stage recorder, lat. 44°07', long. 122°28', in NE¼ sec. 5, T. 17 S., R. 3 E., 1 mile upstream from head of Martin Rapids and 5 miles east of Vida. Datum of gage is 855.56 feet above mean sea level, datum of 1929.

Drainage area.- 930 square miles.

Records available.- September 1924 to September 1946. June 1910 to March 1911 (gage heights only) at site at Martin Rapids.

Average discharge.- 22 years, 3,595 second-feet.

Extremes.- Maximum discharge during year, 64,400 second-feet Dec. 28 (gage height, 17.70 feet), from rating curve extended above 25,000 second-feet by logarithmic plotting; minimum, 1,370 second-feet Oct. 8-16, 18, 19, 26, 27 (gage height, 0.62 foot).
1924-46: Maximum discharge, that of Dec. 28, 1945; minimum, 1,260 second-feet Nov. 7, 1920, Sept. 17, Oct. 4, 8, 9, 1931 (gage height, 0.36 foot).

Remarks.- Records excellent. No diversion or regulation above station.

Cooperation.- Water-stage recorder inspected by employee of Eugene Water Board.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.7	1,470	3.5	6,820	8.0	22,200
1.2	2,180	4.5	9,750	10.0	30,200
1.8	3,170	5.5	12,950	12.0	38,500
2.5	4,490	6.5	16,450	14.0	47,200

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,410	1,670	5,580	10,800	4,600	7,230	4,090	5,000	4,830	3,170	2,140	1,850
2	1,410	1,980	4,780	10,800	4,550	6,530	3,880	5,110	4,980	3,120	2,120	1,880
3	1,410	1,780	4,330	10,600	4,250	6,180	3,690	5,810	4,980	3,070	2,100	1,850
4	1,400	1,590	4,450	12,700	4,000	5,600	3,550	6,460	4,720	3,000	2,090	1,810
5	1,400	1,730	4,620	15,400	4,010	5,240	3,480	6,050	4,550	2,930	2,080	1,820
6	1,390	1,750	7,350	10,900	5,740	5,810	3,400	5,700	4,570	2,850	2,060	1,800
7	1,390	1,670	9,240	11,000	5,420	5,530	3,330	5,630	4,250	2,810	2,040	1,780
8	1,390	1,610	6,300	9,990	4,680	5,130	3,530	5,310	4,230	2,920	2,030	1,770
9	1,370	2,360	5,150	8,160	4,330	4,980	3,510	5,110	4,110	2,950	2,000	1,730
10	1,390	3,240	4,800	7,040	4,110	5,060	3,640	5,330	3,940	2,780	1,980	1,710
11	1,370	2,740	4,600	6,180	3,800	4,930	3,940	5,330	3,820	2,730	1,980	1,710
12	1,370	4,310	4,170	5,580	3,620	8,430	4,130	5,280	3,820	2,680	1,970	1,700
13	1,370	3,690	3,840	5,130	3,490	9,390	4,250	5,260	3,980	2,640	1,960	1,680
14	1,370	3,310	3,570	4,800	3,480	7,060	4,270	5,000	4,680	2,610	1,940	1,680
15	1,370	4,270	3,390	4,550	3,600	6,790	4,410	4,780	4,680	2,560	1,920	1,750
16	1,370	4,350	3,240	4,290	3,660	6,100	4,660	4,910	4,310	2,520	1,920	2,020
17	1,390	4,050	3,190	4,130	3,690	6,200	5,150	5,420	4,110	2,470	1,910	1,900
18	1,370	5,510	3,140	4,090	3,900	6,000	6,180	5,810	3,960	2,440	1,900	1,770
19	1,390	7,400	3,030	4,070	3,770	5,510	5,950	5,830	3,960	2,400	1,880	1,710
20	1,410	4,800	2,970	3,960	3,730	5,130	5,400	5,830	4,010	2,390	1,880	1,700
21	1,420	3,670	3,580	4,010	3,880	4,850	4,950	5,310	4,000	2,370	1,870	1,680
22	1,550	3,260	3,960	11,800	3,920	4,890	4,530	5,130	3,880	2,360	1,850	1,680
23	1,460	3,170	4,070	9,210	3,820	4,680	4,450	4,930	3,710	2,320	1,840	1,670
24	1,410	3,240	5,200	13,900	4,490	4,600	5,040	4,700	3,580	2,280	1,850	1,660
25	1,390	3,900	4,910	10,200	5,330	4,410	6,400	4,800	3,620	2,260	1,850	1,660
26	1,370	5,740	5,700	8,580	4,700	4,470	6,820	5,310	3,460	2,240	1,820	1,660
27	1,390	17,400	8,330	7,010	10,100	5,040	5,950	5,510	3,300	2,240	1,820	1,640
28	1,420	15,200	47,900	6,160	9,210	4,980	5,370	5,740	3,370	2,210	1,810	1,640
29	1,460	10,500	34,900	5,560	-	5,020	5,600	5,550	3,350	2,200	1,910	1,630
30	1,630	7,090	20,400	4,980	-	4,720	5,350	5,020	3,210	2,180	1,910	1,630
31	1,680	-	13,900	4,680	-	4,370	-	4,890	-	2,160	1,850	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	43,920	1,680	1,370	1,417	1.52	1.78	87,110
November	136,980	17,400	1,590	4,566	4.91	5.48	271,700
December	244,590	47,900	2,970	7,890	8.48	9.78	485,100
Calendar year 1945	1,525,260	47,900	1,370	4,179	4.49	61.01	3,025,000
January	240,260	15,400	3,960	7,750	8.33	9.61	476,500
February	127,780	10,100	3,480	4,564	4.91	5.11	253,400
March	174,880	9,390	4,370	5,641	6.07	6.99	346,800
April	136,900	6,820	3,350	4,650	4.98	5.55	275,500
May	165,830	6,460	4,700	5,349	5.75	6.63	328,900
June	121,950	4,980	3,210	4,065	4.37	4.88	241,900
July	79,860	3,170	2,160	2,576	2.77	3.19	158,400
August	60,280	2,140	1,810	1,945	2.09	2.41	119,600
September	52,170	2,020	1,630	1,739	1.87	2.09	103,500
Water year 1945-46	1,587,380	47,900	1,370	4,349	4.68	63.48	3,148,000

Peak discharge.- Nov. 27 (3 p.m.) 20,200 sec.-ft.; Dec. 6 (9 p.m.) 12,400 sec.-ft.; Dec. 28 (7 p.m.) 64,400 sec.-ft.; Jan. 5 (2:30 a.m.) 17,200 sec.-ft.; Jan. 22 (10:30 a.m.) 15,100 sec.-ft.; Jan. 24 (1:30 p.m.) 16,800 sec.-ft.

McKenzie River near Coburg, Oreg.

Location.- Water-stage recorder, lat. 44°06'48", long. 123°02'49", in NE¼NE¼ sec. 9, T. 17 S., R. 3 W., at Armitage Bridge, 2 miles southeast of Coburg and 3 miles upstream from mouth. Datum of gage is 395.96 feet above mean sea level, datum of 1929.

Drainage area.- 1,310 square miles.

Records available.- October 1944 to September 1946.

Extremes.- Maximum discharge during year, 88,200 second-feet Dec. 29 (gage height, 17.36 feet), from rating curve extended above 36,000 second-feet on basis of records for other stations in Willamette River Basin; minimum, 1,360 second-feet Oct. 14.
1944-46: Maximum discharge, that of Dec. 29, 1945; minimum daily, 1,310 second-feet Oct. 29, 1944.

Remarks.- Records good. Slight diurnal fluctuation caused by log ponds and power plants upstream. Water supply for city of Eugene is diverted about 10 miles upstream; small diversions above station for irrigation.

Cooperation.- Wire-weight gage read once daily during fall and winter months by employee of U. S. Weather Bureau.

Rating tables, water year 1945-46 (gage heignt, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 27, Sept. 22-30)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
1.5	1,330	3.0	3,620	6.0	10,800	2.0	1,670	6.0	10,500	12.0	34,700
2.0	1,920	4.0	5,750	7.0	13,700	2.5	2,490	7.0	13,600	13.5	44,900
2.5	2,700	5.0	8,210	7.9	16,700	3.0	3,390	7.9	16,700	15.6	66,500
						4.0	5,430	9.0	21,000		
						5.0	7,760	10.5	27,500		

Note.- Same as following table above 7.9 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,480	a1,900	9,550	17,200	7,200	11,800	5,800	5,870	5,320	3,370	2,240	1,880
2	1,480	a2,100	7,880	15,200	7,390	10,400	5,470	5,670	5,390	3,330	2,180	1,930
3	1,480	a2,050	6,780	16,000	7,050	10,500	5,150	6,170	5,430	3,240	2,150	1,930
4	1,470	a1,850	6,400	16,000	6,470	9,540	4,940	6,960	5,230	3,180	2,150	1,860
5	1,460	a1,950	6,660	25,600	6,120	8,600	4,790	6,860	5,000	3,070	2,120	1,850
6	1,460	a1,950	a8,800	19,800	9,050	8,860	4,580	6,400	5,060	3,000	2,120	1,860
7	1,450	a1,950	a12,000	17,000	11,000	8,730	4,480	6,220	4,790	2,950	2,100	1,810
8	1,450	a1,900	a13,000	17,800	9,000	7,910	4,580	6,030	4,580	3,000	2,070	1,780
9	1,450	a2,600	a10,500	13,800	7,840	7,390	4,750	5,740	4,480	3,300	2,050	1,750
10	1,430	a3,700	7,840	11,800	7,270	7,270	5,020	5,760	4,330	3,000	2,040	1,720
11	1,420	a3,800	7,410	10,100	6,680	7,080	5,430	5,830	4,130	2,910	2,020	1,700
12	1,420	a5,200	6,660	8,830	6,100	10,900	5,520	5,780	4,070	2,860	2,020	1,690
13	1,420	a5,400	5,920	8,010	5,690	19,000	5,650	5,760	4,170	2,800	2,010	1,670
14	1,410	a5,200	5,360	7,320	5,470	13,600	5,560	5,610	4,710	2,770	1,990	1,670
15	1,410	5,030	4,940	6,790	5,470	12,000	5,580	5,300	5,230	2,710	1,990	1,780
16	1,430	6,610	4,660	6,330	5,650	11,000	5,690	5,280	4,810	2,640	1,940	2,170
17	1,440	6,980	4,450	5,940	5,580	10,600	6,080	5,560	4,580	2,610	1,940	2,150
18	1,430	7,160	4,370	5,690	5,670	10,700	6,930	6,120	4,330	2,540	1,930	1,970
19	1,420	15,200	4,180	5,610	5,630	9,400	7,250	6,240	4,230	2,490	1,910	1,830
20	1,470	9,840	4,020	5,430	5,650	8,470	6,720	6,310	4,210	2,460	1,910	1,750
21	1,510	7,060	4,430	5,250	5,720	7,710	6,150	6,030	4,210	2,400	1,880	1,700
22	a1,650	5,750	5,090	13,300	5,870	7,410	5,670	5,690	4,170	2,390	1,930	1,700
23	a1,550	5,180	5,110	14,600	5,650	7,100	5,390	5,580	4,010	2,390	1,830	1,670
24	a1,500	4,960	7,040	17,500	6,050	6,930	5,610	5,210	3,930	2,340	1,830	1,690
25	a1,450	5,590	7,080	21,100	7,760	6,580	6,720	5,230	3,970	2,300	1,880	1,690
26	a1,450	7,080	7,840	14,400	7,100	6,350	7,840	5,740	3,810	2,300	1,850	1,670
27	a1,500	20,100	9,320	11,400	11,500	6,740	7,170	6,100	3,800	2,300	1,830	1,660
28	a1,550	25,400	42,700	9,820	14,800	6,910	6,380	6,330	3,540	2,290	1,830	1,670
29	a1,650	18,700	65,900	8,940	-	7,220	6,330	6,380	3,680	2,250	1,880	1,660
30	a1,850	12,500	35,000	7,980	-	6,810	6,380	5,720	3,480	2,250	2,020	1,640
31	a1,900	-	23,200	7,220	-	6,260	-	5,430	-	2,250	1,940	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	46,440	1,900	1,410	1,498	1.14	1.32	92,110
November	204,690	25,400	1,850	6,823	5.21	5.81	406,000
December	354,090	65,900	4,020	11,420	8.72	10.05	702,300
Calendar year 1945	2,104,800	65,900	1,410	5,767	4.40	59.77	4,175,000
January	371,790	25,600	5,250	11,990	9.15	10.55	737,400
February	200,430	14,800	5,470	7,158	5.46	5.69	397,500
March	279,770	19,000	6,260	9,025	6.89	7.94	554,900
April	173,610	7,840	4,480	5,787	4.42	4.93	344,400
May	182,890	6,960	5,210	5,900	4.50	5.19	362,800
June	132,480	5,430	3,480	4,416	3.37	3.76	262,800
July	83,690	3,370	2,250	2,700	2.06	2.38	166,000
August	61,580	2,240	1,830	1,986	1.52	1.75	122,100
September	53,500	2,170	1,640	1,783	1.36	1.52	106,100
Water year 1945-46	2,144,960	65,900	1,410	5,877	4.49	60.89	4,254,000

a No gage-height record; discharge computed on basis of records for McKenzie River near Vida and Mohawk River near Springfield.

Blue River near Blue River, Oreg.

Location.- Water-stage recorder, lat. 44°11', long. 122°17', near line between secs. 13 and 14, T. 16 S., R. 4 E., 3 miles upstream from Quartz Creek (formerly called North Fork) and 3½ miles northeast of Blue River post office.

Drainage area.- 75 square miles.

Records available.- September 1935 to September 1946.

Average discharge.- 11 years, 344 second-feet.

Extremes.- Maximum discharge during year, 13,300 second-feet Dec. 28 (gage height, 9.80 feet), from rating curve extended above 6,500 second-feet; minimum, 17 second-feet Oct. 15, 16.
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum, 13 second-feet Sept. 27, 28, Oct. 1, 2, 1938.

Remarks.- Records good except those above 1,000 second-feet, which are fair. No diversion or regulation above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 1, Nov. 26, 27)

Oct. 1 to Dec. 27						Dec. 28 to Sept. 30					
1.0	14	1.6	205	3.4	1,610	1.0	23	1.8	370	4.7	3,810
1.1	29	1.8	300	4.0	2,290	1.1	43	2.1	575	5.5	5,200
1.2	52	2.1	480	4.7	3,150	1.2	73	2.4	805	6.5	7,000
1.3	81	2.4	710	5.5	4,190	1.3	110	2.8	1,170	7.5	8,850
1.4	117	2.8	1,040			1.4	150	3.4	1,840	9.0	11,700
						1.6	255	4.0	2,680		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	66	694	1,150	358	1,030	402	449	304	118	41	33
2	18	147	529	1,290	352	869	358	505	310	110	41	61
3	18	92	467	1,250	316	773	322	650	288	103	41	35
4	18	55	614	1,840	282	658	304	688	255	95	39	29
5	18	75	678	2,070	294	582	304	575	238	92	37	31
6	18	78	1,540	1,270	789	718	294	519	250	88	37	31
7	18	66	1,410	1,420	635	658	288	491	216	80	37	27
8	18	55	846	1,160	470	598	310	428	216	103	37	27
9	18	144	614	829	396	590	322	416	195	103	35	25
10	18	290	550	665	352	650	383	456	175	92	35	23
11	18	210	460	540	299	620	498	442	165	84	33	23
12	18	372	391	463	272	1,300	575	435	165	80	33	23
13	18	344	333	409	255	1,300	598	416	175	77	31	23
14	18	428	295	370	250	877	590	364	255	73	31	23
15	17	654	270	340	266	894	620	340	250	70	31	31
16	18	598	246	316	288	733	672	383	222	67	31	67
17	20	487	246	304	310	765	781	456	206	64	31	55
18	18	692	250	334	346	710	966	477	190	64	29	37
19	18	782	236	364	340	612	805	463	180	61	29	31
20	23	508	236	352	334	554	665	435	170	61	31	27
21	24	333	422	2,070	396	526	561	364	160	58	31	27
22	36	290	501	2,200	428	575	477	340	150	55	29	27
23	28	311	550	1,450	422	540	491	304	142	52	29	27
24	22	379	806	2,770	642	491	665	294	138	52	29	27
25	20	662	758	1,680	797	463	885	316	142	49	29	25
26	20	1,580	1,010	1,030	628	519	829	390	130	49	29	25
27	22	4,080	2,050	741	1,980	672	620	396	118	49	27	23
28	28	2,700	10,900	605	1,480	620	526	435	142	46	27	25
29	38	1,560	4,970	498	-	582	561	402	142	46	35	23
30	55	968	2,460	416	-	519	498	334	126	43	37	23
31	69	-	1,560	370	-	456	-	316	-	43	33	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	728	69	17	23.5	0.313	0.36	1,440
November	19,006	4,080	55	634	8.45	9.42	37,700
December	36,892	10,900	236	1,190	15.9	18.29	73,170
Calendar year 1945	170,954	10,900	17	468	6.24	84.75	339,100
January	30,566	2,770	304	986	13.1	15.16	60,630
February	13,977	1,980	250	499	6.65	6.93	27,720
March	21,454	1,300	456	692	9.23	10.64	42,550
April	16,170	966	288	539	7.19	8.02	32,070
May	13,279	688	294	428	5.71	6.58	26,340
June	5,815	310	118	194	2.59	2.88	11,530
July	2,227	118	45	71.8	.957	1.10	4,420
August	1,025	41	27	33.1	.441	.51	2,030
September	914	67	23	30.5	.407	.45	1,810
Water year 1945-46	162,053	10,900	17	444	5.92	80.34	321,400

Peak discharge.- Nov. 27 (12 m.) 4,470 sec.-ft.; Dec. 28 (5 p.m.) 13,300 sec.-ft.; Jan. 24 (10 a.m.) 3,560 sec.-ft.

Mohawk River near Springfield, Oreg.

Location.- Wire-weight gage, lat. 44°06', long. 122°57', in sec. 17, T. 17 S., R. 2 W., 1 mile upstream from mouth and 4½ miles northeast of Springfield.

Drainage area.- 180 square miles.

Records available.- September 1935 to September 1946.

Average discharge.- 11 years, 499 second-feet.

Extremes.- Maximum discharge during year, 8,600 second-feet Dec. 28 (gage height, 22.1 feet, from floodmark), from rating curve extended above 5,000 second-feet; minimum observed, 20 second-feet Aug. 20-23.
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 11 second-feet Sept. 17, 1938.

Remarks.- Records fair. Gage read once daily during low-water periods, twice daily at other times. No diversion above station; some regulation at low flows caused by log ponds.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	86	1,500	2,180	1,010	1,500	576	280	127	71	31	30
2	33	84	1,200	1,970	1,100	1,420	526	243	122	66	31	30
3	34	74	977	1,850	1,120	1,570	496	241	116	62	a30	35
4	38	74	863	1,870	977	1,340	464	246	112	58	28	31
5	35	99	883	3,690	921	1,200	445	231	114	56	32	28
6	34	114	956	2,640	1,820	1,200	419	222	125	54	28	27
7	34	129	2,100	2,680	2,360	1,090	395	212	118	52	26	23
8	34	101	1,650	2,920	1,760	977	416	203	110	87	28	21
9	34	253	1,170	2,220	1,450	883	499	199	103	92	26	22
10	34	411	1,120	1,910	1,300	860	559	194	101	68	26	23
11	34	596	980	1,520	1,140	1,070	562	181	96	59	24	23
12	34	713	651	1,290	995	1,690	526	176	92	58	26	22
13	35	1,010	730	1,120	689	3,590	488	174	92	57	28	22
14	35	713	652	969	820	2,470	458	168	125	56	27	23
15	35	442	582	672	790	2,160	411	166	120	54	26	34
16	36	1,080	551	773	762	1,850	398	162	101	52	28	62
17	41	1,210	501	699	739	1,800	408	162	99	46	27	50
18	36	1,210	a470	646	705	1,740	419	157	91	42	26	37
19	37	3,390	432	576	680	1,500	367	149	82	40	24	32
20	46	1,640	411	554	677	1,240	380	145	76	38	20	30
21	49	1,020	472	534	680	1,090	342	141	68	35	20	27
22	a52	716	429	1,690	666	1,000	316	145	70	33	20	28
23	57	610	480	1,560	632	680	296	141	87	32	20	27
24	48	a610	822	2,340	744	860	289	139	92	31	21	26
25	44	683	733	3,020	846	767	308	139	87	28	22	26
26	41	936	918	2,030	773	699	326	181	82	28	22	26
27	42	3,150	1,180	1,530	1,550	683	284	162	77	38	23	26
28	49	4,160	6,490	1,310	1,940	883	263	179	87	34	22	26
29	a70	3,090	6,820	1,240	-	802	352	162	84	31	26	28
30	105	2,110	4,470	1,070	-	741	287	143	77	34	36	27
31	98	-	3,030	947	-	657	-	131	-	36	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,368	105	33	44.1	0.245	0.28	2,710
November	30,514	4,160	74	1,017	5.65	6.30	60,520
December	44,423	6,820	411	1,433	7.96	9.18	88,110
Calendar year 1945	238,179	6,820	26	653	3.63	49.19	472,400
January	50,440	3,690	534	1,627	9.04	10.42	100,000
February	29,848	2,360	632	1,066	5.92	6.17	59,200
March	40,012	3,590	657	1,291	7.17	8.27	79,360
April	12,293	576	263	410	2.28	2.54	24,380
May	5,556	260	131	179	.994	1.15	11,020
June	2,931	127	88	97.7	.543	.61	5,810
July	1,528	92	28	49.3	.274	.32	3,030
August	806	36	20	26.0	.144	.17	1,600
September	890	82	21	29.7	.165	.18	1,770
Water year 1945-46	220,609	6,820	20	604	3.36	45.59	437,500

a No gage-height record; discharge computed on basis of records for McKenzie River near Vida and Blue River near Blue River.

Long Tom River near Noti, Oreg.

Location.- Water-stage recorder, lat. 44°03', long. 123°26', in sec. 33, T. 17 S., R. 6 W., an eighth of a mile upstream from railroad bridge, 1 mile downstream from Noti Creek, and 1½ miles southeast of Noti. Datum of gage is 388.76 feet above mean sea level (levels by U. S. Weather Bureau).

Drainage area.- 88 square miles.

Records available.- October 1935 to September 1946.

Average discharge.- 11 years, 215 second-feet.

Extremes.- Maximum discharge during year, 4,490 second-feet Dec. 29 (gage height, 18.29 feet); minimum, 13 second-feet Sept. 10, 14.
1935-46: Maximum discharge, that of Dec. 29, 1945; minimum observed, 7 second-feet Sept. 25-27, 1939 (gage height, 0.66 foot).

Remarks.- Records excellent. No diversion above station; slight diurnal fluctuation caused by operation of log pond above Noti.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29

0.7	16	2.3	158	8.0	845
.9	27	3.0	236	10.0	1,095
1.1	43	4.0	356	12.4	1,480
1.4	67	5.0	483	15.0	2,190
1.8	104	6.5	669	18.0	4,130

Dec. 30 to Sept. 30

0.7	16	1.8	99	5.0	465
.9	26	2.3	151	6.5	645
1.1	39	3.0	228	8.0	830
1.4	62	4.0	345		

Note.- Same as preceding table above 10.0 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	31	626	881	470	441	263	121	59	41	22	16
2	16	24	444	808	543	418	244	116	56	38	21	16
3	17	21	380	830	615	501	232	111	58	37	20	16
4	18	20	397	996	542	471	220	108	58	34	19	16
5	15	20	508	1,600	525	419	210	104	53	33	19	16
6	16	18	637	1,370	1,290	370	198	101	59	33	19	16
7	16	38	1,120	1,160	1,830	357	184	98	59	32	19	15
8	17	37	1,060	1,270	1,230	313	202	106	56	37	19	15
9	16	49	772	982	921	290	247	118	55	46	18	14
10	17	91	584	786	759	278	299	92	54	38	18	13
11	16	134	458	641	651	267	269	86	52	34	17	14
12	15	166	363	544	559	586	252	86	51	33	17	14
13	20	151	312	h494	495	1,140	220	85	50	32	17	14
14	20	82	270	h441	448	763	207	84	55	31	17	13
15	18	80	243	h393	410	747	192	84	56	31	17	22
16	17	265	225	351	375	778	181	81	52	31	16	51
17	17	337	212	325	351	671	172	78	50	30	16	33
18	17	418	190	304	327	568	164	74	47	28	16	22
19	17	825	180	281	307	500	159	71	43	26	16	19
20	17	457	173	267	290	430	160	66	39	25	15	18
21	19	287	196	265	286	397	152	66	40	24	15	17
22	22	187	209	782	253	368	144	66	40	24	15	17
23	22	145	303	798	243	358	136	76	42	24	15	16
24	20	123	791	888	251	371	133	71	44	23	15	16
25	19	178	652	1,180	287	338	129	70	45	22	14	16
26	18	483	558	864	263	305	158	81	43	21	15	16
27	19	1,460	632	664	448	311	122	81	42	22	15	15
28	20	2,220	2,360	577	530	311	117	74	44	23	14	15
29	24	1,480	3,610	566	-	320	124	69	49	23	16	15
30	35	886	1,960	527	-	284	124	63	45	23	16	16
31	38	-	1,220	475	-	280	-	62	-	23	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	598	38	15	19.2	0.218	0.25	1,180
November	10,693	2,220	18	356	4.05	4.52	21,210
December	21,843	3,610	173	698	7.93	9.15	42,930
Calendar year 1945	94,114	3,610	15	258	2.93	39.76	186,700
January	22,310	1,800	265	720	8.18	9.43	44,250
February	15,497	1,830	243	553	6.28	6.55	30,740
March	13,951	1,140	267	450	5.11	5.90	27,670
April	5,614	299	117	187	2.12	2.37	11,140
May	2,649	121	62	85.5	.972	1.12	5,250
June	1,492	59	39	49.7	.565	.63	2,960
July	922	46	21	29.7	.337	.39	1,830
August	524	22	14	16.9	.192	.22	1,040
September	532	51	13	17.7	.201	.22	1,060
Water year 1945-46	96,423	3,610	13	264	3.00	40.75	191,300

Peak discharge.- Dec. 29 (2 a.m.) 4,490 sec.-ft.; Jan. 5 (6 to 7 p.m.) 1,780 sec.-ft.; Feb. 7 (4 a.m.) 2,040 sec.-ft.
h Computed from staff-gage reading.

Fern Ridge Reservoir near Elmira, Oreg.

Location.- Water-stage recorder, lat. 44°07'18", long. 123°17'56", near center of sec. 4, T. 17 S., R. 5 W., in control house at spillway section of dam across Long Tom River and Coyote Creek, 4½ miles northeast of Elmira. Datum of gage is at mean sea level (levels by Corps of Engineers, War Department).

Drainage area.- 252 square miles.

Records available.- October 1941 to September 1946.

Extremes.- Maximum contents during year, 91,720 acre-feet June 14 (elevation, 372.45 feet); minimum, 5,890 acre-feet Dec. 14 (elevation, 352.22 feet).
1941-45: Maximum contents, 105,400 acre-feet Jan. 1, 1943 (elevation, 373.74 feet); minimum since first filling in 1942, 3,220 acre-feet Nov. 29, Dec. 11, 12, 17, 1943, Jan. 12, 1944 (elevation, 349.95 feet).

Remarks.- Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1941 by Corps of Engineers, War Department; storage began Nov. 13, 1941. Capacity, 101,200 acre-feet between elevation 340 feet (sill of outlet gate) and 373.5 feet (maximum operating pool level); dead storage, 23 acre-feet below elevation 340 feet. Reservoir used for flood control and improvement of navigation. Daily contents computed from elevations at 12 p.m. Capacity table computed by Geological Survey on basis of areas furnished by Corps of Engineers, War Department.

Cooperation.- Water-stage recorder inspected by employees of Corps of Engineers, War Department.

Contents, in acre-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80,960	12,830	26,590	50,020	8,860	38,770	72,130	88,510	91,450	90,930	86,810	81,850
2	79,210	11,080	23,820	48,150	9,860	39,730	73,090	88,680	91,450	90,930	86,640	81,610
3	77,260	9,410	20,210	46,080	10,870	40,800	73,910	89,020	91,360	90,750	86,560	81,520
4	74,960	8,210	16,860	46,180	11,880	41,950	74,740	89,200	91,360	90,750	86,390	81,520
5	72,500	7,590	13,570	49,690	13,000	43,030	75,490	89,200	91,540	90,580	86,310	81,360
6	69,380	7,450	11,440	52,470	15,540	43,530	76,180	89,370	91,450	90,410	85,720	80,960
7	66,150	7,330	11,860	54,710	19,360	44,690	76,950	89,460	91,540	90,320	85,890	80,800
8	62,770	7,000	12,260	55,190	20,180	45,920	77,800	89,540	91,450	90,490	85,720	80,720
9	59,460	6,980	11,120	53,870	18,670	47,190	78,820	89,710	91,450	90,410	85,550	80,640
10	56,280	7,010	8,800	51,490	17,670	48,320	79,760	89,800	91,450	90,320	85,380	80,480
11	52,760	7,000	7,090	48,480	18,970	49,470	80,640	89,800	91,360	90,230	85,130	80,320
12	49,360	7,130	6,120	44,630	19,930	51,780	81,280	89,800	91,360	90,060	85,130	80,160
13	46,030	6,940	5,930	40,340	20,560	53,640	81,850	89,890	91,540	89,970	84,970	79,840
14	42,680	6,930	6,010	55,930	21,440	53,990	82,420	89,970	91,540	89,800	84,720	80,080
15	39,500	7,240	6,200	31,320	22,680	53,930	83,070	90,060	91,540	89,630	84,550	80,720
16	36,830	7,680	6,340	26,350	23,680	54,710	83,480	90,150	91,540	89,460	84,390	80,960
17	34,560	7,840	6,370	21,260	24,610	56,040	84,060	90,230	91,450	89,280	84,220	80,880
18	32,860	8,370	6,410	16,060	25,680	56,580	84,470	90,320	91,360	89,110	84,140	80,880
19	31,320	8,370	6,460	11,360	26,760	57,820	84,880	90,410	91,450	89,110	83,970	80,800
20	29,760	8,180	6,740	8,020	27,850	59,010	85,300	90,320	91,280	89,110	83,810	79,600
21	28,300	7,380	7,130	6,380	28,900	60,160	85,630	90,410	91,190	88,770	83,640	77,100
22	26,720	6,910	7,040	6,340	29,870	61,460	85,970	90,410	91,100	88,680	83,560	74,510
23	25,130	6,870	7,280	6,770	30,790	62,640	86,390	90,580	91,190	88,510	83,150	72,570
24	23,590	6,870	7,590	7,470	31,930	63,440	86,730	90,580	91,100	88,250	82,820	71,250
25	21,980	7,090	7,720	8,490	33,020	63,980	86,980	90,930	91,100	88,080	82,740	67,680
26	20,700	7,700	7,500	8,260	34,270	65,060	87,320	91,280	90,930	87,910	82,660	63,980
27	19,640	12,590	7,470	7,420	36,190	66,290	87,490	91,450	90,840	87,830	82,500	60,350
28	18,670	21,800	20,390	6,790	37,700	67,820	87,740	91,360	91,100	87,660	82,420	56,770
29	17,700	27,510	41,180	7,090	-	68,670	88,080	91,360	91,100	87,400	82,250	53,170
30	16,180	28,300	49,580	7,280	-	69,950	88,250	91,450	91,020	87,230	82,010	49,800
31	14,490	-	51,320	7,860	-	71,110	-	91,450	-	87,060	81,850	-

Monthly elevation and contents, water year October 1945 to September 1946

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	371.38	82,660	-
Oct. 31	356.99	14,490	-68,170
Nov. 30	361.73	28,300	+13,810
Dec. 31	368.82	51,320	+23,020
Calendar year 1945	-	-	+43,840
Jan. 31	353.57	7,860	-43,460
Feb. 28	364.12	37,700	+29,840
Mar. 31	369.88	71,110	+33,410
Apr. 30	372.05	88,250	+17,140
May 31	372.42	91,450	+3,200
June 30	372.37	91,020	-430
July 31	371.91	87,060	-3,960
Aug. 31	371.28	81,850	-5,210
Sept.30	366.55	49,800	-32,050
Water year 1945-46	-	-	-32,860

† Elevation at 12 p.m.

Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.

Location.- Water-stage recorder and masonry control, lat. 44°07'25", long. 123°18'00", in NW¼ sec. 4, T. 17 S., R. 5 W., in canalized river channel 1,000 feet downstream from Fern Ridge Dam, which impounds runoff of Long Tom River and Coyote Creek, and 2½ miles south of Smithfield. Datum of gage is 332.00 feet above mean sea level, datum of 1929 (surveys by Corps of Engineers, War Department).

Drainage area.- 252 square miles.

Records available.- October 1943 to September 1946. August 1939 to September 1943 at site 2½ miles downstream, below Coyote Creek.

Extremes (regulated), not including diversion to Coyote Creek.- Maximum discharge during year, 3,090 second-feet Feb. 8 (gage height, 6.22 feet); minimum, 2 second-feet Feb. 21. 1943-46: Maximum, that of Feb. 8, 1946; no flow part of June 11, 12, 1944.

Remarks.- Records of flow in river channel excellent except those below 50 second-feet, which are good; records of diversion to Coyote Creek poor. A few small diversions above station; several second-feet diverted around station to Coyote Creek channel through 24-inch concrete pipe 600 feet long, several hundred feet upstream, record of which is based on weir measurements at intake and stage at recorder and on Long Tom River below Fern Ridge Dam. Fern Ridge Dam, 1,000 feet above station, was completed in 1941, and has regulated flow since Nov. 13, 1941 (see preceding page).

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.9	2.5	1.6	91	3.5	905
1.0	7	1.8	137	4.0	1,240
1.1	15	2.0	192	4.6	1,690
1.2	27	2.3	300	5.3	2,265
1.3	40	2.6	425	6.2	3,070
1.4	55	3.0	615		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	803	827	2,500	2,790	520	585	23	28	26	25	27	26
2	845	809	2,650	2,810	658	708	23	28	27	25	26	26
3	887	785	2,560	2,840	702	737	23	28	27	25	26	25
4	1,050	590	2,560	2,820	575	632	23	28	26	25	26	25
5	1,190	324	2,540	2,170	664	698	25	28	25	25	27	25
6	1,410	147	2,550	2,300	1,490	664	25	28	25	25	26	138
7	1,560	115	2,330	2,400	2,130	298	25	28	23	25	27	30
8	1,580	189	2,520	2,820	2,710	96	25	28	23	26	27	30
9	1,560	276	2,610	3,010	2,840	23	25	28	25	28	27	28
10	1,550	336	2,570	2,980	2,360	90	23	28	25	30	26	27
11	1,600	292	1,980	2,970	862	106	22	28	25	28	26	27
12	1,610	292	1,310	3,000	720	880	23	28	23	27	28	27
13	1,590	320	821	2,970	720	2,050	25	28	23	27	27	150
14	1,560	219	560	2,950	438	2,380	31	28	23	27	27	30
15	1,540	175	452	2,950	231	2,160	31	28	23	27	65	30
16	1,260	365	452	2,960	231	1,470	31	28	23	27	30	30
17	1,020	545	434	2,930	195	1,220	31	28	23	27	28	30
18	887	977	402	2,920	82	1,160	31	28	23	27	27	30
19	785	1,380	336	2,700	43	681	30	28	23	28	27	28
20	785	1,400	280	1,990	25	484	30	28	23	28	27	478
21	779	1,310	368	1,330	19	305	28	27	23	a28	26	1,140
22	767	801	506	1,270	22	211	28	27	25	a28	26	1,250
23	761	416	686	1,440	22	208	28	26	25	a28	138	873
24	749	380	918	1,860	20	391	28	26	25	30	27	533
25	737	614	1,260	1,990	22	452	28	26	25	31	26	1,670
26	654	1,190	1,430	2,200	25	154	28	26	25	30	25	1,680
27	530	1,600	1,560	1,990	243	27	28	27	25	28	25	1,670
28	525	1,230	1,210	1,560	515	105	28	27	25	28	25	1,630
29	580	1,530	575	1,160	-	211	28	26	25	27	25	1,630
30	803	2,140	876	1,090	-	148	28	26	25	26	136	1,610
31	845	-	2,140	807	-	23	-	26	-	28	27	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Diversion to Coyote Creek channel (acre-feet)	Adjusted for diversion: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Runoff in inches
October	1,610	525	1,058	65,060	631	65,690	1,068	-	-
November	2,140	115	719	42,790	555	43,340	728	-	-
December	2,650	280	1,418	87,170	645	87,820	1,428	-	-
Calendar year 1945	2,800	13	526	381,200	5,256	386,400	534	2.12	28.75
January	3,010	807	2,322	142,800	706	143,500	2,334	-	-
February	2,840	19	682	37,850	464	38,310	690	-	-
March	2,380	23	624	38,390	532	38,920	633	-	-
April	31	22	26.8	1,600	298	1,900	31.9	-	-
May	28	26	27.4	1,690	307	2,000	32.5	-	-
June	27	23	24.4	1,450	298	1,750	29.4	-	-
July	31	25	27.2	1,670	307	1,980	32.2	-	-
August	138	25	34.9	2,150	317	2,470	40.2	-	-
September	1,680	25	498	29,610	424	30,030	505	-	-
Water year 1945-46	3,010	19	625	425,200	5,480	457,700	632	2.51	34.06

a No gage-height record; discharge computed on basis of record of release from reservoir.

Long Tom River at Monroe, Oreg.

Location.- Water-stage recorder and concrete control, lat. 44°18'50", long. 123°17'45", in NE¼ sec. 33, T. 14 S., R. 5 W., in canalized river channel at Monroe, 800 feet upstream from a concrete drop structure and just downstream from Shafer Creek. Datum of gage is 270.00 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).

Drainage area.- 391 square miles.

Records available.- November 1920 to September 1946 (1925-27 incomplete).

Average discharge.- 23 years (1921-25, 1927-46), 700 second-feet.

Extremes.- Maximum discharge during year, 6,040 second-feet Dec. 28 (gage height, 8.54 feet); minimum, 27 second-feet Aug. 6, 7 (gage height, 4.16 feet).
1920-46: Maximum discharge, 19,300 second-feet Jan. 2, 1943 (gage height, 17.14 feet, datum then in use, from graph based on gage readings), includes some overflow from Willamette River near Junction City; no flow Oct. 20-22, 1944 (water filling pool at gage); minimum observed prior to regulation of flow, 7 second-feet Sept. 29, Oct. 1, 1939.

Remarks.- Records excellent except those below 100 second-feet, which are good. A few small diversions above station. Flow regulated by Fern Ridge Reservoir beginning Nov. 13, 1941 (see p. 128). In 1943 and 1944 river channel was improved from outlet of Fern Ridge Reservoir to a point below Monroe.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau. Water-stage recorder inspected by employee of Corps of Engineers, War Department.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	790	850	3,280	3,870	1,020	1,230	260	88	57	40	35	35
2	850	830	3,210	3,890	1,080	1,210	232	84	53	40	32	37
3	840	810	3,060	3,870	1,350	1,530	210	80	53	37	30	35
4	1,060	692	3,110	4,440	1,080	1,320	200	80	53	35	30	32
5	1,140	404	3,190	4,600	1,140	1,200	190	76	50	35	30	32
6	1,370	216	3,500	4,050	3,170	1,280	174	72	50	40	30	74
7	1,550	97	3,770	4,200	4,550	820	164	72	46	37	30	97
8	1,620	184	3,890	4,410	4,410	498	169	76	40	43	30	35
9	1,600	238	3,700	4,300	3,930	325	200	76	40	40	30	35
10	1,590	358	3,290	3,870	3,450	307	248	72	50	43	30	32
11	1,610	370	2,760	3,680	1,750	418	226	68	43	40	30	32
12	1,650	325	1,930	3,530	1,310	1,700	200	64	40	37	32	32
13	1,640	370	1,310	3,460	1,220	3,890	190	64	40	37	32	83
14	1,620	301	910	3,400	1,010	3,990	174	60	43	37	32	101
15	1,600	216	674	3,330	594	3,720	159	60	43	35	32	46
16	1,470	338	656	3,310	535	2,800	150	60	40	35	64	60
17	1,060	701	656	3,280	520	2,200	141	57	40	35	37	46
18	965	1,080	603	3,240	377	2,190	131	57	43	35	35	43
19	800	2,080	520	3,110	313	1,480	127	53	43	37	32	37
20	800	1,990	468	2,510	254	1,100	127	53	40	37	32	134
21	790	1,850	586	1,800	265	780	122	53	37	35	32	1,120
22	780	1,230	830	2,150	271	594	118	53	37	32	32	1,260
23	770	612	1,180	2,350	260	552	113	57	40	32	86	1,260
24	760	490	1,810	3,090	277	665	105	57	40	32	92	188
25	750	710	2,030	3,460	338	860	101	60	43	32	32	1,580
26	710	1,700	2,200	3,360	332	560	97	68	46	37	30	1,760
27	544	3,790	2,420	2,880	710	344	92	76	43	37	32	1,750
28	528	4,440	4,990	2,320	1,230	377	92	68	46	35	32	1,720
29	535	3,480	5,560	2,030	-	603	92	64	43	32	32	1,710
30	750	3,410	3,970	1,800	-	578	88	60	43	32	76	1,700
31	870		3,740	1,470	-	332	-	64	-	32	97	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	33,412	1,650	528	1,078	-	-	66,270
November	34,162	4,440	97	1,139	-	-	67,760
December	73,803	5,560	468	2,381	-	-	146,400
Calendar year 1945	300,535	5,560	19	823	2.10	28.59	596,100
January	101,060	4,600	1,470	3,260	-	-	200,400
February	36,746	4,550	254	1,312	-	-	72,880
March	39,463	3,990	307	1,273	-	-	78,270
April	4,692	260	88	156	-	-	9,310
May	2,052	88	53	66.2	-	-	4,070
June	1,325	57	37	44.2	-	-	2,630
July	1,123	43	32	36.2	-	-	2,230
August	1,238	97	30	39.9	-	-	2,460
September	15,106	1,760	32	504	-	-	29,960
Water year 1945-46	344,182	5,560	30	943	2.41	32.74	682,600

Coyote Creek near Crow, Oreg.

Location.- Water-stage recorder and concrete control, lat. 44°01'19", long. 123°15'17", in NE¼ sec. 11, T. 18 S., R. 5 W., just upstream from backwater of Fern Ridge Reservoir, 1 mile downstream from Spencer Creek, and 5 miles northeast of Crow. Datum of gage is 374.0 feet above mean sea level (Corps of Engineers, War Department, bench mark).

Drainage area.- 94 square miles.

Records available.- June 1940 to September 1946.

Extremes.- Maximum discharge during year, 9,260 second-feet Dec. 28 (gage height, 14.13 feet), from rating curve extended above 4,700 second-feet; practically no flow Aug. 22. 1940-46: Maximum discharge, that of Dec. 28, 1945; no flow at times in August and September 1940.

Remarks.- Records fair except those for Oct. 1 to Nov. 10, June 1 to Sept. 30, which are poor.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Sept. 24-30)

0.3	0.3	0.8	17	2.7	97	8.0	548
.4	1.1	1.0	30	3.3	128	9.5	880
.5	2.5	1.3	44	4.0	170	10.5	1,320
.6	5.0	1.7	60	5.0	239	11.5	2,210
.7	10	2.1	73	6.5	365	12.5	4,150

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	5.5	692	740	262	411	153	35	14	6.6	1.2	0.2
2	.9	4.1	444	688	277	360	134	32	13	6.0	1.2	.2
3	.9	3.3	311	682	300	538	120	29	12	5.5	1.2	.4
4	.8	2.5	273	932	246	474	110	26	13	5.0	1.0	.4
5	.7	2.3	407	1,710	233	402	100	25	9.7	4.7	.8	.3
6	.8	2.2	484	1,280	895	350	93	24	12	4.4	.7	.3
7	.6	2.7	1,090	1,160	1,430	276	86	23	12	4.1	.5	.3
8	.5	4.4	1,200	1,140	1,010	226	89	22	11	4.4	.5	.3
9	.6	6.6	873	880	720	194	100	22	10	4.7	.5	.4
10	.6	12	621	686	535	181	106	21	9.7	5.5	.5	.5
11	.5	34	427	487	425	174	95	20	9.2	5.0	.6	.4
12	.5	43	306	360	320	605	85	19	8.1	4.7	.4	.4
13	.5	57	228	281	255	1,540	78	18	9.2	4.1	.3	.3
14	.6	50	178	236	216	1,070	73	18	9.7	4.1	.3	.4
15	.7	34	148	200	186	922	69	17	11	4.1	.3	.9
16	.7	73	137	171	164	768	66	17	11	3.6	.4	3.8
17	.6	199	127	149	148	676	63	17	10	3.3	.3	5.5
18	.7	276	112	134	134	598	60	16	9.7	3.1	.3	6.6
19	.7	666	100	120	120	457	58	16	8.6	2.9	.3	5.0
20	.8	726	94	111	120	360	56	15	7.1	2.7	.2	4.4
21	1.1	444	136	106	118	282	54	14	6.6	2.3	.1	4.1
22	1.2	230	146	350	114	236	49	15	6.0	2.2	.1	3.8
23	1.7	152	164	459	105	200	46	16	6.0	1.9	.2	3.6
24	2.2	118	359	696	112	198	44	16	6.6	1.7	.2	3.3
25	2.0	171	403	990	162	180	42	16	7.6	1.5	.2	3.1
26	1.6	445	474	803	142	154	42	23	7.6	1.3	.2	2.7
27	1.6	1,560	524	552	385	160	41	28	7.1	1.3	.1	2.5
28	1.6	2,290	4,530	389	506	184	38	22	6.6	1.3	.1	2.3
29	1.9	1,460	3,900	376	-	236	38	18	6.6	1.3	.2	2.0
30	3.3	1,030	1,440	365	-	206	40	16	6.6	1.5	.2	2.0
31	4.7	-	1,010	305	-	179	-	15	-	1.5	.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	36.5	4.7	0.5	1.18	0.013	0.01	72
November	10,103.6	2,290	2.2	337	3.59	4.00	20,040
December	21,338	4,530	94	688	7.32	8.44	42,320
Calendar year 1945	75,265.0	4,530	.3	206	2.19	29.76	149,300
January	17,518	1,710	106	565	6.01	6.93	34,750
February	9,640	1,430	105	344	3.66	3.81	19,120
March	12,797	1,540	154	413	4.39	5.06	25,380
April	2,228	153	38	74.3	.790	.88	4,420
May	631	35	14	20.4	.217	.25	1,250
June	277.3	14	6.0	9.24	.098	.11	550
July	106.3	6.6	1.3	3.43	.036	.04	211
August	13.3	1.2	.1	.43	.0046	.005	26
September	60.4	6.6	.2	2.01	.021	.02	120
Watsr year 1945-46	74,749.4	4,530	.1	205	2.18	29.58	148,300

Peak discharge.- Nov. 28 (2:30 a.m.) 2,630 sec.-ft.; Dec. 28 (7:30 p.m.) 9,260 sec.-ft.; Jan. 5 (12 m. to 4 p.m.) 1,940 sec.-ft.; Mar. 13 (11:30 a.m.) 1,780 sec.-ft.

Marys River near Philomath, Oreg.

Location.- Wire-weight gage, lat. 44°31'35", long. 123°20'00", in SW¼ sec. 18, T. 12 S., R. 5 W., at bridge 2 miles upstream from Muddy Creek and 2 miles southeast of Philomath.

Drainage area.- 155 square miles (including drainage area of Evergreen Creek above road crossing 1½ miles south of station).

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 5,420 second-feet Nov. 27 (gage height, 20.22 feet, observed at peak); minimum observed, 8 second-feet Sept. 11-13.
1940-46: Maximum discharge, 7,720 second-feet Jan. 1, 1943 (gage height, 20.46 feet, from graph based on gage readings); minimum observed, 6 second-feet Sept. 12, 13, 1944.

Remarks.- Records fair; they include flow of Evergreen Creek at road crossing 1½ miles south, with which overflow from Marys River may at times be mingled. Gage read twice daily Oct. 1 to Apr. 30, once daily thereafter. City of Corvallis diverts municipal supply from headwaters; other small diversions above station for irrigation. No regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 18-26, Sept. 8-30)

Oct. 1 to Nov. 26						Nov. 27 to Sept. 30					
2.6	8	4.3	161	9.0	915	2.7	8	4.3	154	9.5	1,040
2.8	18	5.0	250	10.0	1,100	2.9	19	5.0	243	12.0	1,540
3.0	33	6.0	395	12.0	1,500	3.1	33	6.0	395	15.0	2,300
3.3	58	7.0	560			3.3	49	7.0	570	18.0	3,680
3.7	96	8.0	735			3.7	87	8.0	755	20.2	5,400

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	31	1,380	1,580	1,060	922	381	167	70	54	22	15
2	16	31	1,020	1,960	1,440	877	359	155	66	45	20	14
3	18	34	1,100	1,750	1,510	937	338	149	65	42	20	15
4	11	42	1,150	2,380	1,320	869	324	142	65	38	19	16
5	14	35	1,400	2,860	g1,400	802	306	136	63	35	18	15
6	15	35	1,610	2,300	g4,170	742	285	131	62	33	20	17
7	13	50	2,200	2,280	3,600	681	271	132	66	31	18	18
8	14	76	1,940	2,350	2,370	611	291	131	65	34	18	16
9	10	108	1,520	1,860	1,750	563	333	127	61	52	24	13
10	13	173	1,240	1,510	1,450	538	436	123	59	61	14	12
11	14	221	1,000	1,180	1,230	503	426	116	55	45	15	9
12	15	360	823	970	1,020	1,260	395	110	54	39	17	8
13	17	377	675	816	877	1,900	362	106	52	35	17	8
14	18	261	592	706	774	1,540	332	107	60	34	17	9
15	16	257	500	615	683	1,890	304	104	77	32	15	9
16	13	427	456	548	613	1,610	288	101	75	32	17	39
17	16	567	422	491	570	1,440	272	94	63	31	15	47
18	24	731	388	454	520	1,190	260	83	57	30	15	25
19	13	1,230	344	420	475	992	247	84	51	26	16	17
20	17	805	330	388	443	839	249	82	45	25	14	15
21	18	528	429	367	426	721	232	82	42	24	14	12
22	21	356	424	1,180	404	653	219	81	40	22	12	12
23	21	264	964	1,150	385	617	206	87	40	21	12	10
24	22	218	1,410	1,940	429	649	195	87	44	20	14	12
25	22	453	1,240	2,350	534	613	190	80	46	19	13	12
26	22	1,480	1,260	1,780	487	556	186	87	45	20	14	10
27	27	5,280	1,220	1,400	730	548	178	97	43	20	14	10
28	21	4,370	2,240	1,160	983	507	172	89	43	18	12	9
29	26	2,710	4,080	1,100	-	498	183	83	67	19	12	9
30	38	1,940	3,200	991	-	448	185	79	62	20	12	10
31	33	-	2,130	901	-	412	-	74	-	22	14	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	574	38	10	18.5	0.119	0.14	1,140
November	23,450	5,280	31	782	5.05	5.63	46,510
December	38,687	4,080	330	1,248	8.05	9.28	76,730
Calendar year 1945	184,745	5,280	10	506	3.26	44.33	366,400
January	41,737	2,860	367	1,346	8.68	10.01	82,780
February	31,653	4,170	385	1,130	7.29	7.59	62,780
March	26,928	1,900	412	869	5.61	6.46	53,410
April	8,405	436	172	280	1.81	2.02	16,670
May	3,306	167	74	107	.690	.79	6,560
June	1,703	77	40	56.8	.366	.41	3,380
July	979	61	18	31.6	.204	.23	1,940
August	494	24	12	15.9	.103	.12	980
September	443	47	8	14.8	.095	.11	879
Water year 1945-46	178,359	5,280	8	489	3.15	42.79	353,800

g Computed from graph based on gage readings.

Rock Creek near Philomath, Oreg.

Location.- Water-stage recorder and concrete control, lat. 44°30'05", long. 123°26'20", in NE¼ sec. 29, T. 12 S., R. 6 W., 250 feet upstream from State Highway 34, a quarter of a mile upstream from mouth, and 4½ miles southwest of Philomath. Datum of gage is 354.16 feet above mean sea level, adjustment of 1929.

Records available.- October 1945 to September 1946.

Extremes.- Maximum discharge during year, 1,090 second-feet Nov. 27 (gage height, 4.80 feet); minimum, 0.4 second-foot Aug. 24, Sept. 10, 11.

Remarks.- Records excellent except those for periods of no gage-height record in February and March, which are fair, and those for Oct. 1-25, which are poor. Flow regulated by small storage reservoir operated by city of Corvallis; most of low-water flow diverted to Corvallis water-supply system.

Cooperation.- Water-stage recorder inspected by employee of city of Corvallis.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.0	0	1.0	4.3	2.2	116
.2	.1	1.2	7.7	2.4	164
.3	.2	1.4	13	2.7	246
.4	.3	1.6	25	3.0	340
.6	.8	1.8	45	3.5	520
.e	1.8	2.0	76		

Discharge, in second-fset, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0.8	1.7	137	162	121	a100	48	20	8.4	6.1	1.3	0.5
2	a.7	2.0	108	234	159	a105	45	19	8.4	5.1	1.7	.6
3	a.8	2.4	121	204	137	a110	43	18	8.4	4.9	1.7	.6
4	a.8	2.1	134	347	110	a100	41	18	7.3	4.5	.9	.6
5	a.7	2.0	182	333	254	87	38	17	6.6	4.0	.9	.6
6	a.7	2.9	252	240	678	82	36	17	6.6	3.7	1.0	1.4
7	a.7	4.6	252	288	327	73	35	16	6.4	3.7	.9	1.4
8	a.7	4.8	180	267	226	66	44	15	6.3	5.9	.8	1.5
9	a.7	21	139	195	174	62	49	15	6.3	7.7	.8	.6
10	a.7	41	114	152	152	59	68	14	5.9	4.9	1.0	.4
11	a.7	35	97	123	128	56	62	13	5.9	4.3	1.0	.4
12	a.7	87	82	103	a110	232	53	13	5.7	4.0	.8	.5
13	a.7	42	78	91	h95	198	46	13	5.7	3.6	.8	.5
14	a.7	29	64	80	a87	139	44	13	11	3.5	.9	.5
15	a.7	58	61	71	a80	234	40	12	8.6	3.5	.8	8.5
16	a.8	125	52	64	a74	182	36	12	6.6	3.3	.7	7.2
17	a.9	84	48	58	a74	152	34	9.0	6.1	3.2	.6	4.2
18	a1.0	200	43	56	a66	128	33	7.7	5.9	2.6	.6	3.0
19	a1.0	146	41	51	a63	108	33	9.8	5.6	1.7	.6	2.6
20	a.9	78	41	48	59	93	33	9.5	4.9	1.7	.6	2.2
21	a.9	49	59	62	a60	82	30	9.5	4.6	1.5	.6	2.0
22	a.9	37	64	162	a60	80	28	11	4.3	1.5	.6	1.8
23	a.9	30	214	118	a64	80	27	10	4.5	1.5	.5	1.7
24	a.9	31	214	295	a68	91	25	8.8	4.9	1.7	.4	1.2
25	a.9	108	159	234	a72	87	24	8.8	5.7	1.8	.5	.6
26	.9	440	172	162	a70	76	23	11	4.9	1.8	.5	1.0
27	.9	687	180	123	118	71	21	9.8	4.5	1.8	.5	.6
28	1.0	361	434	108	a130	64	20	9.3	8.3	1.7	.6	.6
29	1.7	252	392	103	-	62	26	8.6	14	1.2	.7	.6
30	2.5	193	273	95	-	58	22	8.2	7.9	1.7	.6	.7
31	2.0	-	201	97	-	52	-	7.9	-	1.4	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	28.9	2.5	0.7	0.93	57
November	3,156.5	687	1.7	105	6,260
December	4,588	434	41	148	9,100
Calendar year	-	-	-	-	-
January	4,726	347	48	152	9,370
February	3,816	678	59	136	7,570
March	3,169	234	52	102	6,290
April	1,107	68	20	36.9	2,200
May	383.9	20	7.7	12.4	761
June	200.2	14	4.3	6.67	397
July	99.5	7.7	1.2	3.21	197
August	24.4	1.7	.4	.79	48
September	48.6	8.5	.4	1.62	96
Water year 1945-46	21,348.0	687	.4	58.5	42,350

Peak discharge.- Nov. 27 (3 a.m.) 1,090 sec.-ft.; Dec. 28 (6 p.m.) 600 sec.-ft.; Jan. 4 (10 p.m.) 382 sec.-ft.; Jan. 24 (1 a.m.) 358 sec.-ft.; Feb. 6 (4 a.m.) 1,060 sec.-ft.

a No gage-height record; discharge computed on basis of weather records and records for Alsea River near Tidewater.

h Computed from staff-gage reading.

Calapooya River at Holley, Oreg.

Location.- Staff gage, lat. 44°21', long. 122°47', near line between secs. 14 and 15, T. 14 S., R. 1 W., a quarter of a mile southwest of Holley and 4 miles upstream from Brush Creek. Datum of gage is 527.20 feet above mean sea level, datum of 1929.

Drainage area.- 99 square miles.

Records available.- September 1935 to September 1946.

Average discharge.- 11 years, 392 second-feet.

Extremes.- Maximum discharge during year, 12,200 second-feet Dec. 28 (gage height, 14.1 feet, from floodmark), from rating curve extended above 5,300 second-feet by logarithmic plotting; minimum observed, 23 second-feet Oct. 15.
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 13 second-feet (regulated) Sept. 8, 1940.

Remarks.- Records good. Gage read once daily, oftener during periods of high water. No diversions above station; slight regulation at times during low-water periods by small dam upstream.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 10)

0.6	22	1.8	245	5.0	2,030
.8	39	2.1	355	6.2	2,970
1.0	63	2.4	475	7.5	4,080
1.2	95	2.8	660	9.0	5,520
1.4	137	3.3	920	11.0	7,800
1.6	187	4.0	1,335	12.0	9,100

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	59	1,100	1,280	529	1,160	435	280	135	86	42	30
2	27	75	860	1,280	680	1,090	403	266	135	81	41	35
3	27	130	760	1,200	592	1,000	363	284	126	76	39	37
4	27	74	720	1,350	520	870	339	298	115	72	40	32
5	26	83	770	2,650	484	770	315	270	109	69	38	30
6	25	111	1,390	1,820	1,890	892	304	239	137	68	38	32
7	25	93	1,920	1,910	1,320	805	280	227	117	66	38	30
8	24	78	1,310	1,660	920	720	315	209	107	64	37	29
9	24	90	931	1,220	810	660	339	198	97	115	36	28
10	24	574	870	1,000	700	640	435	195	93	80	35	28
11	24	493	785	838	610	610	592	190	88	72	34	27
12	24	926	695	730	529	2,330	565	187	86	69	34	26
13	24	760	588	635	475	2,350	529	182	85	64	35	26
14	24	520	529	583	459	1,480	475	171	111	64	34	26
15	23	740	467	538	498	1,600	451	159	144	62	34	34
16	24	1,230	435	484	542	1,220	443	154	126	60	34	81
17	28	1,010	411	435	520	1,260	443	161	137	59	33	62
18	25	1,930	399	427	556	1,110	484	171	117	56	33	44
19	24	2,190	371	403	529	920	459	161	105	55	32	36
20	30	1,160	347	387	556	785	403	156	97	53	31	32
21	28	800	387	363	556	710	379	147	88	50	30	30
22	46	660	435	2,010	565	660	339	137	85	49	30	29
23	42	592	435	1,220	520	610	304	142	86	48	29	28
24	34	542	882	2,210	592	601	315	128	88	47	29	28
25	29	826	725	1,920	810	547	371	139	115	44	30	28
26	28	1,680	1,030	1,240	690	529	411	171	99	44	29	27
27	28	4,720	1,200	904	1,670	565	343	169	90	47	28	26
28	35	3,430	8,970	800	1,500	538	308	201	88	43	28	26
29	35	2,360	5,060	700	-	620	301	236	113	42	29	26
30	51	1,500	2,440	601	-	556	315	184	97	44	35	25
31	72	-	1,640	529	-	484	-	159	-	44	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	935	72	23	30.2	0.305	0.35	1,850
November	29,436	4,720	59	981	9.91	11.06	58,390
December	38,862	8,970	347	1,254	12.7	14.60	77,080
Calendar year 1945	200,517	8,970	23	549	5.55	75.32	397,700
January	33,327	2,650	363	1,075	10.9	12.52	66,100
February	20,622	1,890	459	736	7.43	7.75	40,900
March	28,692	2,350	484	926	9.35	10.78	56,910
April	11,758	592	280	392	3.96	4.42	23,320
May	5,971	298	128	193	1.95	2.24	11,840
June	3,216	144	85	107	1.08	1.21	6,380
July	1,893	115	42	61.1	.617	.71	3,750
August	1,046	42	28	33.7	.340	.39	2,070
September	978	81	25	32.6	.329	.37	1,940
Water year 1945-46	176,736	8,970	23	484	4.89	66.40	350,500

Calapooya River at Albany, Oreg.

Location.- Wire-weight gage, lat. 44°37'15", long. 123°07'40", in NW¼ sec. 13, T. 11 S., R. 4 W., half a mile downstream from Oak Creek, 1½ miles southwest of Albany, and 3 miles upstream from mouth. Datum of gage is 180.37 feet above mean sea level (datum of 1929).

Drainage area.- 362 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge observed during year, 14,500 second-feet Dec. 30 (gage height, 25.0 feet, from graph based on gage readings, affected by backwater from Willamette River); minimum observed, 9.4 second-feet (regulated) Oct. 16; minimum daily, 15 second-feet Oct. 15.

1940-46: Maximum discharge 18,400 second-feet Jan. 2, 1943; maximum gage height, 25.5 feet Jan. 2, 1943, from graph based on gage readings, affected by backwater from Willamette River; minimum discharge observed, 8 second-feet (regulated) Sept. 12, Oct. 24, 1944; minimum daily, 12 second-feet Aug. 26, 1941, Sept. 11, 1944.

Remarks.- Records good except those for October and June through September, and those for periods of backwater, which are fair. Gage read twice daily, oftener at high stages. A few small diversions above station for irrigation. Diurnal fluctuation caused by ponds at flour mills near Shedd.

Rating tables, water year 1945-46, except periods of backwater from Willamette River (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 28					Nov. 29 to Sept. 30				
1.1	13	2.6	166	7.0	1,300	1.1	19	3.5	320	12.0	3,500
1.3	21	3.0	240	8.5	1,870	1.4	32	4.1	460	14.0	4,700
1.5	32	3.5	340	10.0	2,520	1.7	49	4.9	690	16.0	6,200
1.7	45	4.0	440	12.0	3,500	2.0	73	5.8	970	17.0	7,410
2.0	74	5.0	690			2.3	106	7.0	1,390	18.0	9,200
2.3	115	6.0	970			2.6	151	9.5	1,970	19.0	11,400
Note.- Same as following table above 12 feet.						3.0	222	10.0	2,570	20.0	14,000

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	40	4,060	c4,180	1,150	3,000	801	362	188	113	31	26
2	29	80	2,390	c3,320	1,200	2,230	699	338	170	100	38	20
3	32	79	1,670	3,120	1,410	2,530	624	316	156	95	35	24
4	31	133	1,450	3,110	1,170	2,280	579	322	149	86	50	26
5	29	117	1,610	3,760	991	1,620	522	316	137	78	25	37
6	28	90	1,630	4,920	3,000	1,520	485	298	130	76	32	35
7	27	96	2,470	c4,930	5,020	1,550	445	290	153	74	34	33
8	16	136	3,760	4,840	4,780	1,290	450	278	140	91	33	32
9	24	173	3,010	4,670	2,870	1,140	525	258	116	82	34	21
10	31	171	1,940	3,200	1,950	963	711	242	104	93	32	25
11	27	615	1,650	2,370	1,960	1,140	935	235	80	102	36	29
12	19	568	1,340	1,810	1,440	2,220	876	231	80	86	19	29
13	26	817	1,040	1,370	1,100	5,580	792	217	95	80	25	22
14	26	835	867	1,170	935	6,510	708	220	98	71	34	26
15	15	630	732	1,000	858	4,600	642	204	95	72	32	32
16	22	782	669	888	843	3,800	582	195	143	73	34	23
17	31	1,340	681	786	828	3,300	546	184	146	74	31	32
18	28	1,500	645	723	840	3,250	540	184	140	68	30	35
19	28	2,160	573	669	810	2,800	573	195	130	65	19	29
20	27	3,480	498	618	786	1,920	540	175	119	58	27	47
21	27	3,240	717	594	804	1,450	500	188	110	52	28	42
22	18	1,430	1,000	1,420	876	1,170	460	177	105	47	27	47
23	27	952	924	2,780	843	1,130	418	170	98	50	27	24
24	41	785	2,090	3,340	840	1,020	380	168	95	47	27	25
25	47	805	2,060	4,180	1,410	970	320	160	102	43	30	31
26	45	1,670	1,870	4,500	1,290	942	418	177	105	47	21	32
27	45	3,420	2,010	2,950	1,530	894	440	193	122	40	20	30
28	35	6,070	3,200	1,910	2,840	1,120	400	206	134	38	30	27
29	21	8,740	c9,150	1,740	-	1,420	352	227	74	32	28	27
30	41	6,170	c12,400	1,960	-	1,420	392	242	113	46	27	21
31	38	-	c6,310	1,450	-	970	-	206	-	48	26	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	903	47	15	29.1	0.080	0.09	1,790
November	17,124	8,740	40	1,571	4.34	4.84	93,470
December	74,416	12,400	498	2,401	6.63	7.65	147,600
Calendar year 1945	367,517	12,400	14	1,007	2.78	37.76	728,900
January	78,278	4,930	594	2,525	6.98	8.04	155,300
February	44,374	5,020	786	1,585	4.38	4.58	88,010
March	65,749	6,510	894	2,121	5.86	6.75	130,400
April	16,655	935	320	555	1.53	1.71	33,030
May	7,174	362	160	231	.638	.74	14,230
June	3,627	188	74	121	.334	.37	7,190
July	2,127	113	32	68.6	.190	.22	4,220
August	922	50	19	29.7	.082	.09	1,830
September	889	47	21	29.6	.082	.09	1,760
Water year 1945-46	342,238	12,400	15	938	2.59	35.15	678,800

c Backwater from Willamette River.

North Santiam River at Detroit, Oreg.

Location.- Water-stage recorder, lat. 44°43', long. 122°08', in NE¼ sec. 12, T. 10 S., R. 5 E., 1 mile east of Detroit, 2¼ miles upstream from Breitenbush River, and 2¼ miles downstream from Boulder Creek. Datum of gage is 1,475.68 feet above mean sea level, datum of 1929.
Drainage area.- 224 square miles.
Records available.- January 1907 to October 1909, October 1928 to September 1946. August 1910 to October 1913 at site above Boulder Creek (records not equivalent).
Average discharge.- 19 years (1907-8, 1928-46), 909 second-feet.
Extremes.- Maximum discharge during year, 20,300 second-feet Dec. 28 (gage height, 11.24 feet); minimum, 302 second-feet (regulated) Oct. 5 (gage height, 0.40 foot); minimum daily, 326 second-feet Oct. 13, 15, 18.
1907-9, 1910-11, 1928-46: Maximum discharge, that of Dec. 28, 1945; minimum, 254 second-feet Oct. 7, 1940 (gage height, 0.15 foot).
Remarks.- Records good. No diversion above station; slight diurnal fluctuation caused by power plant at Idanha.
Cooperation.- Water-stage recorder inspected by employees of U. S. Forest Service.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30			
0.5	321	2.7	1,370	6.5	6,050	0.6	380	2.7	1,480
.8	405	3.4	1,930	7.5	8,060	1.0	510	3.4	2,040
1.1	510	4.2	2,740	8.5	10,820	1.5	720	4.2	2,740
1.5	685	4.8	3,460	9.5	14,100	2.0	1,000		
2.0	945	5.6	4,580			Note.- Same as preceding table above 4.2 feet.			

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	343	379	1,410	2,800	1,060	1,580	946	1,440	1,580	1,000	554	464
2	340	492	1,190	2,580	1,010	1,460	898	1,520	1,660	988	550	464
3	340	422	1,090	2,330	940	1,350	856	1,790	1,640	952	546	470
4	338	379	1,170	2,630	886	1,230	838	2,000	1,550	898	542	467
5	333	402	1,200	2,710	940	1,160	826	1,890	1,480	862	534	486
6	333	392	1,510	2,170	1,260	1,200	805	1,780	1,520	832	526	467
7	331	379	1,580	2,290	1,100	1,160	800	1,730	1,380	805	522	458
8	331	367	1,290	1,980	982	1,120	826	1,630	1,430	856	518	452
9	328	412	1,120	1,720	928	1,110	832	1,590	1,350	886	514	446
10	328	472	1,030	1,560	886	1,120	856	1,710	1,260	820	514	440
11	328	450	934	1,370	838	1,120	922	1,700	1,240	810	510	440
12	328	522	852	1,250	790	1,370	976	1,680	1,270	780	498	437
13	326	506	790	1,150	770	1,380	1,030	1,660	1,400	760	494	437
14	328	564	735	1,070	740	1,260	1,070	1,570	1,580	720	490	434
15	326	730	705	1,010	735	1,300	1,140	1,500	1,540	685	486	464
16	331	725	676	952	725	1,190	1,250	1,590	1,440	662	498	518
17	331	680	680	916	730	1,190	1,410	1,780	1,350	650	490	474
18	326	795	676	892	730	1,140	1,720	1,900	1,330	638	486	446
19	333	830	644	862	720	1,090	1,720	1,900	1,360	638	490	434
20	338	680	636	832	705	1,050	1,620	1,920	1,400	638	490	431
21	335	595	730	856	730	1,040	1,480	1,750	1,390	642	490	428
22	370	554	810	1,590	735	1,060	1,370	1,780	1,310	630	486	425
23	351	546	874	1,560	735	1,040	1,340	1,630	1,190	618	482	419
24	338	577	1,050	2,980	810	1,020	1,510	1,550	1,120	606	478	419
25	331	765	1,040	2,430	892	982	1,880	1,610	1,160	594	478	416
26	328	1,400	1,130	1,940	880	1,010	2,070	2,030	1,040	590	474	410
27	328	4,780	1,560	1,640	1,660	1,170	1,820	2,010	976	578	470	407
28	333	3,720	13,000	1,470	1,790	1,180	1,630	1,970	1,070	570	467	407
29	345	2,500	10,800	1,320	-	1,130	1,640	1,820	1,070	566	486	404
30	383	1,780	5,390	1,180	-	1,050	1,540	1,620	994	562	486	404
31	373	-	3,690	1,110	-	1,000	-	1,580	-	558	474	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	10,455	383	326	337	1.50	1.74	20,740
November	27,795	4,780	367	926	4.13	4.61	55,130
December	59,992	13,000	636	1,935	8.64	9.96	119,000
Calendar year 1945	364,460	13,000	326	999	4.46	60.51	722,900
January	51,150	2,980	832	1,650	7.37	8.49	101,500
February	25,707	1,790	705	918	4.10	4.27	50,990
March	36,262	1,580	982	1,170	5.22	6.02	71,920
April	37,621	2,070	800	1,254	5.60	6.25	74,620
May	53,630	2,030	1,440	1,730	7.72	8.90	106,400
June	40,080	1,660	976	1,336	5.96	6.65	79,500
July	22,394	1,000	558	722	3.22	3.72	44,420
August	15,523	554	467	501	2.24	2.58	30,790
September	13,268	518	404	442	1.97	2.20	26,320
Water year 1945-46	393,877	13,000	326	1,079	4.82	65.39	781,300

Peak discharge.- Nov. 27 (2 p.m.) 5,630 sec.-ft.; Dec. 28 (5:30 p.m.) 20,300 sec.-ft.; Jan. 4 (11 p.m.) 2,990 sec.-ft.; Jan. 24 (11 a.m.) 3,620 sec.-ft.

North Santiam River above Mayflower Creek, near Detroit, Oreg.

Location.- Water-stage recorder, lat. 44°44', long. 122°15', in NW¼ sec. 7, T. 10 S., R. 5 E., 850 feet downstream from axis of Detroit dam site, 0.3 mile upstream from Mayflower Creek, and 5 miles west of Detroit. Datum of gage is 1,192.20 feet above mean sea level, datum of 1929.

Drainage area.- 438 square miles.

Records available.- October 1938 to September 1946.

Extremes.- Maximum discharge during year, 41,200 second-feet Dec. 28 (gage height, 18.20 feet), from rating curve extended above 13,000 second-feet by logarithmic plotting; minimum, 444 second-feet Oct. 15 (gage height, 3.01 feet).
1938-46: Maximum discharge, that of Dec. 28, 1945; minimum, 410 second-feet (regulated) Oct. 25, 1942 (gage height, 2.87 feet); minimum daily, 432 second-feet Sept. 1, 1940.

Remarks.- Records good. No diversion above station; slight diurnal fluctuation caused by power plant at Idanha.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27						Dec. 27 to Sept. 30					
3.0	440	5.0	1,900	8.5	8,300	3.7	510	6.0	2,780	10.5	13,200
3.4	620	5.7	2,780	9.5	10,800	4.2	880	6.8	4,120	12.5	19,300
3.8	850	6.5	4,020	10.5	13,500	4.7	1,290	7.8	6,100	14.5	26,300
4.4	1,300	7.5	6,000	11.3	15,700	5.3	1,860	9.0	9,040	15.5	30,100

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	488	670	3,230	6,630	2,390	4,190	1,990	2,810	2,800	1,780	840	664
2	488	1,150	2,640	6,340	2,210	3,690	1,900	3,000	3,020	1,780	848	657
3	484	969	2,380	5,770	2,000	3,340	1,800	3,760	2,970	1,690	824	678
4	484	766	2,750	6,780	1,850	2,940	1,750	4,440	2,700	1,590	808	664
5	480	796	3,020	7,850	1,830	2,680	1,740	3,990	2,530	1,510	800	713
6	476	778	4,610	5,580	3,230	2,990	1,700	3,580	2,610	1,450	792	699
7	472	712	4,720	6,030	2,710	2,880	1,680	3,470	2,330	1,420	784	664
8	468	665	3,310	5,200	2,280	2,670	1,740	3,210	2,420	1,520	768	650
9	464	796	2,650	4,170	2,050	2,640	1,760	3,040	2,350	1,670	744	636
10	464	1,120	2,280	3,520	1,900	2,750	1,830	3,310	2,150	1,480	744	622
11	456	997	2,020	3,040	1,750	2,710	2,280	3,310	2,100	1,460	736	622
12	460	1,320	1,760	2,670	1,650	3,620	2,460	3,280	2,140	1,380	736	615
13	456	1,350	1,590	2,570	1,550	3,450	2,580	3,230	2,440	1,350	728	601
14	452	1,600	1,460	2,230	1,520	3,040	2,670	2,960	2,770	1,270	720	615
15	448	2,210	1,370	2,090	1,520	3,210	2,740	2,740	2,750	1,190	720	699
16	456	2,180	1,300	1,930	1,530	2,860	3,020	3,000	2,530	1,160	720	888
17	464	1,880	1,340	1,830	1,570	2,800	3,450	3,480	2,330	1,120	706	792
18	456	2,450	1,330	1,820	1,620	2,720	4,370	3,760	2,250	1,100	692	692
19	464	2,480	1,260	1,810	1,570	2,530	4,260	3,760	2,390	1,100	692	657
20	480	1,830	1,230	1,770	1,520	2,470	3,810	3,760	2,490	1,110	692	629
21	480	1,420	1,500	1,830	1,590	2,460	3,360	3,260	2,420	1,100	692	622
22	600	1,250	1,790	4,920	1,670	2,540	a3,070	3,310	2,260	1,070	685	622
23	555	1,240	2,120	4,300	1,670	2,500	2,780	2,990	1,990	1,020	678	608
24	508	1,340	2,880	9,880	2,040	2,360	3,290	2,750	1,860	984	678	601
25	492	2,250	2,630	6,860	2,490	2,220	4,440	2,940	1,960	952	678	594
26	480	5,140	2,890	5,200	2,210	2,360	4,900	3,780	1,780	936	664	587
27	484	15,600	4,820	4,300	5,220	2,990	4,050	3,800	1,650	904	657	580
28	488	10,500	29,800	3,710	5,220	2,800	3,440	3,650	1,800	888	657	573
29	520	6,420	23,400	3,280	-	2,570	3,390	3,310	1,930	880	692	573
30	615	4,310	13,700	2,890	-	2,350	3,130	2,860	1,750	880	706	573
31	645	-	9,120	2,580	-	2,150	-	2,770	-	864	685	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	15,227	645	448	491	1.12	1.29	30,200
November	76,189	15,600	665	2,540	5.80	6.47	151,100
December	140,900	29,800	1,230	4,545	10.4	11.96	279,500
Calendar year 1945	812,023	29,800	448	2,225	5.08	68.94	1,611,000
January	129,380	9,880	1,770	4,174	9.53	10.99	256,600
February	60,360	5,220	1,520	2,156	4.92	5.13	119,700
March	87,480	4,190	2,150	2,822	6.44	7.43	173,500
April	85,380	4,900	1,680	2,846	6.50	7.25	169,300
May	103,310	4,440	2,740	3,333	7.61	8.77	204,900
June	69,470	3,020	1,650	2,316	5.29	5.90	137,800
July	38,608	1,780	864	1,245	2.84	3.28	76,580
August	22,566	848	657	728	1.66	1.92	44,760
September	19,390	888	573	646	1.47	1.65	38,460
Water year 1945-46	848,260	29,800	448	2,324	5.31	72.04	1,682,000

Peak discharge.- Nov. 27 (1 p.m.) 17,000 sec.-ft.; Dec. 28 (6:30 p.m.) 41,200 sec.-ft.; Jan. 24 (11 a.m.) 12,600 sec.-ft.
a No gage-height record; discharge interpolated.

North Santiam River at Mehama, Oreg.

Location.- Water-stage recorder, lat. 44°47', long. 122°37', in NW¼ sec. 18, T. 9 S., R. 2 E., at Mehama, half a mile downstream from Little North Santiam River. Datum of gage is 601.78 feet above mean sea level, datum of 1929.
Drainage area.- 665 square miles.
Records available.- July 1905 to March 1907, October 1910 to September 1914, September 1921 to September 1946.
Average discharge.- 30 years (1905-6, 1910-14, 1921-46), 3,149 second-feet.
Extremes.- Maximum discharge during year, 76,600 second-feet Dec. 28 (gage height, 15.37 feet), by slope-area method; minimum, 531 second-feet Oct. 9.
1905-7, 1910-14, 1921-46: Maximum discharge, that of Dec. 28, 1945; minimum, 400 second-feet (regulated) Sept. 29, Oct. 13, 1934; minimum daily, 420 second-feet Sept. 18, 1924.
Remarks.- Records excellent except those below 1,000 second-feet, which are fair. Slight regulation of low-water flow by mill dam at Mill City. No diversion above station for irrigation.
Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 26)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30					
1.5	475	3.3	2,640	1.6	570	4.0	4,090	10.0	31,600
1.9	790	4.0	3,990	2.0	930	4.8	6,040	11.5	43,200
2.3	1,200	4.7	5,600	2.4	1,380	5.8	9,140	13.5	60,200
2.8	1,850	5.5	7,690	2.9	2,070	7.0	13,800		
				3.4	2,900	8.5	21,600		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	644	1,060	6,000	a10,000	4,030	7,120	2,950	3,900	3,590	2,430	970	767
2	636	2,430	4,840	a9,500	3,920	6,120	2,770	4,070	3,780	2,350	950	749
3	628	2,180	4,280	a8,500	3,430	5,690	2,640	5,050	3,730	2,200	930	758
4	620	1,500	4,660	9,920	3,060	4,930	2,520	6,010	3,390	2,040	920	749
5	620	1,580	5,170	12,300	3,160	4,440	2,480	5,300	3,180	1,910	910	803
6	612	1,570	8,360	8,670	6,520	5,480	2,450	4,690	3,290	1,840	900	803
7	605	1,390	9,460	9,460	5,350	4,950	2,360	4,530	2,970	1,780	890	767
8	598	1,270	6,450	8,470	4,200	4,400	2,460	4,240	3,040	1,910	870	740
9	582	1,780	5,070	6,700	3,710	4,240	2,550	3,940	2,970	2,350	850	713
10	571	3,100	4,430	5,610	3,430	4,400	2,810	4,240	2,740	1,980	840	704
11	560	2,660	3,910	4,710	3,060	4,290	3,980	4,290	2,620	1,890	830	686
12	568	3,700	3,370	4,090	2,790	7,830	4,160	4,220	2,640	1,780	821	686
13	560	3,740	2,950	3,670	2,600	7,300	4,200	4,160	2,940	1,720	821	668
14	545	3,740	2,660	3,330	2,500	5,670	4,180	3,780	3,290	1,610	812	677
16	538	4,940	2,440	3,080	2,550	6,100	4,180	3,510	3,570	1,520	803	758
16	560	5,000	2,280	2,830	2,690	5,250	4,490	3,710	3,310	1,460	803	990
17	582	4,390	2,440	2,690	2,700	5,000	5,100	4,350	3,120	1,390	785	1,040
18	568	5,860	2,470	2,640	2,850	4,740	6,380	4,710	2,940	1,360	776	840
19	575	6,980	2,310	2,620	2,740	4,290	6,070	4,620	3,010	1,320	767	767
20	620	4,870	2,230	2,550	2,640	4,030	5,410	4,710	3,080	1,310	767	731
21	612	3,530	2,990	2,620	2,620	3,860	4,780	4,090	2,990	1,280	758	722
22	828	2,990	3,630	9,040	2,850	3,960	4,200	4,070	2,810	1,250	749	704
23	847	2,860	3,910	a10,000	2,860	3,860	3,940	3,750	2,530	1,190	749	686
24	718	2,940	6,000	16,000	3,470	3,610	4,580	3,470	2,460	1,140	740	668
25	684	4,340	5,380	10,900	4,810	3,410	6,240	3,670	2,900	1,120	740	668
26	668	7,890	5,600	7,520	3,920	3,630	7,000	4,670	2,580	1,080	740	659
27	660	29,900	7,890	5,770	9,670	4,580	5,560	4,950	2,320	1,070	731	642
28	a680	19,900	58,800	4,880	9,530	4,270	4,640	4,860	2,480	1,030	731	642
29	727	11,700	33,100	4,270	-	3,940	4,620	4,490	2,810	1,010	749	634
30	866	7,940	a20,000	3,670	-	3,530	4,380	3,840	2,500	1,010	812	634
31	1,050	-	a14,000	3,490	-	3,190	-	3,610	-	990	776	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	20,132	1,050	538	649	0.976	1.13	39,930
November	157,730	29,900	1,060	5,258	7.91	8.82	312,900
December	247,080	58,800	2,230	7,970	12.0	13.82	490,100
Calendar year 1945	1,334,306	58,800	538	3,656	5.50	74.62	2,647,000
January	199,500	16,000	2,550	6,435	9.68	11.16	395,700
February	107,660	9,670	2,500	3,845	5.78	6.02	213,500
March	148,110	7,830	3,190	4,778	7.18	8.28	293,800
April	124,080	7,000	2,360	4,136	6.22	6.94	246,100
May	133,500	6,010	3,470	4,306	6.48	7.47	264,800
June	89,580	3,780	2,320	2,986	4.49	5.01	177,700
July	48,320	2,430	990	1,559	2.34	2.70	95,840
August	25,290	970	731	816	1.23	1.41	50,160
September	22,055	1,040	634	735	1.11	1.23	43,750
Water year 1945-46	1,323,037	58,800	538	3,625	5.45	73.99	2,624,000

Peak discharge.- Nov. 27 (2 p.m.) 34,800 sec.-ft.; Dec. 28 (6:30 p.m.) 76,600 sec.-ft.; Jan. 24 (11:30 a.m.) 20,100 sec.-ft.
a No gage-height record; discharge computed on basis of records for stations above Mayflower Creek and at Detroit.

Santiam River at Jefferson, Oreg.

Location.- Water-stage recorder, lat. 44°42'50", long. 123°00'40", in SE¼ sec. 11, T. 10 S., R. 3 W., in Jefferson, 350 feet upstream from railroad bridge, 2 miles downstream from confluence of North Santiam and South Santiam Rivers, and 9 miles upstream from mouth. Datum of gage is 199.63 feet above mean sea level, datum of 1929.
Drainage area.- 1,790 square miles.
Records available.- July 1905 to July 1906 (gage heights only), October 1907 to September 1916 and October 1939 to September 1946 in reports of Geological Survey. April 1904 to September 1944 (gage heights only, incomplete for some years) in reports of U. S. Weather Bureau.
Average discharge.- 16 years (1907-16, 1939-46), 7,160 second-feet.
Extremes.- Maximum discharge during year, 149,000 second-feet Dec. 29 (gage height, 22.55 feet); minimum, 448 second-feet Oct. 16 (gage height, 1.54 feet).
1905-6, 1907-16, 1939-46: Maximum discharge observed, 161,000 second-feet during night of Nov. 22, 1909 (gage height, 18.2 feet, site and datum then in use), from curve of relation between gages based on readings from 1940 to 1945, and rating curve for gage at present site extended above 109,000 second-feet; corresponding gage height at present site, 23.0 feet from curve of relation. Minimum discharge observed, 260 second-feet Aug. 15-22, Aug. 24 to Sept. 2, 1940 (gage height, -1.00 foot, site and datum then in use).
Maximum discharge known, about 176,000 second-feet Nov. 21, 1921 (gage height, 19.5 feet at railroad bridge 350 feet downstream, site and datum in use prior to Oct. 1, 1940; corresponding gage height at present site, 24.4 feet, from curve of relation).
Remarks.- Records excellent except those above 60,000 second-feet, which are fair. Salem canal diverts from North Santiam River at Stayton for irrigation and power use; most of this water reaches Willamette River through Mill Creek at Salem. Stayton Canal diverts from North Santiam River at Stayton for irrigation of lands near West Stayton; some return flow reaches North Santiam River above station. Albany power canal diverts from South Santiam River at Lebanon; return flow reaches Willamette River at Albany. No regulation.
Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	550	1,070	16,700	25,600	10,200	20,100	7,010	7,370	5,500	3,340	870	604
2	525	1,760	12,500	22,600	10,700	16,500	6,400	6,930	5,500	3,250	825	604
3	520	3,750	10,500	21,700	9,770	16,100	5,910	7,900	5,520	3,050	796	593
4	511	2,480	9,870	21,600	8,450	13,500	5,480	9,440	5,050	2,810	810	610
5	498	2,080	11,000	32,300	7,880	11,900	5,220	9,120	4,580	2,480	761	621
6	488	2,510	13,300	26,700	17,800	12,900	5,090	8,040	4,720	2,340	747	688
7	484	2,410	27,300	24,000	19,700	13,400	4,810	7,440	4,700	2,200	740	663
8	480	2,080	17,900	26,600	13,700	11,500	5,030	7,170	4,330	2,230	727	621
9	475	2,000	12,800	19,300	11,400	10,500	5,420	6,550	4,290	2,970	708	604
10	470	6,240	10,900	15,800	10,400	10,500	6,330	6,530	4,020	2,810	675	576
11	470	6,400	9,790	13,100	9,440	10,400	9,370	6,790	3,670	2,460	663	560
12	470	7,930	8,500	11,200	8,130	20,100	9,570	6,620	3,550	2,260	663	554
13	475	10,700	7,360	9,900	7,300	33,400	9,440	6,600	3,720	2,150	657	544
14	462	8,100	6,540	8,830	6,710	21,900	9,050	6,200	4,100	2,010	657	554
15	457	9,840	5,850	8,060	6,600	19,200	8,760	5,580	5,010	1,890	639	615
16	462	11,700	5,420	7,350	6,900	17,200	8,830	5,460	4,980	1,760	621	878
17	466	12,700	5,400	6,750	6,930	15,500	9,320	6,120	4,610	1,650	621	1,470
18	466	13,100	5,380	6,330	7,370	15,300	11,100	7,010	4,290	1,560	598	1,230
19	462	27,300	5,040	6,310	7,080	12,900	11,600	7,060	4,070	1,450	598	933
20	484	19,600	4,780	6,060	6,820	11,300	10,500	7,080	4,070	1,390	582	782
21	511	11,100	5,620	5,950	6,660	10,200	9,570	6,530	3,990	1,330	571	714
22	560	8,360	7,300	19,400	7,150	9,800	8,350	5,970	3,760	1,270	560	675
23	731	7,430	7,620	21,300	6,990	9,570	7,470	5,830	3,540	1,220	554	651
24	737	7,130	12,500	35,300	7,830	9,000	7,830	5,180	3,370	1,140	549	610
25	650	8,990	12,500	37,000	11,500	8,370	9,870	5,200	3,720	1,060	549	582
26	605	14,200	12,800	22,400	10,200	8,110	12,000	6,420	3,830	1,010	549	560
27	580	50,900	14,600	15,800	19,900	9,470	10,500	7,560	3,370	1,010	544	560
28	560	61,500	68,800	13,100	27,600	9,570	8,780	7,720	3,140	949	527	549
29	605	37,800	117,000	11,600	-	9,820	8,210	7,760	3,880	925	532	532
30	670	24,300	57,800	9,980	-	8,780	8,370	6,620	3,610	893	566	549
31	920	-	35,100	8,850	-	7,860	-	5,740	-	885	610	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	16,824	920	457	543	33,370
November	385,460	61,500	1,070	12,850	764,500
December	558,470	117,000	4,780	18,020	1,108,000
Calendar year 1945	2,979,665	117,000	398	8,163	5,910,000
January	520,770	37,000	5,950	16,800	1,033,000
February	291,110	27,600	6,600	10,400	577,400
March	414,650	33,400	7,860	13,380	822,400
April	245,190	12,000	4,810	8,173	486,300
May	211,540	9,440	5,180	6,824	419,600
June	126,490	5,520	3,140	4,216	250,900
July	57,752	3,340	885	1,863	114,500
August	20,069	870	527	647	39,810
September	20,286	1,470	532	676	40,240
Water year 1945-46	2,868,611	117,000	457	7,859	5,690,000

Peak discharge.- Nov. 28 (1:30 a.m.) 73,800 sec.-ft.; Dec. 29 (5 to 6 a.m.) 149,000 sec.-ft.; Jan. 24 (9:30 p.m.) 49,500 sec.-ft.; Mar. 13 (4 a.m.) 38,000 sec.-ft.

Breitenbush River above French Creek, near Detroit, Oreg.

Location.- Water-stage recorder, lat. 44°45', long. 122°08', in NE¼ sec. 36, T. 9 S., R. 5 E., 0.1 mile downstream from Canyon Creek, 1½ miles upstream from French Creek, and 2 miles east of Detroit. Datum of gage is 1,559.64 feet above mean sea level, datum of 1929.

Drainage area.- 108 square miles.

Records available.- June 1932 to September 1946. October 1910 to October 1913 (fragmentary) at site below French Creek; records equivalent except for inflow from French Creek.

Average discharge.- 14 years (1932-46), 511 second-feet.

Extremes.- Maximum discharge during year, 11,600 second-feet Dec. 28 (gage height, 11.86 feet); minimum, 90 second-feet Oct. 15, 16 (gage height, 0.48 foot).
1932-46: Maximum discharge, that of Dec. 28, 1945, minimum, 87 second-feet Sept. 2, 1940 (gage height, 0.36 foot).

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

Cooperation.- Water-stage recorder inspected by employee to U. S. Forest Service.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
0.5	92	2.0	485	5.6	3,290	0.9	140	2.4	700	5.6	3,290
.7	118	2.5	710	6.7	4,590	1.2	210	3.0	1,050	6.8	4,710
1.0	174	3.1	1,030	7.9	6,120	1.5	300	3.7	1,530	8.1	6,380
1.3	245	3.8	1,520	9.1	7,690	1.9	450	4.6	2,260		
1.6	335	4.6	2,240	10.3	9,350						

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	176	1,000	1,660	560	1,060	510	710	725	535	213	154
2	102	296	800	1,660	520	924	480	798	822	545	210	152
3	100	235	740	1,500	470	816	446	1,080	804	485	202	154
4	99	183	780	1,900	430	725	434	1,280	715	442	200	152
5	98	189	800	2,000	500	695	434	1,080	675	418	200	160
6	97	178	1,000	1,400	800	768	426	960	655	410	195	160
7	96	161	1,100	1,500	660	725	422	924	560	410	190	156
8	95	147	860	1,200	560	695	434	870	615	485	188	152
9	94	189	700	1,000	500	690	434	822	605	510	185	148
10	94	254	580	840	460	715	465	942	550	446	182	146
11	93	228	500	720	430	705	605	906	560	434	180	144
12	93	314	450	620	420	894	665	906	600	414	178	142
13	93	338	400	560	415	774	690	876	720	386	178	142
14	92	417	360	500	410	705	715	780	816	346	178	142
15	91	561	330	480	405	715	750	735	735	321	175	165
16	92	521	310	460	400	680	846	834	660	312	172	192
17	94	437	320	440	400	685	1,010	1,010	595	303	168	170
18	92	574	302	430	400	670	1,290	1,070	610	303	168	158
19	97	579	287	420	390	640	1,200	1,060	705	315	165	152
20	99	429	278	410	380	630	1,040	1,050	725	321	165	146
21	105	314	366	600	420	640	900	882	695	312	162	144
22	144	278	445	1,200	460	660	768	900	630	291	160	144
23	114	272	534	1,200	460	645	750	768	520	276	160	142
24	104	305	700	2,300	540	600	966	715	480	261	158	138
25	102	584	651	1,530	630	565	1,360	804	525	252	156	138
26	99	1,490	705	1,200	585	630	1,400	1,040	446	246	154	136
27	100	4,580	1,620	1,000	1,530	768	1,070	990	406	234	154	135
28	102	2,900	9,410	900	1,370	710	912	888	505	231	152	133
29	117	1,800	6,420	800	-	670	900	740	535	231	156	133
30	161	1,300	3,220	700	-	615	786	660	485	228	158	131
31	161	-	2,160	620	-	555	-	690	-	219	158	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	3,223	161	91	104	0.963	1.11	6,390
November	20,229	4,580	147	674	6.24	6.97	40,120
December	38,128	9,410	278	1,230	11.4	13.15	75,630
Calendar year 1945	204,109	9,410	91	559	5.18	70.28	404,800
January	31,750	2,300	410	1,024	9.48	10.93	62,980
February	15,505	1,530	380	554	5.13	5.34	30,750
March	21,969	1,060	555	709	6.56	7.57	43,570
April	23,108	1,400	422	770	7.13	7.98	45,830
May	27,770	1,280	660	896	8.30	9.56	55,080
June	18,679	822	406	623	5.77	6.43	37,050
July	10,922	545	219	352	3.26	3.76	21,660
August	5,420	213	152	175	1.62	1.87	10,750
September	4,461	192	131	149	1.38	1.54	8,850
Water year 1945-46	221,164	9,410	91	606	5.61	76.17	438,700

Peak discharge.- Nov. 27 (11 a.m.) 5,160 sec.-ft.; Dec. 28 (about 5 p.m.) 11,600 sec.-ft.
Note.- No gage-height record Oct. 5-8, Nov. 29 to Dec. 17, Jan. 3-24, Jan. 26 to Feb. 24; discharge computed on basis of records for North Santiam River at Detroit, above Mayflower Creek, near Detroit, and at Mehama.

Little North Santiam River near Mehama, Oreg.

Location.- Wire-weight gage, lat. 44°48', long. 122°34', in NW¼ sec. 16, T. 9 S., R. 2 E., 2 miles east of Mehama and mouth of river. Datum of gage is 655.41 feet above mean sea level, datum of 1929.

Drainage area.- 110 square miles.

Records available.- October 1931 to September 1946. July to September 1924 and July to September 1931 at site 4 miles upstream.

Average discharge.- 15 years, 720 second-feet.

Extremes.- Maximum discharge during year, 19,900 second-feet Dec. 28 (gage height, 15.20 feet, observed at peak), from rating curve extended above 10,000 second-feet by logarithmic plotting; minimum observed, 38 second-feet Sept. 14.
1924, 1931-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 21 second-feet Sept. 11, 1934, Sept. 27, 28, 1938, Sept. 1, 1940.

Remarks.- Records fair except those for periods of doubtful gage-height record, which are poor. Gage read once daily. No regulation or diversion above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-30)

Oct. 1 to Dec. 27

2.3	37	3.7	288	6.3	1,920
2.6	69	4.1	440	7.1	2,870
2.8	92	4.5	630	8.0	4,270
3.1	136	5.0	895	9.0	6,380
3.4	199	5.6	1,270	10.5	9,300

Dec. 28 to Sept. 30

2.8	34	4.3	435	8.3	4,470
2.9	47	4.7	630	9.5	6,750
3.1	78	5.2	920	11.0	10,000
3.3	115	5.8	1,330	13.0	14,600
3.6	181	6.5	1,970	15.0	19,400
3.9	270	7.3	2,920		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	212	1,310	1,980	1,270	2,530	575	752	535	480	89	d46
2	72	386	983	2,010	1,110	2,500	515	806	540	422	85	44
3	68	818	1,020	2,950	890	d1,620	471	d1,000	520	345	80	46
4	67	746	1,270	3,940	812	1,290	458	d1,200	426	305	76	47
5	64	541	2,200	3,800	758	1,100	426	d900	372	247	73	48
6	57	462	2,870	1,900	1,280	2,210	417	788	354	214	70	d47
7	54	398	2,490	2,580	1,260	1,730	430	770	417	220	68	d46
8	43	315	1,200	2,090	1,030	1,170	458	764	471	294	70	d44
9	42	390	1,110	1,430	950	1,180	535	734	417	341	67	d43
10	43	1,240	972	1,200	842	1,190	580	696	363	394	64	42
11	44	934	917	1,030	707	1,760	636	724	341	d305	62	40
12	41	1,800	774	872	625	2,540	680	712	329	270	58	40
13	40	1,510	665	800	585	2,280	729	702	341	234	58	39
14	40	1,530	590	758	555	1,590	794	570	390	220	52	38
15	39	1,600	522	646	605	1,490	1,040	560	646	203	53	39
16	44	1,630	541	580	625	1,350	1,110	560	605	184	58	d100
17	43	1,460	565	565	776	1,280	1,250	707	575	162	54	d80
18	40	1,960	605	535	818	1,180	1,500	590	458	153	58	d68
19	39	2,430	541	550	758	1,020	1,260	680	458	148	54	59
20	40	1,730	551	560	685	884	1,120	702	368	142	52	59
21	97	1,210	917	1,580	718	860	1,040	565	350	139	44	58
22	123	868	1,110	3,960	752	938	890	550	329	139	48	54
23	95	856	1,650	7,010	836	896	950	525	305	109	44	d52
24	85	840	2,100	6,350	1,150	824	1,120	515	376	107	43	d50
25	69	1,000	1,340	2,580	1,390	729	1,430	520	702	102	44	d47
26	67	2,140	1,390	2,290	1,770	800	2,470	836	585	98	43	44
27	69	7,530	9,410	1,240	5,010	1,170	950	1,030	485	98	43	42
28	72	5,240	18,000	1,030	2,560	890	914	d1,000	585	92	44	40
29	95	3,210	7,260	908	-	1,130	884	770	668	87	46	39
30	114	1,710	3,800	1,030	-	1,010	836	575	630	91	50	39
31	197	-	2,670	1,480	-	980	-	530	-	94	d48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	2,082	197	39	67.2	0.611	0.70	4,130
November	46,696	7,530	212	1,557	14.2	15.79	92,620
December	71,343	18,000	522	2,301	20.9	24.12	141,500
Calendar year 1945	335,210	18,000	24	918	8.35	113.32	664,900
January	60,234	7,010	535	1,943	17.7	20.36	119,500
February	31,127	5,010	555	1,112	10.1	10.52	61,740
March	42,121	2,540	729	1,359	12.4	14.24	83,550
April	26,468	2,470	417	882	8.02	8.95	52,500
May	22,333	1,200	515	720	6.55	7.55	44,300
June	13,941	702	305	465	4.23	4.71	27,650
July	6,439	480	87	208	1.89	2.18	12,770
August	1,798	89	43	58.0	.527	.61	3,570
September	1,480	100	38	49.3	.448	.50	2,940
Water year 1945-46	326,062	18,000	38	893	8.12	110.23	646,800

d Doubtful gage-height record; discharge computed on basis of records for North Santiam River above Mayflower Creek and at Mehama and Breitenbush River near Detroit.

South Santiam River below Cascadia, Oreg.

Location.- Water-stage recorder, lat. 44°24', long. 122°30', in SE¼ sec. 36, T. 13 S., R. 2 E., 100 feet downstream from bridge at Cascadia ranger station, half a mile downstream from Tollgate Creek three-quarters of a mile upstream from Deer Creek, and 1½ miles southwest of Cascadia. Gaging cable is 0.7 mile upstream, above Tollgate Creek. Datum of gage is 759.38 feet above mean sea level, datum of 1929.
Drainage area.- 174 square miles at gaging cable.
Records available.- September 1935 to September 1946. Records do not include runoff from 3 square miles between cable and gage.
Average discharge.- 11 years, 689 second-feet.
Extremes.- Maximum discharge during year, 23,400 second-feet Dec. 28 (gage height, 18.65 feet), from rating curve extended above 12,000 second-feet by logarithmic plotting; minimum, 41 second-feet Oct. 8-11, 16 (gage height, 1.22 feet).
1935-46: Maximum discharge, that of Dec. 28, 1945; minimum, 23 second-feet Dec. 1, 2, 1936 (gage height, 0.98 foot).
Remarks.- Records good except those for period of no gage-height record and those for August and September, which are fair. No diversion or regulation above station.
Cooperation.- Water-stage recorder inspected by employees of U. S. Forest Service.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30					
1.2	39	3.5	725	1.7	40	3.2	460	9.4	6,440
1.5	74	4.0	1,005	1.8	48	3.5	640	11.0	8,860
1.7	104	4.8	1,520	2.0	70	4.0	950	12.0	10,500
2.0	159	5.6	2,130	2.2	103	4.7	1,440	14.0	14,000
2.3	230	6.5	2,900	2.4	145	5.5	2,050	15.4	16,700
2.6	320	7.5	3,940	2.6	200	6.5	2,900		
3.0	480	9.5	6,500	2.9	310	7.8	4,310		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	149	1,460	2,210	971	2,050	730	814	676	320	85	53
2	50	343	1,130	2,260	999	1,710	652	856	688	302	82	70
3	49	232	969	2,150	844	1,540	598	1,040	640	278	78	58
4	48	165	1,110	2,680	706	1,340	562	1,140	568	262	76	54
5	47	240	1,120	4,190	760	1,170	532	999	526	242	74	63
6	44	232	1,840	2,610	2,500	1,520	508	887	604	227	73	63
7	42	190	2,300	2,860	1,790	1,410	478	820	520	221	73	57
8	41	167	1,530	2,450	1,260	1,230	508	a760	514	238	70	54
9	41	611	1,180	1,830	1,010	1,140	550	a700	466	250	68	51
10	41	840	1,160	1,570	868	1,160	682	a740	420	209	66	48
11	41	655	1,050	1,290	742	1,090	929	a740	400	191	64	46
12	42	1,590	874	1,080	640	2,920	971	a740	390	179	63	46
13	42	1,220	742	936	580	3,000	964	730	420	165	63	46
14	42	1,040	670	836	586	2,030	936	664	562	160	63	46
15	42	1,390	600	754	712	2,030	936	610	628	155	63	69
16	43	1,580	540	676	772	1,710	978	634	550	148	62	168
17	45	1,340	550	628	766	1,720	1,120	748	520	141	60	141
18	44	2,350	530	610	808	1,580	1,400	820	486	136	57	92
19	45	2,650	498	598	796	1,340	1,330	808	466	130	56	72
20	55	1,460	489	556	778	1,160	1,170	802	466	128	54	64
21	65	940	660	604	814	1,060	985	682	440	119	54	59
22	107	796	720	2,990	814	1,060	850	876	405	113	53	57
23	98	774	808	2,210	814	992	808	622	375	109	51	55
24	71	758	1,220	4,160	1,140	901	957	562	370	103	50	54
25	60	1,130	1,110	2,970	1,400	838	1,280	616	435	101	50	52
26	54	2,290	1,320	1,950	1,140	887	1,400	838	375	98	48	50
27	54	6,350	2,030	1,480	3,240	1,050	1,160	880	335	99	47	47
28	60	4,800	16,700	1,220	2,750	1,010	971	1,040	360	94	47	48
29	66	3,010	9,200	1,010	-	1,010	999	929	385	90	51	46
30	109	2,000	4,600	820	-	922	908	754	340	92	58	45
31	139	-	2,980	778	-	814	-	700	-	90	55	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,780	139	41	57.4	0.330	0.38	3,530
November	41,292	6,350	149	1,376	7.91	8.83	81,900
December	61,670	16,700	489	1,989	11.4	13.18	122,300
Calendar year 1945	331,963	16,700	41	909	5.22	70.95	658,400
January	52,968	4,190	556	1,709	9.82	11.32	105,100
February	31,000	3,240	580	1,107	6.36	6.63	61,490
March	43,394	3,000	814	1,400	8.05	9.27	86,070
April	26,852	1,400	478	895	5.14	5.74	53,260
May	24,351	1,140	562	786	4.52	5.20	48,300
June	14,310	688	335	477	2.74	3.06	28,380
July	5,187	320	90	167	.960	1.11	10,290
August	1,914	85	47	61.7	.355	.41	3,800
September	1,872	168	45	62.4	.359	.40	3,710
Water year 1945-46	306,590	16,700	41	840	4.83	65.53	608,100

Peak discharge.- Nov. 27 (3 and 4:30 p.m.) 7,420 sec.-ft.; Dec. 28 (6 p.m.) 23,400 sec.-ft.; Jan. 5 (7:30 a.m.) 4,720 sec.-ft.; Jan. 24 (11:30 a.m.) 5,360 sec.-ft.
a No gage-height record; discharge computed on basis of records for South Santiam River at Waterloc and Middle Santiam River near Foster.

South Santiam River at Waterloo, Oreg.

Location.- Water-stage recorder, lat. 44°29'55", long. 122°49'20", in NW¼ sec. 28, T. 12 S., R. 1 W., 200 yards downstream from bridge at Waterloo and 2½ miles upstream from Hamilton Creek. Datum of gage is 370.39 feet above mean sea level, datum of 1929.

Drainage area.- 640 square miles.

Records available.- July 1905 to March 1907, October 1910 to December 1911, July 1923 to September 1946.

Average discharge.- 24 years (1905-6, 1923-46), 2,675 second-feet.

Extremes.- Maximum discharge during year, 74,200 second-feet Dec. 28 (gage height, 22.85 feet), from rating curve extended above 37,000 second-feet; minimum, 143 second-feet Oct. 13 (gage height, 2.11 feet).
1905-7, 1910-11, 1923-46: Maximum discharge, that of Dec. 28, 1945; minimum, 96 second-feet Sept. 1, 2, 1940 (gage height, 1.98 feet).

Remarks.- Records excellent. No diversion or regulation above station.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Sept. 16-19)

2.1	139	3.8	1,510	9.3	15,400
2.3	218	4.3	2,220	11.0	21,600
2.5	324	5.0	3,350	13.0	29,600
2.7	450	5.8	4,940	15.0	38,100
3.0	675	6.8	7,390	17.0	46,800
3.4	1,045	8.0	11,000	19.2	56,600

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	205	506	5,880	8,890	4,000	7,970	2,770	2,770	1,890	1,020	324	223
2	192	1,040	4,590	8,080	4,160	6,630	2,530	2,690	1,920	945	318	228
3	188	1,280	3,900	7,970	3,670	6,280	2,360	3,080	1,860	869	313	248
4	179	760	3,920	8,890	3,180	5,300	2,190	3,530	1,610	832	302	218
5	175	734	4,280	15,100	2,990	4,620	2,070	3,200	1,500	760	296	218
6	175	965	7,350	10,100	8,470	5,760	2,000	2,850	1,720	718	279	233
7	161	860	10,700	10,700	7,120	5,570	1,910	2,690	1,630	684	274	228
8	157	726	6,500	10,200	5,160	4,740	2,000	2,510	1,500	752	274	214
9	153	1,410	4,870	7,260	4,240	4,300	2,220	2,300	1,410	1,090	274	205
10	150	3,350	4,300	6,080	3,800	4,380	2,790	2,310	1,270	841	258	192
11	150	2,950	3,920	5,030	3,300	4,200	4,140	2,360	1,190	752	253	184
12	157	4,870	3,320	4,320	2,900	11,300	4,060	2,310	1,150	692	248	184
13	146	4,900	2,880	3,770	2,630	13,200	3,920	2,320	1,220	659	248	179
14	150	3,880	2,550	3,350	2,510	8,340	3,690	2,140	1,440	611	248	179
15	153	4,850	2,260	3,130	2,710	7,970	3,530	1,920	1,890	595	243	214
16	157	5,980	2,080	2,850	2,950	6,860	3,620	1,910	1,700	558	243	506
17	175	5,690	2,070	2,640	2,980	6,400	3,820	2,190	1,560	520	238	595
18	175	9,040	2,070	2,590	3,210	6,150	4,900	2,450	1,430	506	233	404
19	164	11,900	1,910	2,610	3,040	5,120	4,620	2,420	1,340	471	223	296
20	175	6,580	1,810	2,500	2,990	4,400	4,000	2,430	1,310	450	223	258
21	201	4,380	2,320	2,500	3,060	4,020	3,580	2,140	1,230	430	223	228
22	313	3,400	2,950	11,000	3,200	3,920	3,130	2,000	1,140	404	223	218
23	397	3,250	3,040	8,600	3,080	3,800	2,880	1,950	1,060	384	223	209
24	307	3,200	5,460	16,700	3,690	3,530	3,130	1,740	1,040	372	223	201
25	238	4,510	4,870	13,100	5,390	3,280	4,260	1,820	1,270	366	218	192
26	214	8,240	5,340	7,970	4,320	3,300	4,640	2,480	1,160	348	218	179
27	205	28,800	7,080	5,980	11,500	3,900	3,860	2,560	1,040	368	205	175
28	223	21,600	56,300	4,900	11,200	3,800	3,200	2,980	1,020	348	201	171
29	238	13,000	41,600	4,260	-	3,800	3,210	2,870	1,280	330	209	171
30	336	8,190	19,100	3,640	-	3,800	3,130	2,260	1,140	330	233	168
31	528	-	12,000	3,330	-	3,100	-	2,040	-	342	205	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	6,537	528	146	211	0.330	0.38	12,970
November	170,841	28,800	506	5,695	8.90	9.93	338,900
December	241,220	56,300	1,810	7,781	12.2	14.02	478,500
Calendar year 1945	1,251,969	56,300	146	3,430	5.36	72.77	2,483,000
January	208,040	16,700	2,500	6,711	10.5	12.09	412,600
February	121,450	11,500	2,510	4,338	6.78	7.06	240,900
March	169,420	13,200	3,100	5,465	8.54	9.84	336,000
April	98,160	4,900	1,910	3,272	5.11	5.70	194,700
May	75,220	3,530	1,740	2,426	3.79	4.37	149,200
June	41,920	1,920	1,020	1,397	2.18	2.44	83,150
July	18,345	1,090	330	592	.925	1.07	36,390
August	7,693	324	201	248	.388	.45	15,260
September	7,118	595	168	237	.370	.41	14,120
Water year 1945-46	1,165,964	56,300	146	3,194	4.99	67.76	2,313,000

Peak discharge.- Nov. 27 (2:30 to 5:30 p.m.) 32,600 sec.-ft.; Dec. 28 (9 p.m.) 74,200 sec.-ft.; Jan. 5 (10:30 a.m.) 16,600 sec.-ft.; Jan. 24 (2 p.m.) 23,400 sec.-ft.

Middle Santiam River near Foster, Oreg.

Location.- Water-stage recorder, lat. 44°28', long. 122°31', in SE¼ sec. 2, T. 13 S., R. 2 E., half a mile upstream from Green Peter Creek and 8 miles northeast of Foster. Datum of gage is 733.44 feet above mean sea level (North Pacific Railway bench mark).

Drainage area.- 271 square miles.

Records available.- August 1931 to September 1946.

Average discharge.- 15 years, 1,430 second-feet.

Extremes.- Maximum discharge during year, 41,800 second-feet Dec. 28 (gage height, 21.6 feet), from rating curve extended above 24,000 second-feet by logarithmic plotting; minimum, 75 second-feet (regulated) Oct. 6 (gage height, 1.39 feet).
1931-46: Maximum discharge, that of Dec. 28, 1945; minimum, 54 second-feet Dec. 1, 1936 (gage height. 1.25 feet).

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27						Dec. 28 to Sept. 30					
1.4	76	3.6	685	8.0	4,850	1.5	93	4.3	1,090	12.0	13,000
1.8	129	4.3	1,050	9.5	7,280	1.9	147	5.0	1,590	14.0	18,000
2.2	202	5.0	1,540	11.0	10,400	2.2	209	6.0	2,510	17.0	26,700
2.6	302	5.8	2,250	13.0	15,400	2.6	320	7.2	3,950	20.0	36,300
3.0	434	6.8	3,310	15.0	21,300	3.0	455	8.6	6,090		
						3.6	710	10.0	8,700		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	271	2,900	a4,200	a1,900	4,060	1,320	1,510	1,040	588	176	114
2	103	845	2,270	a4,200	a2,000	3,420	1,210	1,530	1,070	543	169	125
3	97	604	1,990	a4,000	a1,700	3,110	1,130	1,900	994	499	163	112
4	95	354	2,090	a4,500	a1,400	2,860	1,070	2,110	882	463	160	109
5	92	409	2,330	7,150	a1,400	2,340	1,040	1,850	825	434	154	114
6	88	467	5,720	4,640	3,790	3,380	1,010	1,620	976	410	152	118
7	85	395	5,370	5,690	2,630	2,860	970	1,540	871	392	151	111
8	84	326	3,310	4,720	1,980	2,420	1,030	1,420	830	475	147	109
9	83	904	2,440	3,510	1,630	2,290	1,120	1,300	790	624	144	106
10	82	1,620	2,120	2,700	a1,400	2,440	1,490	1,370	715	479	141	103
11	80	1,280	1,870	2,200	a1,300	2,330	2,410	1,370	670	430	136	100
12	80	2,470	1,580	1,880	1,220	6,650	2,350	1,360	656	399	133	97
13	79	2,100	1,340	1,710	1,130	5,480	2,250	1,350	725	368	131	95
14	78	2,250	1,180	a1,500	1,100	3,590	2,070	1,210	860	347	130	96
15	77	2,790	1,060	a1,400	1,240	3,560	2,030	1,100	1,000	329	128	139
16	78	2,860	974	a1,300	1,360	2,910	2,130	1,150	904	314	126	388
17	84	2,580	1,010	a1,200	1,420	2,840	2,350	1,370	840	296	124	308
18	79	4,510	1,020	a1,150	1,590	2,630	2,910	1,460	765	281	119	186
19	79	4,510	946	a1,150	1,450	2,210	2,680	1,420	740	270	118	145
20	91	2,780	902	a1,100	1,380	1,960	2,300	1,420	715	256	115	126
21	106	1,820	1,410	a1,200	1,500	1,860	2,040	1,210	674	245	114	118
22	182	1,540	1,680	7,560	1,600	1,910	1,750	1,160	638	234	111	112
23	178	1,610	1,810	4,920	1,560	1,860	1,630	1,090	598	224	110	109
24	129	1,730	3,290	10,200	2,330	1,700	1,960	988	616	214	109	106
25	110	2,840	2,680	6,260	2,860	1,610	2,610	1,070	740	204	108	104
26	100	6,560	3,160	3,980	2,210	1,770	2,750	1,370	656	200	108	103
27	101	18,900	6,100	2,970	7,680	2,150	2,170	1,400	588	198	106	98
28	113	11,200	35,900	2,310	5,540	1,950	1,800	1,520	665	188	105	97
29	131	6,210	a25,000	a1,900	-	1,840	1,880	1,450	745	184	106	96
30	209	3,990	a10,000	a1,700	-	1,650	1,710	1,160	642	182	136	95
31	258	-	a6,000	a1,600	-	1,460	-	1,080	-	182	119	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	3,338	258	77	108	0.399	0.46	6,620
November	90,725	18,900	271	3,024	11.2	12.45	180,000
December	139,432	35,900	902	4,498	16.6	19.13	276,600
Calendar year 1945	672,786	35,900	77	1,843	6.80	92.33	1,335,000
January	104,500	10,200	1,100	3,371	12.4	14.34	207,300
February	58,300	7,680	1,100	2,082	7.68	8.00	115,600
March	82,900	6,650	1,460	2,674	9.87	11.38	164,400
April	55,170	2,910	970	1,839	6.79	7.57	109,400
May	42,858	2,110	988	1,383	5.10	5.88	85,010
June	23,430	1,070	588	781	2.88	3.22	46,470
July	10,452	624	182	337	1.24	1.43	20,730
August	4,049	176	105	131	.483	.56	8,030
September	3,839	388	95	128	.472	.53	7,610
Water year 1945-46	618,993	35,900	77	1,696	6.26	84.95	1,228,000

Peak discharge.- Nov. 27 (8 a.m.) 21,500 sec.-ft.; Dec. 28 (5 p.m.) 41,800 sec.-ft.; Jan. 24 (9:30 a.m.) 13,700 sec.-ft.
a No gage-height record; discharge computed on basis of records for South Santiam River below Cascadia and at Waterloo.

Albany power canal near Lebanon, Oreg.

Location.- Water-stage recorder, lat. 44°32'55", long. 122°54'20", in SW¼ sec. 2, T. 12 S., R. 2 W., an eighth of a mile downstream from spillway and 1 mile north of Lebanon, Datum of gage is 322.90 feet above mean sea level, datum of 1929.

Records available.- April 1926 to September 1946. February to December 1919 at site near Albany.

Average discharge.- 20 years, 221 second-feet.

Extremes.- Maximum discharge during year, 350 second-feet Jan. 22 (gage height, 4.32 feet); minimum, 34 second-feet Feb. 14.
1919, 1926-46: Maximum discharge, that of Jan. 22, 1946; no flow at times.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Canal diverts from South Santiam River at Lebanon and discharges into Calapooya River at mouth. Lebanon ditch discharges into canal just below canal intake. Water is used for power and water supply at Albany.

Cooperation.- Recorder inspected by employee of Mountain States Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	254	238	256	276	247	255	273	267		206	133
2	175	278	224	250	279	254	261	273	264		205	132
3	175	304	216	259	275	252	258	275	262		200	136
4	163	272	250	268	266	241	260	278	259		194	135
5	163	271	260	279	264	248	259	274	255		192	129
6	160	278	272	253	206	253	258	272	261		187	132
7	157	274	295	270	204	259	256	270	262		184	135
8	149	272	270	274	266	269	255	267	258		181	132
9	150	278	259	264	260	267	261	269	256	a245	188	127
10	142	297	259	262	256	268	277	268	253		185	124
11	141	270	257	269	259	266	292	269	248		182	123
12	146	275	254	280	264	223	292	268	245		179	122
13	144	263	247	273	259	182	289	268	253		178	119
14	131	231	271	289	221	178	287	266	260		174	120
15	136	268	282	306	255	199	288	262	269		164	127
16	143	281	278	302	256	208	287	263	267		141	148
17	148	281	281	302	256	240	281	269	264	236	145	160
18	154	284	276	301	256	243	281	269	259	243	141	112
19	146	294	274	300	255	231	281	268	258	243	140	101
20	156	267	273	302	256	232	275	268	263	234	138	139
21	176	263	284	300	256	237	270	266		233	133	138
22	211	273	295	253	257	256	267	262		227	133	136
23	240	271	296	224	255	268	263	263		222	132	154
24	226	275	315	217	258	263	266	263	a262	212	128	156
25	212	287	298	215	268	259	281	264		219	128	156
26	197	304	267	272	261	260	288	268		210	128	153
27	191	196	276	281	268	266	282	269		212	124	148
28	169	133	208	274	224	270	279	272	h261	209	124	147
29	207	211	167	272	-	269	276	271	a260	203	124	145
30	221	251	215	269	-	265	277	268	a260	204	128	143
31	249	-	253	267	-	257	-	267	-	204	136	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,361	249	131	173	10,630
November	7,956	304	133	265	15,780
December	8,110	315	167	262	16,090
Calendar year 1945	88,386	315	110	242	175,300
January	8,403	306	215	271	16,670
February	7,136	279	204	255	14,150
March	7,630	270	178	246	15,130
April	8,202	292	255	273	16,270
May	8,323	278	262	268	16,510
June	7,798	269	-	260	15,470
July	7,231	-	203	233	14,340
August	4,922	206	124	159	9,760
September	4,062	160	101	135	8,060
Water year 1945-46	85,134	315	101	233	168,900

a No gage-height record; discharge interpolated or computed on basis of range in stage.
h Computed from staff-gage reading.

Luckiamute River near Hoskins, Oreg.

Location.- Water-stage recorder, lat. 44°43', long. 123°30', in NE¼ sec. 11, T. 10 S., R. 7 W., a quarter of a mile downstream from Benton County line and 3½ miles northwest of Hoskins. Datum of gage is 378.7 feet above mean sea level (from river-profile survey).

Drainage area.- 34 square miles.

Records available.- May 1934 to September 1946.

Average discharge.- 12 years, 185 second-feet.

Extremes.- Maximum discharge during year, 3,050 second-feet Dec. 28 (gage height, 9.90 feet); minimum, 9 second-feet Sept. 14, 26-30.
1934-46: Maximum discharge, 5,080 second-feet Dec 29, 1937; minimum, 7 second-feet Sept. 2-5, 10, 21, 22, 1934.

Remarks.- Records good. No diversion or regulation above station; log ponds upstream cause diurnal fluctuation at times.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28

0.9	8	1.8	110	3.6	585
1.0	13	2.1	170	4.0	725
1.1	20	2.4	240	5.0	1,090
1.3	39	2.8	340	6.5	1,690
1.5	65	3.2	460	8.5	2,490

Dec. 29 to Sept. 30

1.1	10	1.8	102
1.3	30	2.1	160
1.5	55	2.5	260

Note.- Same as preceding table above 2.8 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	26	490	672	798	505	156	83	35	55	22	14
2	14	55	394	851	900	526	148	79	34	47	21	13
3	15	41	397	809	694	535	140	75	35	42	20	14
4	15	33	388	1,210	523	463	136	72	35	38	20	14
5	14	31	484	1,130	686	400	126	69	34	36	19	17
6	14	44	1,170	798	1,630	370	118	68	46	32	19	16
7	14	51	1,120	918	1,020	328	116	66	41	31	19	15
8	13	50	756	851	722	292	140	65	37	68	18	14
9	13	148	544	658	574	265	162	63	36	74	17	13
10	13	305	436	514	490	248	316	58	34	55	17	12
11	13	335	364	418	421	268	373	56	31	50	17	12
12	13	496	308	355	364	963	300	54	30	45	17	11
13	13	332	270	310	331	834	252	52	30	41	16	10
14	13	290	242	278	302	599	220	51	42	40	16	10
15	13	338	218	250	278	1,050	188	51	41	41	16	34
16	14	557	200	228	255	764	162	48	37	37	15	42
17	14	535	188	210	255	596	152	47	34	35	15	19
18	14	767	172	202	232	466	140	45	31	34	14	15
19	16	900	162	185	222	391	130	43	30	31	14	13
20	16	557	162	180	205	334	132	42	28	30	14	12
21	18	388	198	326	208	295	120	42	27	29	14	12
22	23	300	228	1,120	212	300	113	47	27	28	14	11
23	19	245	433	736	238	290	106	45	27	28	14	10
24	19	215	680	1,390	260	300	100	41	40	27	13	10
25	18	300	564	986	278	280	97	41	41	26	13	10
26	18	1,230	582	658	270	260	99	45	34	26	12	10
27	22	2,230	792	493	550	242	90	42	30	26	12	9
28	23	1,130	2,560	421	610	222	85	42	41	24	12	9
29	24	820	1,920	370	-	212	102	40	87	24	13	9
30	29	638	1,210	322	-	185	88	37	65	26	14	15
31	29	-	844	457	-	170	-	36	-	23	14	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	521	29	13	16.8	0.494	0.57	1,030
November	13,387	2,230	26	446	13.1	14.64	26,550
December	18,476	2,560	162	596	17.5	20.21	36,650
Calendar year 1945	91,023	2,560	10	249	7.32	99.56	180,500
January	18,306	1,390	180	591	17.4	20.02	36,310
February	13,528	1,630	205	483	14.2	14.80	26,830
March	12,953	1,050	170	418	12.3	14.17	25,690
April	4,607	373	85	154	4.53	5.04	9,140
May	1,645	83	36	53.1	1.56	1.80	3,260
June	1,120	87	27	37.3	1.10	1.23	2,220
July	1,149	74	23	37.1	1.09	1.26	2,280
August	491	22	12	15.8	.465	.54	974
September	425	42	9	14.2	.418	.46	843
Water year 1945-46	86,608	2,560	9	237	6.97	94.74	171,800

Peak discharge.- Nov. 27 (3 a.m.) 3,030 sec.-ft.; Dec. 28 (4 to 5 p.m.) 3,050 sec.-ft.; Feb. 6 (6 a.m.) 1,930 sec.-ft.

Luckiamute River at Pedee, Oreg.

Location.- Staff gage, lat. 44°44'45", long. 123°25'05", near line between SW¼ sec. 34 and SE¼ sec. 33, T. 9 S., R. 6 W., half a mile southwest of Pedee and three-quarters of a mile downstream from Pedee Creek. Datum of gage is 243.07 feet above mean sea level, datum of 1929.

Drainage area.- 115 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 7,100 second-feet Nov. 27 (gage height, 15.0 feet, from floodmark); minimum observed, 18 second-feet (regulated) Sept. 13.
1940-46: Maximum discharge, that of Nov. 27, 1945; minimum observed, 7 second-feet (regulated) Sept. 12, 1944.

Remarks.- Records fair except those for periods of doubtful or no gage-height record and those for July 25 to Sept. 30, which are poor. Gage read once daily Oct. 1 to June 12, twice daily June 13 to Sept. 30. Small diversions above station for irrigation. Some diurnal fluctuation in summer caused by log ponds above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.1	21	2.2	152	5.4	1,200
1.2	28	2.6	227	6.6	1,720
1.4	43	3.1	344	8.0	2,380
1.6	63	3.7	525	10.0	3,450
1.9	102	4.4	800	12.0	4,600

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	45	1,100	g1,630	g1,450	1,180	355	a170	75	70	35	27
2	25	61	920	g1,900	g1,540	1,160	341	a160	71	68	35	27
3	24	64	872	1,770	1,540	1,140	326	a150	70	68	35	27
4	24	48	896	g2,740	1,400	944	313	a145	71	65	34	27
5	23	41	d1,090	2,680	g1,360	712	296	a140	78	63	34	28
6	d23	59	g1,990	g1,940	g3,670	636	275	a135	84	59	32	28
7	d23	68	2,580	2,240	g2,840	680	272	a130	88	52	32	26
8	d23	78	g1,860	g2,080	a2,200	576	296	a130	83	114	34	d24
9	d23	179	g1,400	g1,580	a1,500	437	316	a135	74	138	32	d22
10	d23	385	1,110	1,300	a1,200	416	525	132	69	127	34	d20
11	d23	440	852	1,040	1,020	748	546	126	65	91	34	19
12	24	708	728	872	912	1,930	542	119	63	75	34	19
13	24	461	616	748	792	g1,860	484	114	62	68	34	18
14	24	379	536	624	724	1,470	422	111	73	59	32	20
15	23	440	487	553	628	g2,280	416	108	73	65	32	49
16	22	724	g490	484	553	2,060	411	106	73	59	32	87
17	23	828	437	455	532	1,370	388	104	70	50	31	42
18	22	1,260	411	422	500	1,050	310	99	63	52	28	39
19	22	1,460	366	388	452	948	277	98	61	47	28	27
20	23	832	336	358	416	836	263	95	58	47	27	24
21	24	612	434	g960	391	708	252	94	54	45	25	23
22	32	468	477	g2,380	408	636	244	94	54	45	25	23
23	29	399	508	g1,720	440	612	d230	94	52	43	23	22
24	24	363	d1,190	g3,060	440	588	d220	91	52	43	24	20
25	24	680	1,200	g2,790	440	564	d210	88	73	41	24	20
26	22	g1,810	1,350	g1,630	480	528	d210	111	59	37	23	22
27	27	g4,990	2,030	d1,200	1,170	487	d200	98	73	37	22	22
28	34	g2,840	g4,880	g880	1,210	477	d190	95	117	35	22	22
29	32	g2,080	4,130	g880	-	471	211	92	154	35	24	22
30	42	g1,580	g2,790	g840	-	437	a190	87	73	37	25	27
31	41	-	2,030	g1,080	-	393	-	82	-	37	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	796	42	22	25.7	0.223	0.26	1,580
November	24,382	4,990	41	813	7.07	7.88	48,360
December	40,096	4,880	336	1,293	11.2	12.97	79,530
Calendar year 1945	190,760	4,990	15	523	4.55	61.68	378,400
January	43,224	3,060	358	1,394	12.1	13.98	85,750
February	30,208	3,670	391	1,079	9.38	9.77	59,920
March	28,354	2,280	393	914	7.95	9.16	56,200
April	9,531	546	190	318	2.77	3.08	18,900
May	3,533	170	82	114	.991	1.14	7,010
June	2,185	154	52	72.8	.633	.71	4,330
July	1,872	138	35	60.4	.525	.61	3,710
August	913	35	22	29.5	.257	.30	1,810
September	823	87	18	27.4	.238	.27	1,630
Water year 1945-46	185,897	4,990	18	509	4.43	60.13	368,700

a No gage-height record; discharge computed on basis of records for stations near Hoskins and near Suver.
d Doubtful gage-height record; discharge computed as explained in footnote a.
g Computed from graph based on gage readings.

Luckiamute River near Suver, Oreg.

Location.- Water-stage recorder, lat. 44°47'00", long. 123°14'00", in SW¼SW¼ sec. 18, T. 9 S., R. 4 W., at highway bridge at Helmick State Park, 3 miles downstream from Little Luckiamute River and 3 miles northwest of Suver. Datum of gage is 171.37 feet above mean sea level, datum of 1929.
Drainage area.- 240 square miles.
Records available.- August 1905 to October 1911, July 1940 to September 1946.
Average discharge.- 12 years (1905-11, 1940-46), 860 second-feet.
Extremes.- Maximum discharge during year, 10,600 second-feet Nov. 27, Dec. 29 (gage height, 29.05 feet); minimum, 32 second-feet Sept. 11 (gage height, 1.92 feet).
1905-11, 1940-46: Maximum discharge, 14,400 second-feet Apr. 1, 1943 (gage height, 29.40 second-feet), from rating curve extended above 12,000 second-feet; minimum, 21 second-feet Sept. 10, 1944 (gage height, 1.78 feet).
Maximum stage known at present site, 33.5 feet from floodmark, probably on Dec. 29, 1937 (discharge not determined).
Remarks.- Records good except those for periods of no gage-height record, which are poor. A few small diversions above station for irrigation; no diversion around station. Some diurnal fluctuation during periods of low flow caused by millpond above station.
Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29

2.0	31	5.4	356	19.0	2,770
2.3	49	6.6	504	22.0	3,670
2.6	69	8.0	695	24.0	4,515
3.0	101	10.0	995	26.0	5,690
3.4	136	13.0	1,480	28.0	7,960
4.3	227	16.0	2,050		

Dec. 30 to Sept. 30

2.0	37
2.3	57
2.6	78
3.0	106

Note.- Same as preceding table above 3.4 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	73	2,940	4,250	2,090	2,160	797	357	a145	190	62	39
2	43	68	2,050	3,770	2,750	1,940	744	334	a140	156	59	39
3	44	128	1,790	4,200	3,210	2,230	702	313	a140	136	57	38
4	40	104	2,140	4,170	2,560	2,020	673	302	a140	124	54	39
5	42	87	2,200	5,290	2,190	1,730	629	288	a150	116	53	39
6	41	87	2,880	4,900	4,430	1,570	589	277	a160	108	52	43
7	39	112	4,580	4,080	6,400	1,410	556	267	a190	103	51	44
8	38	117	4,630	4,390	4,970	1,250	579	271	a170	105	50	41
9	38	120	3,350	3,670	3,500	1,130	670	260	a150	215	49	38
10	37	501	2,370	2,860	2,680	1,050	858	285	a130	179	48	36
11	37	845	1,850	2,200	2,280	1,020	1,370	231	a120	138	44	33
12	39	916	1,520	1,790	1,890	1,830	1,230	220	115	128	43	33
13	39	1,030	1,280	1,540	1,650	3,610	1,030	214	114	119	43	34
14	39	812	1,110	1,360	1,470	3,090	896	208	116	111	44	36
15	39	810	988	1,210	1,330	3,130	802	203	147	110	44	42
16	39	1,030	902	1,100	1,200	3,840	728	200	135	108	44	117
17	39	1,460	868	995	1,140	3,100	667	a195	126	102	42	117
18	39	1,490	784	916	1,090	2,500	622	a190	119	96	39	73
19	40	2,470	706	875	994	1,960	582	a185	112	91	38	58
20	39	2,300	671	806	920	1,650	564	a180	104	85	38	51
21	42	1,500	950	792	893	1,430	547	a175	98	80	38	47
22	45	1,070	1,110	2,600	910	1,310	503	a175	95	77	36	46
23	53	864	1,390	3,420	1,030	1,350	470	a200	96	72	36	45
24	51	725	2,510	3,900	1,080	1,340	445	a190	99	70	35	42
25	46	864	2,600	5,050	1,270	1,260	422	a180	128	66	34	41
26	44	1,720	2,540	4,140	1,160	1,180	409	a200	124	63	34	40
27	43	6,530	2,750	2,820	1,680	1,130	398	a210	110	63	34	39
28	47	7,770	4,250	2,100	2,490	1,110	374	a200	107	64	35	a40
29	54	5,560	9,300	1,930	-	1,050	388	a190	174	60	34	a40
30	61	4,240	7,130	1,770	-	954	396	a180	259	62	37	a50
31	73	-	5,520	1,590	-	863	-	a160	-	63	39	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,354	73	37	43.7	0.182	0.21	2,690
November	45,403	7,770	68	1,513	6.30	7.04	90,060
December	79,659	9,300	671	2,570	10.7	12.34	158,000
Calendar year 1945	364,485	9,300	33	999	4.16	54.49	723,000
January	84,484	5,290	792	2,725	11.4	13.09	167,600
February	59,257	6,400	893	2,116	8.82	9.18	117,500
March	55,197	3,840	863	1,781	7.42	8.55	109,500
April	19,640	1,370	374	655	2.73	3.04	38,960
May	7,040	357	160	227	.946	1.09	13,960
June	4,013	190	95	134	.558	.62	7,960
July	3,260	215	60	105	.438	.51	6,470
August	1,346	62	34	43.4	.181	.21	2,670
September	1,420	117	33	47.3	.197	.22	2,820
Water year 1945-46	382,073	9,300	33	992	4.13	56.10	718,200

Peak discharge.- Nov. 27 (10:30 p.m.) 10,600 sec.-ft.; Dec. 29 (1 p.m.) 10,600 sec.-ft.; Feb. 7 (3 a.m.) 8,850 sec.-ft.
a No gage-height record; discharge computed on basis of records for stations near Hoskins and at Pedee.

Mill Creek at penitentiary annex, near Salem, Oreg.

Location.- Water-stage recorder, lat. 44°52'55", long. 122°58'35", in NE¼ sec. 18, T. 8 S., R. 2 W., at State penitentiary annex, 2½ miles downstream from Battle Creek, 5 miles southeast of Salem, and 7 miles upstream from mouth.

Records available.- October 1940 to September 1946 in reports of Geological Survey. November 1938 to September 1940 in files of Oregon State engineer.

Extremes.- Maximum discharge during year, 2,960 second-feet Nov. 27, 28 (gage height, 5.85 feet); minimum, 58 second-feet (regulated) July 2-4; minimum daily, 58 second-feet July 3.

1938-46: Maximum discharge, 3,880 second-feet Feb. 7, 1943 (gage height, 6.95 feet), from rating curve extended above 2,600 second-feet; minimum, 44 second-feet July 13, 1939.

Maximum discharge known, 8,320 second-feet Dec. 29, 1937, computed by velocity-area method on basis of discharge measurement of 7,300 second-feet made that day.

Remarks.- Records good except those for Nov. 28 to Mar. 15, which are fair. Salem power canal diverts water from North Santiam River at Stayton into Mill Creek; some diversions from canal and creek above station for irrigation. Flow diverted for irrigation on left bank between gage and control is not included in record. Diurnal fluctuation caused by changes at head gates and small power plants above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 29 to Feb. 6)

Oct. 1 to Nov. 28				Nov. 28 to Sept. 30					
1.2	162	3.1	830	0.8	47	2.1	415	4.5	1,640
1.5	232	3.5	1,030	1.0	94	2.5	560	5.0	2,080
1.9	350	4.1	1,420	1.2	149	3.0	765	5.6	2,670
2.3	490	4.7	1,880	1.4	206	3.5	1,000		
2.7	650	5.4	2,500	1.7	295	4.0	1,290		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	195	220	778	796	608	584	400	229	189	143	160	183
2	200	232	612	975	608	696	382	220	183	62	157	183
3	197	156	544	846	604	774	364	215	180	58	160	183
4	195	154	513	1,040	520	640	349	215	180	72	124	180
5	193	154	540	1,200	576	568	328	212	186	169	166	203
6	188	166	580	846	1,650	524	316	209	189	171	163	206
7	188	168	1,120	1,030	1,590	454	307	203	189	171	169	200
8	183	164	980	1,120	960	412	325	209	183	192	163	197
9	185	177	668	734	788	382	352	206	194	206	160	186
10	188	212	592	688	860	382	385	203	192	206	155	169
11	188	246	502	560	855	400	412	200	183	209	146	166
12	183	275	418	474	632	1,190	358	197	180	209	152	160
13	177	249	361	432	560	1,320	334	192	183	197	155	160
14	185	222	316	457	596	873	313	189	200	197	157	163
15	183	224	283	415	552	1,010	298	189	209	194	152	177
16	188	308	271	382	510	842	286	186	212	189	141	197
17	188	420	334	358	502	955	286	180	212	192	146	203
18	188	594	397	349	474	1,040	280	177	206	180	166	183
19	190	960	358	331	440	720	277	174	194	163	171	171
20	193	582	355	316	422	676	277	174	189	177	166	171
21	195	413	471	331	409	596	265	171	171	174	160	163
22	197	338	457	864	406	588	265	163	174	174	169	166
23	202	287	468	708	415	556	256	166	177	183	169	155
24	195	272	624	1,350	454	528	244	163	183	183	169	152
25	193	420	600	1,140	492	502	238	171	189	174	171	157
26	190	943	734	708	440	468	241	194	192	174	166	163
27	195	2,480	712	560	708	471	235	206	192	174	171	155
28	197	2,600	1,400	513	783	468	229	209	194	174	174	146
29	200	1,740	1,670	668	-	584	250	200	200	171	183	157
30	212	1,100	1,250	584	-	488	244	194	200	174	189	143
31	222	-	960	528	-	429	-	192	-	174	174	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,973	222	177	193	11,850
November	16,476	2,600	154	549	32,680
December	19,868	1,670	271	641	39,410
Calendar year 1945	143,496	2,600	88	393	284,600
January	21,303	1,350	316	687	42,250
February	18,414	1,650	406	658	36,520
March	20,120	1,320	382	649	39,910
April	9,096	412	229	303	18,040
May	6,008	229	163	194	11,920
June	5,705	212	171	190	11,320
July	5,286	209	58	171	10,480
August	5,024	189	124	162	9,960
September	5,198	206	143	173	10,310
Water year 1945-46	138,471	2,600	58	379	274,600

Mill Creek at Salem, Oreg.

Location.- Water-stage recorder, lat. 44°56'05", long. 123°01'00", in NE¼ sec. 26, T. 7 S., R. 3 W., at State Street Bridge in Salem, 220 feet downstream from 19th Street diversion. Datum of gage is 165.50 feet above mean sea level (datum of 1929).

Records available.- October 1940 to September 1946 in reports of Geological Survey. July 1938 to September 1940 in files of Oregon State engineer.

Extremes (regulated).- Maximum discharge during year, 950 second-feet Nov. 27 (gage height, 4.98 feet); minimum, 7 second-feet May 23.
1938-46: Maximum discharge recorded, 1,110 second-feet Feb. 7, 1943 (gage height, 5.53 feet, from floodmark); no flow Oct. 2, 1939.

Remarks.- Records fair. Salem power canal diverts water into Mill Creek near Stayton; several diversions from Mill Creek, including Shelton flood bypass 1¼ miles upstream, and 19th Street power diversion 220 feet upstream. Diurnal fluctuation caused by power plants above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 18)

0.7	18	2.1	250
.8	27	2.5	339
1.0	48	3.1	479
1.2	74	3.7	625
1.4	106	4.5	825
1.7	163		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	80	287	316	309	281	204	92	56	117	34	47
2	59	88	272	378	307	301	193	86	53	58	37	46
3	54	41	252	385	376	341	184	82	52	56	34	53
4	52	28	248	426	285	296	167	86	55	60	26	49
5	54	35	254	491	287	285	153	80	53	180	46	63
6	52	31	263	390	600	254	147	71	52	176	48	60
7	50	38	422	413	635	226	139	73	58	157	52	59
8	48	28	422	462	426	208	155	80	53	82	50	60
9	47	40	296	325	344	193	167	73	50	94	48	55
10	50	70	263	307	424	188	178	76	61	101	42	46
11	49	104	217	265	378	197	197	67	54	99	36	45
12	49	126	161	235	292	394	171	59	52	94	40	42
13	44	113	161	210	265	534	155	52	54	92	49	42
14	52	89	147	215	274	396	124	58	64	134	47	44
15	49	88	128	202	252	422	147	48	64	68	40	45
16	49	141	117	184	239	380	137	55	70	60	33	59
17	53	230	145	171	230	383	120	52	78	64	30	61
18	47	364	186	165	224	455	124	49	70	58	40	53
19	50	443	165	165	204	330	119	47	63	53	46	53
20	52	316	161	165	204	307	120	52	59	61	42	46
21	53	235	221	171	193	276	188	50	53	53	36	45
22	59	197	239	376	193	276	115	42	54	58	40	40
23	61	155	232	328	197	268	96	41	54	61	41	37
24	52	126	296	496	208	350	36	44	53	67	41	38
25	59	199	283	469	235	250	80	53	55	61	45	38
26	54	413	339	332	210	239	91	56	64	56	38	40
27	61	696	328	332	307	237	91	68	61	50	48	35
28	60	815	508	270	344	237	64	61	71	29	48	30
29	61	595	612	330	-	276	92	74	77	35	49	32
30	68	339	457	305	-	243	98	53	67	36	59	30
31	76	-	383	283	-	215	-	63	-	35	42	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,687	76	44	54.4	3,350
November	6,263	815	28	209	12,420
December	8,465	612	117	273	16,790
Calendar year 1945	57,301	815	10	157	113,600
January	9,562	496	165	308	18,970
February	8,442	635	193	302	16,740
March	9,218	534	188	297	8,280
April	4,052	204	36	135	8,040
May	1,943	92	41	62.7	3,850
June	1,780	78	50	59.3	3,530
July	2,405	180	29	77.6	4,770
August	1,307	59	26	42.2	2,590
September	1,393	63	30	46.4	2,760
Water year 1945-46	56,517	815	26	155	112,100

South Yamhill River near Willamina, Oreg.

Location.- Water-stage recorder, lat. 45°03', long. 123°30', in sec. 14, T. 6 S., R. 7 W., a third of a mile upstream from Wallace Bridge, 2 miles upstream from Willamina Creek, and 2 miles southwest of Willamina. Datum of gage is 235.01 feet above mean sea level, datum of 1929.

Drainage area.- 133 square miles.

Records available.- May 1934 to September 1946.

Average discharge.- 12 years, 553 second-feet.

Extremes.- Maximum discharge during year, 10,700 second-feet Feb. 6 (gage height, 11.87 feet); minimum, 16 second-feet Sept. 27, 28 (gage height, 0.59 foot).
1934-46: Maximum discharge, 14,000 second-feet Dec. 27, 1937 (gage height, 14.08 feet); minimum, 3 second-feet (regulated) Aug. 22, 1938, Oct. 16, 1942; minimum daily, 7 second-feet Aug. 22, 1938.

Remarks.- Records good except those for period of no gage-height record, which are fair. Slight regulation occasionally during summer by millpond upstream; no diversion above station.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating table, water year 1945-46 (gage height, in feet, and discharge in second-feet)

0.5	11	1.2	112	2.6	630	6.0	3,170
.6	17	1.4	168	3.0	830	7.0	4,270
.7	25	1.6	229	3.6	1,170	8.5	6,040
.8	36	1.9	329	4.2	1,580	10.0	8,030
1.0	66	2.2	445	5.0	2,200		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	79	1,520	2,120	1,990	1,290	413	a230	87	159	36	23
2	32	214	1,240	3,370	2,730	1,390	386	a220	83	134	35	25
3	30	217	1,820	2,740	2,170	1,400	362	a210	83	120	33	27
4	32	159	1,670	4,160	1,660	1,180	340	a200	83	110	33	27
5	30	131	1,710	4,880	3,320	1,030	315	a190	79	97	32	29
6	30	123	3,140	3,200	7,790	951	298	a180	100	90	30	34
7	29	123	3,340	3,910	3,820	830	287	a220	102	85	29	26
8	29	128	2,370	3,280	2,360	720	340	a190	90	123	29	24
9	28	461	1,740	2,330	1,800	635	417	a170	85	207	27	23
10	28	1,100	1,400	1,790	1,470	576	906	a160	74	139	26	23
11	27	984	1,160	1,350	1,170	544	1,320	a155	72	120	26	20
12	28	1,450	956	1,090	990	1,840	946	a150	68	110	26	20
13	32	1,020	795	918	868	1,720	770	a145	66	100	27	21
14	33	951	695	780	780	1,390	665	a140	92	94	27	20
15	34	1,140	610	690	700	2,710	571	a135	123	92	26	23
16	34	1,420	553	615	635	2,090	508	a130	97	85	24	44
17	34	1,660	526	548	620	1,770	463	a120	87	76	23	35
18	34	3,250	472	526	571	1,580	429	a115	81	66	23	27
19	35	2,860	425	499	526	1,110	393	a110	74	63	23	23
20	35	1,740	409	454	512	924	413	h107	68	56	21	22
21	37	1,180	576	558	530	780	374	a107	64	51	20	23
22	40	890	775	2,070	540	775	333	a110	64	48	20	23
23	45	715	1,910	1,810	725	765	308	a110	68	46	20	22
24	46	675	2,450	4,520	815	810	291	102	74	45	19	20
25	46	1,220	1,900	3,280	858	750	a280	100	120	44	19	19
26	45	5,750	1,960	2,140	755	680	a280	110	94	41	19	17
27	44	6,640	2,210	1,590	1,740	645	a260	110	85	41	19	16
28	51	3,480	6,380	1,340	1,560	580	a250	112	110	40	19	18
29	54	2,470	8,960	1,230	-	540	294	112	223	37	21	19
30	66	1,940	4,280	1,030	-	490	a260	97	186	40	22	24
31	83	-	2,850	1,220	-	454	-	90	-	39	23	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,184	83	27	38.2	0.287	0.33	2,350
November	44,170	6,640	79	1,472	11.1	12.35	87,610
December	58,802	6,960	409	1,897	14.3	16.44	116,600
Calendar year 1945	276,600	6,960	14	758	5.70	77.33	548,600
January	60,038	4,880	454	1,937	14.6	16.79	119,100
February	44,005	7,790	512	1,572	11.8	12.30	87,280
March	32,749	2,710	454	1,056	7.94	9.16	64,960
April	13,472	1,320	250	449	3.38	3.77	26,720
May	4,437	230	90	143	1.08	1.24	8,800
June	2,782	223	64	92.7	.697	.78	5,520
July	2,598	207	37	83.8	.630	.73	5,150
August	777	36	19	25.1	.189	.22	1,540
September	717	44	16	23.9	.180	.20	1,420
Water year 1945-46	265,731	7,790	16	728	5.47	74.30	527,000

a No gage-height record; discharge computed on basis of records for Willamina Creek near Willamina
h Computed from staff-gage reading.

South Yamhill River near Whiteson, Oreg.

Location.- Water-stage recorder, lat. 45°10'10", long. 123°12'25", in NW¼ sec. 5, T. 5 S., R. 4 W., at Whiteson Bridge on Pacific Highway West, 1 mile downstream from Salt Creek, and 1½ miles northwest of Whiteson. Datum of gage is 82.30 feet above mean sea level, datum of 1929.

Drainage area.- 502 square miles.

Records available.- July 1940 to September 1946.

Extremes.- Maximum discharge during year, 23,000 second-feet Feb. 6 (gage height, 41.66 feet), from rating curve extended above 17,000 second-feet; minimum, 32 second-feet Aug. 27 (gage height, 1.28 feet).
1940-46: Maximum discharge, that of Feb. 6, 1946; maximum gage height, 41.91 feet Apr. 1, 1943; minimum discharge, 18 second-feet Aug. 23, 1941, Sept. 14, 1944.

Remarks.- Records fair except those above 7,000 second-feet, which are poor. Slight regulation during low-water periods from log ponds upstream. Small diversions above station for irrigation.

Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	166	6,400	9,040	4,710	3,930	1,600	678	235	338	81	46
2	68	149	4,620	7,800	5,690	3,560	1,440	628	221	278	77	48
3	66	374	3,930	8,570	6,420	4,040	1,350	560	209	244	77	50
4	64	244	5,250	8,460	5,620	3,810	1,280	533	210	222	73	50
5	64	192	5,080	12,900	4,770	3,340	1,200	501	208	203	70	56
6	61	197	5,280	11,600	14,400	2,930	1,110	481	210	187	67	59
7	60	212	6,980	9,480	18,500	2,690	1,030	496	246	171	66	62
8	60	236	8,110	10,000	11,400	2,550	1,040	701	228	175	65	57
9	59	245	6,670	8,680	8,520	2,080	1,280	558	213	294	66	50
10	55	1,130	5,080	6,540	5,860	1,900	a2,000	514	209	303	59	47
11	57	2,020	3,960	4,930	4,550	1,790	h3,210	465	202	234	54	45
12	56	1,940	3,270	3,780	3,720	3,000	h2,880	427	192	208	58	39
13	57	2,250	2,640	3,110	3,170	5,600	a2,500	400	183	190	51	38
14	57	1,660	2,240	2,660	2,810	5,080	2,000	382	180	177	50	39
15	58	1,720	1,940	2,320	2,520	5,680	1,740	376	223	174	54	45
16	59	2,160	1,730	2,060	2,280	7,640	1,520	362	234	169	56	58
17	57	2,970	1,620	1,870	2,100	6,450	1,380	342	210	159	51	88
18	58	3,660	1,510	1,720	2,020	5,200	1,260	321	193	148	49	77
19	64	5,760	1,350	1,640	1,870	4,160	1,180	307	178	136	45	62
20	61	5,600	1,250	1,410	1,730	3,380	1,160	298	164	125	45	54
21	63	3,680	1,610	1,400	1,680	2,820	1,130	288	154	116	39	52
22	69	2,310	2,230	3,400	1,720	2,470	995	282	151	109	41	47
23	87	1,680	3,420	4,970	1,960	2,480	914	280	156	98	37	54
24	94	1,380	5,490	5,800	2,150	2,560	850	276	162	92	36	47
25	76	1,660	5,880	8,470	2,550	2,640	802	259	194	88	40	40
26	69	3,640	5,450	7,950	2,360	2,490	772	270	215	88	37	39
27	70	15,800	5,420	5,800	2,950	2,370	745	295	185	85	34	37
28	91	16,900	6,700	4,360	4,350	2,300	688	276	181	85	35	35
29	111	10,600	14,700	3,890	-	2,200	695	275	260	82	39	35
30	109	8,840	15,900	3,600	-	2,020	766	260	415	78	42	39
31	156	-	11,900	3,400	-	1,800	-	241	-	82	45	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	2,205	156	55	71.1	0.142	0.16	4,370
November	99,375	16,900	149	3,312	6.60	7.36	197,100
December	157,610	15,900	1,250	5,084	10.1	11.68	312,600
Calendar year 1945	696,701	16,900	30	1,909	3.80	51.61	1,382,000
January	171,610	12,900	1,400	5,536	11.0	12.71	340,400
February	132,380	18,500	1,680	4,728	9.42	9.81	262,600
March	104,960	7,640	1,790	3,386	6.75	7.78	208,200
April	40,517	3,210	688	1,351	2.69	3.00	80 360
May	12,332	701	241	398	.793	.91	24,460
June	6,221	415	151	207	.412	.46	12,340
July	5,138	338	78	166	.331	.38	10,190
August	1,639	81	34	52.9	.105	.12	3,250
September	1,495	88	35	49.8	.099	.11	2,970
Water year 1945-46	735,482	18,500	34	2,015	4.01	54.48	1,459,000

a No gage-height record; discharge computed on basis of records for South Yamhill River and Willamina Creek near Willamina.
h Computed from staff-gage reading.
Note.- Stage-discharge relation variable at high flows; shifting-control method used Nov. 27-30, Dec. 29 to Jan. 1, Jan. 5-7, 9, Feb. 6-9 on basis of 7 discharge measurements made during those periods.

Willamina Creek near Willamina, Oreg.

Location.- Water-stage recorder, lat. 45°08'35", long. 123°29'40", in N½ sec. 13, T. 5 S., R. 7 W., 4 miles north of Willamina. Datum of gage is 315.1 feet above mean sea level (from river-profile survey).

Drainage area.- 65 square miles.

Records available.- June 1934 to September 1946.

Average discharge.- 12 years, 222 second-feet.

Extremes.- Maximum discharge during year, 3,890 second-feet Dec. 28 (gage height, 8.4 feet); minimum, 12 second-feet Sept. 10, 11, 24-30.
1934-46: Maximum discharge, 5,720 second-feet Dec. 27, 1937 (gage height, 9.83 feet, present datum); minimum, 9 second-feet Sept. 3, 4, 1934, Sept. 9, 1935, Aug. 8-10, 19, Sept. 22-27, 1939, Aug. 17, 18, 1940.

Remarks.- Records good except those for Dec. 29 to Feb. 4, which are poor, and those for July 8-17, which are fair. No regulation or diversion above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27						Dec. 28 to Sept. 30					
1.3	14	2.3	107	4.0	605	1.2	11	2.3	110	4.0	600
1.5	21	2.6	164	4.5	825	1.4	16	2.6	170	4.5	805
1.7	33	2.9	230	5.0	1,075	1.7	31	2.9	245	5.0	1,040
1.9	51	3.3	345	5.5	1,350	1.9	47	3.3	360	5.5	1,310
2.1	75	3.6	450	6.2	1,810	2.1	72	3.6	455	6.5	1,990

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	31	609	900	700	522	242	128	52	48	21	15
2	16	104	501	1,100	1,000	588	230	122	50	44	20	14
3	17	58	561	1,000	800	604	222	116	51	42	19	16
4	17	42	509	1,300	650	536	210	110	50	41	18	16
5	16	42	525	1,500	800	480	198	106	50	38	18	16
6	15	48	900	1,100	1,940	444	188	102	58	37	18	16
7	15	59	1,080	1,300	1,310	399	180	124	54	36	18	16
8	15	56	880	1,100	970	363	212	112	50	44	18	15
9	14	157	699	850	800	330	252	104	48	60	17	14
10	15	339	577	650	692	312	448	96	46	50	16	13
11	15	303	497	550	576	303	580	88	44	47	16	13
12	16	401	418	450	504	744	462	85	43	44	17	13
13	16	276	356	390	452	668	396	83	43	42	18	13
14	16	267	312	350	405	576	351	81	51	40	17	14
15	16	327	279	320	375	854	312	79	49	39	17	16
16	16	450	252	290	345	778	282	76	47	36	16	20
17	17	621	238	260	333	712	255	71	45	33	16	17
18	16	1,250	218	250	315	608	240	68	42	31	15	16
19	17	920	203	240	297	528	220	65	39	28	14	14
20	18	597	203	220	279	458	218	64	36	26	14	14
21	19	429	235	250	270	402	198	64	34	24	14	15
22	32	327	273	700	270	390	182	65	37	23	14	14
23	24	261	598	650	318	378	170	65	39	22	14	13
24	20	235	802	1,400	330	399	162	62	49	22	13	12
25	19	370	690	1,100	351	387	154	62	52	22	13	12
26	22	1,440	726	800	330	360	152	76	43	22	13	12
27	32	1,760	996	650	542	342	142	69	41	22	13	12
28	28	1,140	2,700	550	568	318	136	68	48	20	13	12
29	26	910	3,000	500	-	306	154	62	65	22	14	12
30	32	753	1,700	450	-	279	138	57	57	22	16	15
31	35	-	1,200	500	-	258	-	55	-	20	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	609	35	14	19.6	0.302	0.35	1,210
November	13,973	1,760	31	466	7.17	7.99	27,720
December	22,757	3,000	203	733	11.3	13.01	45,100
Calendar year 1945	108,746	3,000	13	298	4.58	82.21	215,700
January	21,670	1,500	220	699	10.8	12.40	42,980
February	16,522	1,940	270	590	9.08	9.45	32,770
March	14,626	854	258	472	7.26	8.37	29,010
April	7,286	580	136	243	3.74	4.17	14,450
May	2,585	128	55	83.4	1.28	1.48	5,130
June	1,413	65	34	47.1	.725	.81	2,800
July	1,047	60	20	33.8	.520	.60	2,080
August	496	21	13	16.0	.246	.28	984
September	430	20	12	14.3	.220	.25	853
Water year 1945-46	103,394	3,000	12	283	4.35	59.16	205,100

Peak discharge.- Nov. 26 (5:30 p.m.) 2,380 sec.-ft.; Nov. 27 (2:30 a.m.) 2,340 sec.-ft.; Dec. 28 (about 11 p.m.) 3,890 sec.-ft.; Feb. 6 (5 a.m.) 2,430 sec.-ft.

Note.- No gage-height record Dec. 29 to Feb. 5, July 8-17; discharge computed on basis of records for South Yamhill near Willamina.

North Yamhill River near Pike, Oreg.

Location.- Water-stage recorder, lat. 45°22'15", long. 123°17'10", in NE¼ sec. 27, T. 2 S., R. 5 W., 1½ miles downstream from Haskins Creek and 1½ miles west of Pike. Datum of gage is 249.2 feet above mean sea level (Corps of Engineers, War Department, bench mark).

Drainage area.- 48 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 3,130 second-feet Feb. 6 (gage height, 7.43 feet); minimum, 8.6 second-feet Sept. 29, 30.
1940-46: Maximum discharge, 3,830 second-feet Dec. 18, 1941 (gage height, 8.24 feet), affected by release of water from log pond upstream; minimum, 4.2 second-feet (regulated) Sept. 11, 1944; minimum daily, 6.0 second-feet Sept. 10, 1944.

Remarks.- Records good except those below 30 second-feet, which are fair. Occasional diurnal fluctuations caused by small dams upstream; no seasonal regulation. Water supply for city of McMinnville is diverted from Haskins Creek above station, mean annual diversion in water year 1945-46 being 0.97 second-foot.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 14 to Nov. 9, June 16 to July 15)

Oct. 1 to July 15						July 16 to Sept. 30	
1.0	9.0	1.8	105	3.6	675	0.9	5
1.1	16	2.0	147	4.2	965	1.0	11
1.2	24	2.3	219	5.0	1,420	1.1	18
1.4	45	2.7	332	6.0	2,050	1.2	27
1.6	71	3.1	470				

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	17	414	574	698	446	184	91	40	36	17	13
2	12	31	345	910	875	478	175	74	38	33	16	12
3	13	26	463	711	622	474	170	71	38	31	15	12
4	13	22	435	1,030	486	404	161	67	38	30	14	12
5	13	23	498	985	1,060	352	149	65	38	28	14	14
6	12	26	940	724	1,920	323	143	63	38	28	14	13
7	12	27	875	975	1,030	289	138	74	37	27	14	12
8	12	25	606	775	716	261	165	65	36	43	14	12
9	11	65	474	606	594	237	175	63	36	45	13	10
10	12	182	393	502	506	227	324	58	56	36	12	9.8
11	12	175	329	414	424	224	442	56	35	32	12	9.2
12	12	214	278	355	372	582	335	53	33	30	13	9.8
13	12	199	240	310	329	502	278	52	33	28	14	9.8
14	12	214	212	275	301	442	240	52	35	27	14	10
15	12	284	192	248	278	594	214	51	34	27	14	14
16	12	362	177	227	258	510	192	49	36	27	13	14
17	12	438	165	209	256	502	177	47	35	25	12	13
18	12	845	152	196	245	424	165	45	32	23	12	12
19	12	594	140	182	229	372	154	43	30	22	11	10
20	13	414	145	172	222	323	156	42	28	20	10	10
21	14	316	204	249	229	289	138	42	26	19	10	10
22	23	258	219	510	248	261	127	42	26	18	10	10
23	16	216	376	486	292	278	119	43	28	17	10	9.8
24	13	172	534	1,080	320	304	115	46	33	17	9.8	9.8
25	12	310	449	752	329	261	109	45	34	17	10	9.2
26	12	1,690	486	542	310	258	109	55	32	17	11	9.2
27	19	1,280	681	432	558	264	100	49	32	17	11	9.8
28	18	805	1,540	382	546	242	98	46	41	16	11	9.8
29	19	634	1,380	345	-	237	107	45	49	16	12	9.8
30	22	518	925	292	-	214	100	43	42	17	14	14
31	18	-	688	421	-	196	-	42	-	17	14	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	429	23	11	13.8	0.287	0.33	851
November	10,382	1,690	17	346	7.21	8.04	20,590
December	14,955	1,540	140	482	10.0	11.59	29,660
Calendar year 1945	76,305.0	1,990	8.5	209	4.35	59.12	151,300
January	15,871	1,080	172	512	10.7	12.30	31,480
February	14,253	1,920	222	509	10.6	11.04	28,270
March	10,810	594	196	349	7.27	8.38	21,440
April	5,259	442	98	175	3.65	4.07	10,430
May	1,679	91	42	54.2	1.13	1.30	3,330
June	1,049	49	26	35.0	.729	.81	2,080
July	786	45	16	25.4	.529	.61	1,560
August	390.8	17	9.8	12.6	.262	.30	775
September	333.0	14	9.2	11.1	.231	.26	660
Water year 1945-46	76,196.8	1,920	9.2	209	4.35	59.03	151,100

Peak discharge.- Nov. 26 (2:30 p.m.) 2,900 sec.-ft.; Dec. 28 (2:30 p.m.) 1,900 sec.-ft.; Dec. 29 (9 a.m.) 1,560 sec.-ft.; Feb. 6 (1:30 a.m.) 3,130 sec.-ft.

Haskins Creek near McMinnville, Oreg.

Location.- Water-stage recorder and wooden control, lat. 45°18'50", long. 123°21'55", in NE¼ sec. 13, T. 3 S., R. 6 W., 300 feet upstream from high-water line of McMinnville water-supply reservoir and 11 miles northwest of McMinnville.

Drainage area.- 5.7 square miles.

Records available.- October 1928 to September 1946.

Average discharge.- 18 years, 24.6 second-feet (adjusted for diversion, 1937-46).

Extremes (not adjusted for diversion).- Maximum discharge during year not recorded (inlet closed); minimum, 0.9 second-foot Sept. 29, 30.
1928-46: Maximum discharge, 610 second-feet Mar. 31, 1931 (gage height, 4.00 feet, before control was built); minimum prior to diversion above station, 1.0 second-foot Oct. 8, 1932.

Remarks.- Records poor. Since Sept. 2, 1937, a small amount of water has been diverted at a point 800 feet upstream into a 12-inch steel pipe, which delivers it into intake of McMinnville water-supply pipe line below reservoir. No regulation.

Cooperation.- Water-stage recorder inspected by employees of city of McMinnville.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	4.1	63	79	62	72	25	12	6.7	6.3	2.9	2.9
2	1.6	6.1	53	112	67	81	25	12	6.3	5.7	2.5	2.5
3	1.8	4.8	56	96	62	76	24	11	6.3	5.3	2.1	2.7
4	1.8	4.1	50	135	56	66	23	11	6.3	5.3	2.1	2.7
5	1.8	4.4	53	149	120	57	21	10	6.7	5.0	2.1	2.9
6	1.8	4.8	109	116	280	53	21	10	7.0	4.3	2.5	2.9
7	1.6	4.4	100	137	199	46	20	12	6.7	3.9	2.7	2.7
8	1.6	4.1	85	114	145	40	23	9.8	6.7	7.4	2.7	2.5
9	1.8	14	69	90	118	36	24	9.3	6.3	7.4	2.3	2.3
10	1.8	22	56	74	96	35	39	8.8	6.3	6.0	2.1	2.1
11	2.0	22	48	62	79	37	47	8.8	6.0	5.3	2.3	2.0
12	2.0	26	43	52	66	94	40	8.8	5.7	5.3	2.5	2.1
13	2.0	22	39	46	57	78	34	8.2	5.3	4.6	2.9	2.0
14	2.0	26	34	39	51	70	29	8.2	6.0	4.6	2.9	2.5
15	2.2	32	32	35	46	81	25	8.2	6.0	4.3	2.9	2.7
16	2.2	38	29	33	42	74	24	7.7	6.3	4.1	2.9	2.7
17	2.2	45	28	30	41	76	21	7.7	6.3	3.3	2.5	2.5
18	2.2	67	25	29	39	64	21	7.4	5.7	3.1	2.3	2.3
19	2.4	52	23	26	37	56	19	7.4	4.3	2.5	2.1	2.0
20	2.4	43	23	25	36	49	19	7.4	3.7	2.1	2.0	2.0
21	3.3	35	28	34	38	46	18	7.4	3.5	2.1	2.0	2.1
22	4.1	27	32	39	40	45	17	7.4	3.9	1.8	1.8	2.3
23	3.0	22	52	35	45	41	15	7.4	4.6	1.7	1.8	2.3
24	3.0	22	68	64	51	41	15	7.4	5.7	1.7	2.1	2.1
25	2.7	37	55	61	51	39	14	7.4	5.7	1.3	2.3	2.1
26	3.3	139	53	52	48	37	14	8.2	5.3	1.5	2.3	2.0
27	4.1	160	58	48	87	35	14	7.7	5.3	2.0	2.3	1.7
28	3.5	114	195	45	84	33	13	7.4	7.0	2.1	2.3	1.5
29	4.1	91	179	41	-	32	15	7.4	8.2	2.7	2.1	1.2
30	4.1	76	131	38	-	29	13	7.4	7.0	2.5	2.5	2.5
31	3.5	-	97	51	-	27	-	7.0	-	2.5	2.5	-

Month	Observed				Diversion for McMinnville water supply (acre-feet)	Adjusted for diversion			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	4.1	1.6	2.50	154	0	154	2.50	0.439	0.51
November	160	4.1	39.0	2,320	29	2,349	39.5	6.93	7.73
December	195	23	63.4	3,900	92	3,992	64.9	11.4	13.14
Calendar year 1945	195	.3	28.3	19,069	965	20,034	27.7	4.86	65.98
January	149	25	64.1	3,940	68	4,008	65.2	11.4	13.14
February	280	36	76.5	4,250	79	4,329	77.9	13.7	14.27
March	94	27	53.1	3,260	122	3,382	55.0	9.65	11.12
April	47	13	22.4	1,330	119	1,449	24.4	4.28	4.78
May	12	7.0	8.64	531	75	606	9.86	1.73	1.99
June	8.2	3.5	5.89	351	45	396	6.66	1.17	1.30
July	7.4	1.3	3.80	233	55	288	4.68	.821	.95
August	2.9	1.8	2.36	145	17	162	2.63	.461	.53
September	2.9	1.2	2.29	136	4.8	141	2.37	.416	.46
Water year 1945-46	280	1.2	28.4	20,550	705	21,256	29.4	5.16	69.92

Molalla River above Pine Creek, near Wilhoit, Oreg.

Location.- Water-stage recorder, lat. 45°01', long. 122°29', near line between secs. 30 and 31, T. 6 S., R. 3 E., 1,700 feet upstream from Pine Creek and 5 miles southeast of Wilhoit. Prior to Oct. 1, 1945 at datum 2.02 feet higher.

Drainage area.- 96 square miles.

Records available.- October 1935 to September 1946.

Average discharge.- 11 years, 470 second-feet.

Extremes.- Maximum discharge during year, 11,400 second-feet Dec. 28 (gage height, 12.86 feet), from rating curve extended above 4,400 second-feet; minimum, 34 second-feet Sept. 29, 30.

1935-46: Maximum discharge, 11,600 second-feet Nov. 23, 1942, from rating curve extended above 4,000 second-feet by velocity-area studies; maximum gage height, 12.86 feet Dec. 28, 1945; minimum discharge, 19 second-feet Aug. 30 to Sept. 2, 1940.

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

Discharge, in second-feet, water year October 1945 to September 1946.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	113	1,130	1,600	699	1,380	402	502	323	290	a70	43
2	59	403	915	1,800	726	1,120	368	530	323	257	a67	41
3	56	405	855	1,540	662	1,000	341	670	296	234	a64	41
4	54	266	915	1,910	a590	875	320	708	268	222	a61	41
5	52	281	925	2,650	a540	798	311	594	257	217	a58	49
6	50	252	2,530	1,710	2,230	980	305	510	279	207	a55	52
7	47	210	2,150	2,140	1,310	920	299	522	259	196	58	45
8	45	179	1,380	1,740	935	820	326	494	299	212	56	42
9	44	278	1,020	1,230	766	762	323	452	270	257	54	40
10	44	648	900	990	682	776	427	458	259	224	52	38
11	43	522	800	812	a640	744	670	448	244	212	51	37
12	42	780	677	708	a600	1,570	682	441	231	198	51	36
13	42	770	577	658	a580	1,420	674	427	a240	185	51	35
14	41	805	505	a600	a570	1,060	646	374	265	172	51	38
15	40	1,120	446	a550	a580	1,300	610	338	385	164	49	56
18	40	1,080	412	a500	a600	1,060	650	347	374	154	49	104
17	46	965	482	a460	a620	995	730	399	392	148	47	81
18	42	1,450	468	a440	a620	885	910	416	354	a132	45	57
19	42	1,630	426	a420	a580	a820	848	410	314	a120	45	49
20	54	995	415	a410	a540	a750	744	406	282	a110	43	44
21	47	702	672	a400	a500	a700	674	354	257	a100	42	42
22	62	554	740	1,610	a540	670	574	347	254	e94	42	42
23	63	518	860	1,200	a620	606	542	317	252	a88	41	40
24	53	558	1,350	3,220	807	554	658	296	285	a83	40	38
25	48	905	1,110	1,820	980	514	870	326	347	a78	40	37
26	45	2,780	1,190	1,160	780	602	900	466	320	a75	40	36
27	48	7,420	1,680	900	2,640	748	686	472	287	a75	39	35
28	57	4,220	8,880	758	2,080	654	570	490	335	a72	39	35
29	66	2,220	4,530	674	-	582	638	455	385	h70	44	34
30	101	1,500	2,720	a580	-	502	574	378	335	a72	50	34
31	121	-	2,080	a510	-	448	-	344	-	a71	45	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,658	121	40	53.5	0.557	0.64	3,290
November	34,529	7,420	113	1,151	12.0	13.38	68,490
December	43,720	8,880	412	1,410	14.7	16.94	86,720
Calendar year 1945	235,632	8,880	28	646	6.73	91.28	467,400
January	35,700	3,220	400	1,152	12.0	13.83	70,810
February	24,017	2,640	500	858	8.94	9.30	47,640
March	26,815	1,570	448	859	8.95	10.31	52,790
April	17,272	910	299	578	6.00	6.69	34,260
May	13,691	708	296	442	4.60	5.30	27,160
June	8,951	392	231	298	3.10	3.47	17,750
July	4,789	290	70	154	1.60	1.86	9,500
August	1,539	70	39	49.6	.517	.60	3,050
September	1,340	104	34	44.7	.466	.52	2,660
Water year 1945-46	213,821	8,880	34	586	8.10	82.84	424,100

Peak discharge.- Nov. 27 (about 9 a.m.) 8,920 sec.-ft.; Dec. 28 (4 p.m.) 11,400 sec.-ft.; Jan. 24 (8 a.m.) 4,110 sec.-ft.

a No gage-height record; discharge computed on basis of records for station near Canby.
e Result of discharge measurement.
h Computed from staff-gage reading.

Molalla River near Canby, Oreg.

Location.- Water-stage recorder, lat. 45°15', long. 122°41', in NE¼ sec. 9, T. 4 S., R. 1 E., at bridge 1½ miles south of Canby. Datum of gage is 104.56 feet above mean sea level, datum of 1929.
Drainage area.- 323 square miles.
Records available.- August 1928 to September 1946.
Average discharge.- 18 years, 991 second-feet.
Extremes.- Maximum discharge during year, 16,700 second-feet Dec. 28 (gage height, 12.25 feet); minimum, 84 second-feet Aug. 23-28, Sept. 13, 14.
1928-46: Maximum discharge, 22,300 second-feet Mar. 31, 1931 (gage height, 14.7 feet), from rating curve extended above 16,000 second-feet; minimum, 25 second-feet Sept. 14, 1938; minimum daily, 38 second-feet Sept. 7, 1935.
Remarks.- Records good except those for Nov. 26, 27, which are fair. A few small diversions above station for irrigation.
Cooperation.- Staff gage read once daily October to March by employees of U. S. Weather Bureau.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
1.9	102	3.3	1,070	7.5	6,860	2.0	84	3.5	860	7.5	6,560
2.1	175	3.8	1,600	9.0	9,740	2.2	155	3.8	1,330	9.0	9,400
2.3	278	4.4	2,260	10.0	11,800	2.4	250	4.4	2,020	10.0	11,440
2.6	476	5.2	3,240			2.6	360	5.2	3,030		
2.9	700	6.2	4,640			2.9	550	6.2	4,450		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	h167	296	h2,980	4,000	2,460	3,550	1,010	1,000	644	564	151	110
2	h159	572	h2,500	4,030	2,540	2,930	923	950	606	504	147	106
3	h134	1,000	h2,040	3,610	2,070	2,770	852	1,090	571	466	143	103
4	h134	678	h2,010	3,720	1,680	2,510	788	1,250	524	420	139	103
5	h134	700	1,950	5,730	1,570	2,210	756	1,130	478	390	136	110
6	h134	678	3,230	4,570	4,340	2,280	716	968	485	360	132	147
7	h134	625	4,740	4,630	3,830	2,250	692	932	478	344	136	132
8	h134	550	3,270	4,320	2,770	1,960	700	977	524	349	132	120
9	112	543	2,500	3,270	2,240	1,780	756	852	504	492	128	113
10	118	1,610	2,160	2,670	1,920	1,680	804	828	485	420	124	100
11	118	1,660	1,980	2,140	1,620	1,560	1,250	796	440	366	116	94
12	118	1,860	1,670	1,780	1,380	3,010	1,330	772	402	344	116	94
13	118	2,150	1,410	1,550	1,230	4,150	1,310	756	396	322	120	90
14	118	1,800	1,200	1,350	1,170	3,150	1,260	700	420	305	120	90
15	115	2,250	1,070	1,230	1,180	3,890	1,200	620	620	305	116	100
16	115	2,300	960	1,100	1,220	3,550	1,200	592	668	283	113	182
17	124	2,390	910	1,020	1,230	3,030	1,260	620	748	261	106	220
18	121	2,990	1,050	950	1,270	2,680	1,550	668	716	240	97	178
19	118	5,180	960	932	1,170	2,270	1,600	652	620	225	94	151
20	134	h5,370	900	878	1,070	1,920	1,380	652	571	210	94	128
21	138	h2,260	1,250	860	1,020	1,670	1,300	606	504	200	94	116
22	142	h1,710	1,600	2,660	1,040	1,590	1,100	557	498	191	87	116
23	180	h1,490	1,600	2,550	1,130	1,550	1,000	544	524	186	84	113
24	159	h1,380	2,200	5,620	1,350	1,400	1,090	557	544	173	84	106
25	138	h1,710	2,150	5,110	2,000	1,270	1,410	530	628	164	84	100
26	131	e5,000	2,180	3,380	1,640	1,260	1,670	724	628	160	87	97
27	134	h13,500	2,390	2,510	3,560	1,550	1,330	878	592	160	84	94
28	159	h11,200	10,300	2,080	4,870	1,470	1,100	941	592	155	84	94
29	163	h6,500	11,400	1,850	-	1,430	1,150	968	724	151	90	94
30	189	h4,340	6,670	1,550	-	1,250	1,150	828	636	155	113	94
31	319	-	5,090	1,460	-	1,120	-	708	-	155	113	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	4,411	319	112	142	0.440	0.51	8,750
November	82,292	13,500	296	2,743	8.49	9.48	163,200
December	86,320	11,400	900	2,785	8.62	9.94	171,200
Calendar year 1945	498,543	13,500	71	1,366	4.23	57.40	988,800
January	83,110	5,730	860	2,681	8.30	9.57	164,800
February	54,570	4,870	1,020	1,949	6.03	6.28	108,200
March	68,690	4,150	1,120	2,216	6.86	7.91	136,200
April	33,637	1,670	692	1,121	3.47	3.87	66,720
May	24,646	1,250	530	795	2.46	2.84	48,880
June	16,770	748	396	559	1.73	1.93	33,260
July	9,020	564	151	291	.901	1.04	17,890
August	3,464	151	84	112	.347	.40	6,870
September	3,495	220	90	116	.359	.40	6,930
Watsr year 1945-46	470,425	13,500	84	1,289	3.99	54.17	932,900

Peak discharge.- Dec. 28 (12 p.m.) 16,700 sec.-ft.; Jan. 5 (1 p.m.) 6,300 sec.-ft.; Jan. 24 (3 p.m.) 7,230 sec.-ft.
e Gage reading not representative of average stage for day; discharge computed on basis of records for station above Pine Creek, near Wilhoit.
h Computed from staff-gage reading.

Pudding River near Mount Angel, Oreg.

Location.- Water-stage recorder, lat. 45°03'49", long. 122°49'45", in SE¼ sec. 8, T. 6 S., R. 1 W., at Cline Bridge, 2 miles west of Mount Angel and 4 miles upstream from Little Pudding River. Datum of gage is 119.76 feet above mean sea level, datum of 1929. Prior to Oct. 1, 1945, wire-weight gage at same site and datum.

Drainage area.- 207 square miles.

Records available.- October 1939 to September 1946.

Extremes.- Maximum discharge observed during year, 5,000 second-feet Dec. 29 (gage height, 25.16 feet); minimum, 16 second-feet Aug. 25.
1939-46: Maximum discharge observed, 6,900 second-feet Jan. 1, 1943 (gage height, 28.85 feet); minimum observed, 9 second-feet Sept. 13, 1944 (gage height, 0.49 foot).

Remarks.- Records excellent except those above 3,500 or below 20 second-feet, which are good. Some small diversions for irrigation above station; no regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 1-10)

Oct. 1 to Nov. 27						Nov. 28 to Sept. 30					
1.2	32	4.0	259	13.0	1,615	0.6	16	3.6	211	13.0	1,750
1.6	51	5.0	384	16.0	2,130	1.0	28	4.5	305	17.0	2,550
2.0	75	6.0	522	19.0	2,875	1.5	53	6.0	520	21.0	3,350
2.5	110	8.0	817			2.0	85	8.0	830	25.0	4,900
3.2	171	10.0	1,135			2.8	143	10.0	1,180		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	109	2,970	2,940	1,420	2,180	737	398	158	142	34	27
2	42	148	2,450	2,720	1,820	1,930	673	378	144	127	32	26
3	40	261	2,030	2,800	1,520	1,970	628	378	139	115	30	23
4	40	208	1,710	2,470	1,330	1,830	580	364	132	107	28	23
5	39	211	1,530	2,880	1,240	1,600	547	329	127	101	28	25
6	38	241	1,680	2,880	2,110	1,560	517	298	137	95	26	49
7	36	269	2,540	2,720	2,850	1,520	488	303	143	86	26	42
8	34	242	2,470	2,850	2,680	1,330	520	327	136	93	26	32
9	33	249	2,100	2,570	2,290	1,190	571	283	136	203	25	27
10	32	644	1,780	2,250	2,010	1,080	624	266	136	149	23	23
11	32	804	1,540	1,920	1,800	1,020	808	242	124	122	24	21
12	32	914	1,310	1,590	1,560	1,590	811	230	113	113	23	19
13	33	999	1,110	1,340	1,330	2,670	748	220	107	107	22	19
14	33	897	951	1,150	1,180	2,470	700	211	114	106	23	20
15	33	943	837	1,010	1,040	2,410	648	202	173	101	23	27
16	35	1,060	761	895	958	2,490	610	193	170	93	22	83
17	41	1,220	753	814	901	2,310	589	183	173	84	21	82
18	45	1,350	734	758	896	2,320	595	176	157	76	21	58
19	41	2,030	664	716	840	2,050	580	166	137	68	20	39
20	44	1,930	628	670	806	1,720	550	158	120	63	18	51
21	49	1,580	729	660	779	1,450	553	155	111	57	18	27
22	53	1,240	862	1,380	793	1,270	493	150	107	50	17	25
23	68	1,040	884	1,580	808	1,170	448	150	121	44	17	24
24	60	913	1,240	2,160	850	1,070	440	144	134	41	17	23
25	51	977	1,310	2,760	1,140	976	452	156	161	38	16	22
26	46	1,290	1,450	2,420	1,050	920	493	215	150	37	18	21
27	48	2,890	1,580	1,970	1,450	910	439	230	133	38	18	20
28	75	4,480	2,910	1,630	2,340	898	385	215	135	40	16	20
29	71	4,320	4,800	1,470	-	949	450	220	180	38	17	20
30	82	3,550	4,020	1,290	-	915	470	186	157	36	23	20
31	132	-	3,330	1,150	-	820	-	172	-	36	50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,482	132	32	47.8	0.231	0.27	2,940
November	36,989	4,480	109	1,235	5.96	6.65	73,370
December	53,641	4,800	626	1,730	8.36	9.64	106,400
Calendar year	-	-	-	-	-	-	-
January	56,213	2,940	660	1,813	8.76	10.10	111,500
February	39,561	2,850	779	1,413	6.83	7.11	78,470
March	48,585	2,670	820	1,567	7.57	8.73	96,370
April	17,147	811	385	572	2.76	3.08	34,010
May	7,297	398	144	235	1.14	1.31	14,470
June	4,165	180	107	139	.671	.75	8,280
July	2,606	203	36	84.1	.406	.47	5,170
August	698	34	16	22.5	.109	.13	1,380
September	898	82	19	29.9	.144	.16	1,780
Water year 1945-46	269,282	4,800	16	738	3.57	48.40	534,100

Peak discharge.- Nov. 28 (10 p.m.) 4,740 sec.-ft.; Dec. 7 (5 p.m.) 2,600 sec.-ft.; Dec. 29 (8 to 10 a.m.) 5,000 sec.-ft.; Jan. 25 (8 a.m.) 2,810 sec.-ft.; Feb. 7 (2 p.m.) 2,900 sec.-ft.; Mar. 13 (1 p.m.) 2,710 sec.-ft.

Pudding River at Aurora, Oreg.

Location.- Wire-weight gage, lat. 45°14', long. 122°45', in SE¼ sec. 12, T. 4 S., R. 1 W., at highway bridge at Aurora, half a mile upstream from Mill Creek. Datum of gage is 76.79 feet above mean sea level, datum of 1929.

Drainage area.- 493 square miles.

Records available.- October 1928 to September 1946.

Average discharge.- 18 years, 1,070 second-feet.

Extremes.- Maximum discharge observed during year, 6,520 second-feet Nov. 29 (gage height, 17.74 feet); minimum observed, 56 second-feet Aug. 27, 28 (gage height, 0.28 foot).

1928-46: Maximum discharge, 13,800 second-feet Dec. 30, 1937 (gage height, 24.5 feet, from graph based on gage readings), from rating curve extended above 9,000 second-feet; minimum, 37 second-feet Sept. 9, 12, 1935.

Maximum stage known, 25.0 feet Jan. 9, 1923 (discharge, 14,500 second-feet, from subsequent rating curve extended above 9,000 second-feet).

Remarks.- Records fair. Gage read twice daily Oct. 1 to June 30, once daily thereafter. Small diversions above station; slight regulation at times in summer by mills on tributaries.

Rating table, water year 1945-46 (gage height, in feet, and discharge in second-feet)

0.3	58	2.4	376	8.0	1,870
.6	89	3.2	542	10.0	2,540
.9	124	4.0	726	12.0	3,300
1.3	179	5.0	975	15.0	4,650
1.8	261	6.5	1,420	18.0	6,750

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	308	5,610	5,710	2,470	3,840	1,570	765	321	309	91	77
2	110	210	5,130	5,530	2,840	3,700	1,400	683	294	275	92	80
3	105	234	4,660	5,580	2,800	3,660	1,280	666	275	250	87	74
4	102	336	4,170	5,200	2,580	3,600	1,170	673	257	224	82	75
5	100	315	3,570	5,200	2,050	3,250	1,080	641	247	212	85	71
6	99	298	3,050	5,630	3,060	2,830	1,020	591	243	204	80	75
7	98	328	3,520	5,280	4,620	2,620	945	551	261	188	79	88
8	96	352	4,100	5,250	4,750	2,400	905	655	266	178	78	110
9	91	348	4,040	5,100	4,420	2,120	960	688	257	202	78	99
10	89	388	3,610	4,660	4,060	1,910	1,050	591	254	283	77	85
11	88	880	3,170	4,200	3,790	1,770	1,210	538	247	300	75	74
12	90	1,160	2,670	3,640	3,420	1,880	1,380	495	233	243	73	69
13	89	1,350	2,180	2,820	2,880	3,720	1,350	459	213	215	75	66
14	89	1,370	1,800	2,440	2,390	4,320	1,260	436	207	210	72	65
15	89	1,300	1,530	1,990	2,020	4,460	1,170	412	223	202	73	67
16	93	1,410	1,340	1,700	1,790	5,280	1,090	388	306	192	73	74
17	98	1,730	1,220	1,500	1,620	4,890	1,030	374	332	186	72	101
18	96	1,980	1,220	1,360	1,550	4,680	1,000	358	326	184	68	163
19	105	2,760	1,150	1,270	1,490	4,390	1,010	340	306	157	70	141
20	108	3,280	1,040	1,180	1,400	3,870	960	321	268	149	65	111
21	107	3,080	1,110	1,100	1,340	3,300	915	309	236	138	64	90
22	113	2,500	1,580	1,310	1,310	2,810	905	298	216	129	62	82
23	114	1,940	1,650	2,500	1,340	2,420	825	288	216	125	59	77
24	124	1,560	1,770	3,150	1,400	2,160	788	281	235	116	58	74
25	129	1,430	2,120	4,350	1,680	1,950	762	275	257	110	58	73
26	128	1,740	2,320	4,510	1,910	1,850	795	332	287	101	57	73
27	114	3,360	2,550	4,080	1,940	1,760	820	424	283	99	56	70
28	114	5,550	3,090	3,600	5,310	1,830	746	444	261	98	56	67
29	134	6,510	4,840	3,120	-	1,930	688	420	268	101	57	66
30	158	6,130	5,890	2,800	-	2,010	780	408	321	99	61	65
31	172	-	5,910	2,370	-	1,800	-	356	-	93	67	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	3,354	172	88	108	0.219	0.25	6,650
November	54,027	6,510	208	1,801	3.65	4.08	107,200
December	91,610	5,910	1,040	2,955	5.99	6.91	181,700
Calendar year 1945	472,677	6,510	54	1,295	2.63	35.66	937,600
January	108,130	5,710	1,100	3,488	7.08	8.16	214,500
February	70,210	4,750	1,310	2,508	5.09	5.30	139,300
March	93,010	5,280	1,760	3,000	6.09	7.02	184,500
April	30,841	1,570	683	1,028	2.09	2.33	61,170
May	14,460	765	275	466	.945	1.09	28,680
June	7,914	332	207	264	.535	.60	15,700
July	5,562	309	93	179	.363	.42	11,010
August	2,200	92	56	71.0	.144	.17	4,360
September	2,492	153	65	83.1	.169	.19	4,940
Water year 1945-46	483,800	6,510	56	1,325	2.69	36.52	959,700

Butte Creek at Monitor, Oreg.

Location.- Staff gage, lat. 45°06', long. 122°45', in SE¼SE¼ sec. 25, T. 5 S., R. 1 W., at highway bridge in Monitor, 5 miles upstream from mouth.

Drainage area.- 64 square miles.

Records available.- October 1940 to September 1946 in reports of Geological Survey. January to December 1936 in files of State engineer.

Extremes.- Maximum discharge during year, 3,260 second-feet Dec. 28 (gage height, 10.9 feet, from floodmark), from rating curve extended above 1,900 second-feet; minimum observed, 8 second-feet Aug. 24-28.

1936, 1940-46: Maximum discharge observed, 4,410 second-feet Nov. 23, 1942 (gage height, 12.70 feet), from rating curve extended above 1,900 second-feet; minimum observed, 5 second-feet Sept. 7-12, 1944, Aug. 20-24, 1945.

Remarks.- Records fair. Gage read twice daily Oct. 1 to Mar. 31, once daily thereafter. Small diversions above station for irrigation. Some diurnal fluctuation caused by mills at Scotts Mills.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 26						Nov. 27 to Sept. 30					
1.8	10	2.4	61	3.7	369	1.9	9.5	3.0	167	6.0	1,117
1.9	16	2.7	99	4.2	525	2.0	15	3.3	251	7.5	1,635
2.0	23	3.0	162	4.8	717	2.2	31	3.7	370	9.5	2,480
2.2	40	3.3	247	5.4	917	2.4	53	4.3	557		
						2.7	98	5.0	784		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	59	487	797	487	688	208	151	68	63	18	16
2	16	63	425	985	484	663	180	149	63	60	17	15
3	17	70	412	880	431	608	172	146	62	56	16	14
4	17	70	416	870	376	541	157	146	58	51	16	14
5	17	77	450	989	656	474	151	141	53	47	16	16
6	16	76	777	890	1,310	519	149	139	60	43	15	19
7	15	76	1,000	1,020	949	484	151	146	58	41	15	18
8	14	70	666	896	728	422	151	157	63	46	14	17
9	14	80	512	695	595	379	154	144	66	81	14	15
10	14	167	443	570	531	358	159	134	61	63	13	13
11	14	200	349	459	437	416	239	127	51	46	13	13
12	14	214	304	379	373	817	251	123	47	42	13	12
13	14	208	263	331	304	900	245	118	43	39	12	11
14	14	205	234	274	268	672	239	108	47	37	13	11
15	13	326	200	242	257	929	231	98	81	39	13	18
16	14	357	189	205	239	784	234	91	84	38	12	37
17	17	381	178	189	236	685	239	88	78	35	11	33
18	16	691	164	183	234	595	236	86	66	30	11	27
19	15	803	151	164	239	503	228	84	61	28	11	22
20	16	653	146	146	228	443	205	78	57	26	10	17
21	17	425	189	228	214	400	200	74	53	23	9	14
22	19	283	257	595	211	364	157	70	54	22	9	14
23	22	232	274	487	216	334	154	69	60	22	9	13
24	20	220	412	1,320	358	310	167	62	62	21	8	13
25	19	338	388	949	406	283	189	69	78	22	8	12
26	17	g910	412	669	487	251	222	100	65	26	8	11
27	18	g2,660	g656	478	1,060	322	222	98	63	26	8	12
28	21	1,760	g2,270	443	956	304	180	91	62	21	8	11
29	23	1,140	1,620	412	-	310	157	86	81	19	10	11
30	34	764	1,190	334	-	257	157	81	69	19	15	11
31	53	-	1,040	319	-	228	-	72	-	19	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
Octcber	568	53	13	18.3	0.286	0.33	1,130
November	13,578	2,660	59	453	7.08	7.89	26,930
December	16,474	2,270	146	531	8.30	9.57	32,680
Calendar year 1945	88,695	2,660	5	243	3.80	51.53	175,900
January	17,398	1,320	146	561	8.77	10.11	34,510
February	13,270	1,310	211	474	7.41	7.71	26,320
March	15,243	929	228	492	7.69	8.86	30,230
April	5,784	251	149	193	3.02	3.36	11,470
May	3,326	157	62	107	1.67	1.93	6,600
June	1,874	84	43	62.5	.977	1.09	3,720
July	1,151	81	19	37.1	.580	.67	2,280
August	381	18	8	12.3	.192	.22	756
September	480	37	11	16.0	.250	.28	952
Water year 1945-46	89,527	2,660	8	245	3.83	52.02	177,600

g Computed from graph based on gage readings.

Tualatin River at Gaston, Oreg.

Location.- Staff gage, lat. 45°26'10", long. 123°10'05", in W½ sec. 34, T. 1 S., R. 4 W., 1.5 miles west of Gaston.

Drainage area.- 51 square miles at measuring section at Gaston.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge observed during year, 2,350 second-feet Feb. 6 (gage height, 9.92 feet); minimum observed, 10 second-feet Aug. 24, 26, Sept. 26, 30.
1940-46: Maximum discharge, 3,540 second-feet Dec. 19, 1941 (gage height, 13.88 feet, site and datum then in use), from rating curve extended above 2,500 second-feet; minimum observed, that of Aug. 24, 26, Sept. 26, 30, 1946.

Remarks.- Records good. Staff gage read twice daily. Slight diurnal fluctuation caused by log ponds upstream. Small diversions above station for irrigation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 26

0.3	14	1.5	90	4.0	501
.5	21	1.9	137	5.0	690
.8	36	2.4	213	6.5	995
1.1	56	3.0	321		

Nov. 27 to Sept. 30

0.1	10	1.5	100	5.0	693
.3	18	1.9	150	6.5	995
.5	28	2.4	232	8.0	1,383
.8	45	3.0	334	9.5	2,080
1.1	65	4.0	509		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	33	388	676	g712	453	195	90	46	44	18	15
2	16	42	349	g1,040	1,080	441	184	86	44	43	20	14
3	16	49	432	808	621	455	173	83	43	33	18	14
4	16	44	423	g1,170	441	376	170	80	43	32	16	15
5	16	41	423	1,330	g599	334	158	78	43	31	16	16
6	15	41	g974	878	g1,900	322	150	75	43	30	16	17
7	15	40	957	g1,080	1,110	297	146	76	41	29	16	16
8	15	40	628	922	704	289	156	79	41	37	16	14
9	15	69	437	646	540	242	153	75	41	55	16	13
10	15	236	365	516	451	227	222	70	40	41	14	12
11	15	210	324	395	385	217	388	65	39	38	13	12
12	15	271	290	341	a350	670	305	64	37	34	13	12
13	15	289	261	305	a325	590	271	64	37	32	16	12
14	15	321	235	281	a300	455	225	62	38	31	16	12
15	15	334	213	252	288	625	198	62	39	31	16	16
16	16	418	193	235	268	500	184	59	39	30	16	18
17	16	454	178	225	252	484	171	56	38	28	16	18
18	15	g870	167	215	261	423	182	55	34	27	13	15
19	15	690	167	215	244	380	147	54	33	25	12	13
20	16	379	239	201	239	331	140	52	31	24	12	12
21	16	278	242	195	246	298	136	51	30	20	12	13
22	30	220	256	g509	280	293	127	52	30	20	12	13
23	26	185	329	g527	341	285	123	52	30	18	12	12
24	20	174	538	942	351	320	116	52	34	19	11	12
25	18	281	397	g712	380	303	110	51	41	19	12	12
26	18	g960	375	495	317	286	107	64	34	17	11	11
27	30	1,620	g509	371	625	283	100	56	34	16	12	11
28	32	1,050	g1,600	337	601	263	98	54	34	18	12	13
29	28	850	g1,900	315	-	254	104	51	51	18	13	12
30	41	518	g1,200	280	-	225	98	47	48	19	17	12
31	35	-	826	392	-	205	-	47	-	18	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	602	41	15	19.4	0.380	0.44	1,190
November	11,007	1,620	33	367	7.20	8.03	21,830
December	15,815	1,900	167	510	10.0	11.53	31,370
Calendar year 1945	78,170	1,900	14	214	4.20	56.99	155,000
January	16,806	1,330	195	542	10.6	12.26	33,330
February	14,211	1,900	239	508	9.96	10.38	28,190
March	11,106	670	205	358	7.02	8.10	22,030
April	5,017	388	98	167	3.27	3.66	9,950
May	1,962	90	47	63.3	1.24	1.43	3,890
June	1,156	51	30	38.5	.755	.84	2,290
July	877	55	16	28.3	.555	.64	1,740
August	450	20	11	14.5	.284	.33	893
September	407	18	11	13.6	.267	.30	807
Water year 1945-46	79,416	1,900	11	218	4.27	57.92	157,500

a No gage-height record; discharge computed on basis of records for Scoggin Creek.
g Computed from graph based on gage readings.

Tualatin River near Dilley, Oreg.

Location.- Wire-weight gage, lat. 45°28'25", long. 123°07'20", in NW¼ sec. 24, T. 1 S., R. 4 W., at county road bridge three-quarters of a mile downstream from Scoggin Creek and 1½ miles south of Dilley. Datum of gage is 151.10 feet above mean sea level, datum of 1929.

Drainage area.- 133 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge observed during year, 5,210 second-feet Feb. 6 (gage height, 12.84 feet); minimum observed, 9 second-feet Sept. 13.
1940-46: Maximum discharge 5,360 second-feet Dec. 19, 1941 (gage height, 12.90 feet, from floodmark); minimum observed, 4 second-feet Aug. 21, 1941.

Remarks.- Records fair except those for Aug. 28 to Sept. 11, which are poor. Gage read once daily. Diversions above station for irrigation, chiefly in Wapato Lake area. Diurnal fluctuation caused by dam below Gaston.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 9)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30					
0.6	21	5.0	361	0.3	10	2.8	163	10.8	1,250
.9	37	6.5	481	.5	17	3.8	243	11.3	1,800
1.2	57	8.0	613	.7	26	5.0	339	11.8	2,640
1.5	81	9.0	733	.9	36	6.5	460	12.3	3,700
2.0	121	10.0	920	1.2	51	8.0	604	12.8	5,070
2.8	185	10.8	1,350	1.5	69	9.0	740		
3.8	265	11.3	1,900	2.0	102	10.0	930		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	49	1,140	1,460	946	1,010	418	181	84	67	19	
2	22	43	968	1,770	1,610	e928	394	153	86	73	22	
3	22	77	896	1,860	e1,460	988	372	145	77	52	26	
4	22	59	1,020	1,880	1,140	918	363	143	77	43	27	
5	21	50	985	2,640	1,000	826	335	157	70	40	19	
6	21	53	1,120	2,020	4,460	724	315	144	72	38	22	a15
7	21	56	1,840	2,040	3,140	662	297	133	67	37	22	
8	21	54	1,700	2,130	1,880	584	301	157	67	38	20	
9	20	55	1,250	1,600	e1,480	522	321	143	66	85	16	
10	20	309	1,050	1,300	1,180	473	321	133	65	50	16	
11	21	414	916	1,060	1,020	446	708	121	64	52	16	
12	22	373	785	a940	920	623	659	115	a60	48	16	16
13	22	471	635	834	826	1,030	545	112	a56	46	20	9
14	22	493	539	729	e743	1,420	421	107	56	40	20	12
15	22	531	478	640	673	1,050	401	106	65	44	17	16
16	22	552	429	576	618	1,200	361	103	61	43	15	20
17	24	757	401	524	571	1,110	333	101	67	42	22	24
18	24	1,900	375	489	569	a1,000	309	96	55	34	22	20
19	22	2,450	346	456	527	922	293	91	50	28	19	22
20	24	1,020	324	421	483	856	293	82	44	25	16	28
21	23	783	412	387	464	730	268	83	46	24	22	36
22	32	571	485	779	500	653	249	80	44	21	16	34
23	36	433	560	896	598	627	233	86	46	19	17	28
24	30	368	864	1,160	680	663	226	83	48	19	18	20
25	27	398	1,430	1,710	781	645	213	87	74	14	17	17
26	26	830	900	1,270	704	599	209	96	62	13	17	14
27	32	4,090	968	1,010	783	563	198	111	56	19	13	16
28	46	2,580	2,310	904	1,140	538	189	e98	51	19		17
29	38	1,770	3,470	838	-	507	196	e98	86	17	a15	18
30	69	1,470	2,920	743	-	491	195	92	82	19		20
31	56	-	1,900	677	-	447	-	84	-	17		-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	853	69	20	27.5	0.207	0.24	1,690
November	23,059	4,090	43	769	5.78	6.45	45,740
December	33,436	3,470	324	1,079	8.11	9.35	66,320
Calendar year 1945	157,551	4,090	14	432	3.25	44.06	312,500
January	35,743	2,640	387	1,153	8.67	9.99	70,900
February	30,896	4,460	464	1,103	8.29	8.64	61,280
March	23,755	1,420	446	766	5.76	6.64	47,120
April	9,936	708	189	331	2.49	2.78	19,710
May	3,521	181	80	114	.857	.98	6,980
June	1,904	86	44	63.5	.477	.53	3,780
July	1,126	85	13	36.3	.273	.31	2,230
August	572	27	13	18.5	.139	.16	1,130
September	552	36	9	18.4	.138	.15	1,090
Water year 1945-46	165,353	4,460	9	453	3.41	46.22	328,000

a No gage-height record; discharge computed on basis of records for Tualatin River at Gaston and Scoggin Creek near Gaston.
e Computed from gage reading changed 1 foot to agree with records on tributaries.

Tualatin River at Farmington, Oreg.

Location.- Staff gage, lat. 45°27'00", long. 122°57'00", in SE¼ sec. 29, T. 1 S., R. 2 W., at highway bridge at Farmington, 7½ miles southwest of Beaverton. Auxiliary staff gage at highway bridge 6½ miles downstream, 1 mile northeast of Scholls. Datum of each gage is 100.42 feet above mean sea level, datum of 1929. All discharge measurements made at Farmington.

Drainage area.- 568 square miles.

Records available.- October 1939 to September 1946.

Extremes.- Maximum discharge observed during year, 12,300 second-feet Feb. 8 (gage height, 32.81 feet); minimum discharge observed, 32 second-feet Aug. 25.

1939-46: Maximum discharge observed, 14,500 second-feet Dec. 20, 1941; maximum gage height observed, 33.45 feet Dec. 21, 1941; minimum discharge observed, 28 second-feet Sept. 13, 14, 1944.

Maximum stage known, about 37 feet at Farmington and 33.4 feet at gage near Scholls Dec. 22 or 23, 1933.

Remarks.- Records good. Gages read twice daily. For gage heights above 8 feet, discharge computed by using fall as determined by twice-daily readings of auxiliary gage as a factor. Stage-discharge relation affected at times by backwater from flashboards on low dam 30 miles downstream. Slight regulation by log ponds and dam below Gaston have little effect at this station; considerable pondage between this station and station near Willamette. Some diversions by pumping for irrigation above station, chiefly at Wapato Lake, near Gaston.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	146	6,400	7,180	3,130	2,890	1,780	555	249	254	63	55
2	73	145	5,830	6,730	3,160	3,090	1,650	529	235	220	63	61
3	69	133	5,310	6,560	3,260	3,040	1,490	476	224	208	68	61
4	68	161	4,880	6,730	3,450	2,930	1,380	442	215	188	71	57
5	64	152	4,460	7,120	3,900	2,880	1,310	436	214	167	67	61
6	64	135	4,190	7,580	5,470	2,830	1,260	422	211	157	65	65
7	62	129	4,220	8,200	9,500	2,650	1,160	407	208	151	61	78
8	59	113	4,460	8,310	11,600	2,280	1,070	425	211	155	62	84
9	56	146	4,770	8,130	9,560	2,150	1,070	414	206	165	60	78
10	55	182	4,800	7,480	7,990	1,890	1,100	411	203	237	50	65
11	56	507	4,850	6,690	6,780	1,680	1,310	384	204	208	49	58
12	58	762	4,650	6,120	6,200	1,720	1,600	352	197	179	52	54
13	62	793	4,110	5,520	5,540	2,240	1,660	335	185	167	60	52
14	65	870	3,450	4,820	4,930	2,310	1,620	326	179	152	56	47
15	67	912	3,010	4,220	4,310	2,690	1,420	314	173	143	57	49
16	71	976	2,580	3,580	3,800	3,230	1,270	317	183	145	60	55
17	74	1,190	2,150	3,150	3,340	3,530	1,160	308	185	143	55	63
18	80	1,640	1,730	2,730	3,080	3,710	1,070	295	203	134	55	71
19	82	2,020	1,530	2,260	2,590	3,850	1,040	272	204	117	55	73
20	86	2,300	1,390	2,040	2,220	3,730	946	257	181	104	51	65
21	90	2,400	1,390	1,690	1,930	3,580	883	247	165	94	45	61
22	93	2,380	1,590	1,780	1,720	3,300	833	237	150	86	41	60
23	98	2,210	1,830	2,150	1,700	2,910	764	237	139	76	39	59
24	125	1,780	1,860	2,550	1,930	2,520	735	248	143	70	36	59
25	114	1,370	2,020	3,020	2,020	2,510	708	244	155	69	32	55
26	103	1,610	2,300	3,310	2,040	2,200	655	271	188	69	38	51
27	104	3,550	2,420	3,610	2,190	2,200	621	322	189	63	38	47
28	120	4,620	3,100	3,790	2,680	2,010	592	347	182	61	39	47
29	135	6,210	3,830	3,720	-	2,040	576	314	191	67	39	47
30	130	6,830	5,200	3,510	-	2,010	570	289	247	58	42	52
31	141	-	6,830	3,250	-	1,990	-	272	-	56	47	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	2,599	141	55	83.8	0.148	0.17	5,160
November	46,372	6,830	113	1,546	2.72	3.04	91,980
December	111,140	6,830	1,390	3,585	6.31	7.28	220,400
Calendar year 1945	484,151	7,950	47	1,326	2.33	31.69	960,200
January	147,530	8,310	1,690	4,759	8.38	9.66	292,600
February	120,000	11,600	1,700	4,286	7.55	7.86	238,000
March	82,590	3,850	1,680	2,664	4.69	5.41	163,800
April	33,303	1,780	570	1,110	1.95	2.18	66,080
May	10,705	555	237	345	.607	.70	21,230
June	5,817	249	139	194	.342	.38	11,540
July	4,163	254	56	134	.236	.27	8,260
August	1,616	71	32	52.1	.092	.11	3,210
September	1,790	84	47	59.7	.105	.12	3,550
Water year 1945-46	567,625	11,600	32	1,555	2.74	37.18	1,126,000

Tualatin River near Willamette, Oreg.

Location.- Water-stage recorder, lat. 45°21'05", long. 122°40'35", in SW¼ sec. 34, T. 2 S., R. 1 E., 300 feet upstream from county bridge and 1 mile northwest of Willamette. Datum of gage is 85.61 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).
Drainage area.- 710 square miles.
Records available.- July 1928 to September 1946.
Average discharge.- 18 years, 1,335 second-feet (including flow of Oswego Canal).
Extremes (river only).- Maximum discharge during year, 9,780 second-feet Feb. 9 (gage height, 11.77 feet); minimum, 6 second-feet Aug. 26 (gage height, 1.46 feet).
1928-46: Maximum discharge, 23,300 second-feet Dec. 23, 1933 (gage height, 17.72 feet, present datum); minimum observed, 2 second-feet Aug. 14-21, 1928 (gage height, 1.27 feet, present datum).
Remarks.- Records excellent. Oswego Canal (p. 168) diverts water 4½ miles above station for recreational use in Oswego Lake and development of power between outlet of that lake and Willamette River, to which water is returned. Several small diversions above station for irrigation. Some regulation in low-water season by flashboards on crest of diversion dam of Oswego Canal.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 9				Feb. 10 to Sept. 30					
1.7	25	2.5	146	1.5	7.5	2.8	219	6.5	2,430
1.9	45	2.8	221	1.7	18	3.2	346	7.7	3,570
2.1	72	3.2	346	1.9	36	3.6	510	9.0	5,110
2.3	106			2.1	62	4.1	750	10.5	7,390
Note.- Same as following table above 3.2 feet.				2.3	97	4.7	1,095	12.0	10,240
				2.5	139	5.5	1,640		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	121	6,400	6,160	3,720	3,400	2,250	675	315	210	14	8
2	34	169	6,370	6,640	3,680	3,480	2,050	635	293	108	13	8
3	32	176	6,080	6,770	3,690	3,610	1,870	586	280	86	12	8
4	30	182	5,660	6,780	3,760	3,570	1,750	555	268	130	12	10
5	30	202	5,070	6,950	4,100	3,500	1,600	532	255	130	12	10
6	30	197	4,810	6,980	6,060	3,350	1,490	519	255	113	13	12
7	30	172	4,800	7,480	6,660	3,150	1,390	510	252	103	13	14
8	30	127	4,720	7,900	7,790	2,890	1,300	501	249	109	14	16
9	29	127	4,700	8,010	9,400	2,640	1,260	514	246	128	15	21
10	27	210	4,720	7,970	9,620	2,330	1,250	510	243	149	16	20
11	25	378	4,700	7,650	8,850	2,070	1,280	478	237	163	17	20
12	25	725	4,480	7,170	7,830	2,140	1,520	452	237	148	15	19
13	28	827	4,160	6,560	6,980	2,710	1,730	422	228	130	16	18
14	28	838	3,740	5,910	6,140	2,900	1,770	398	219	113	18	18
15	30	882	3,310	5,200	5,380	3,560	1,680	390	216	103	19	16
16	34	987	2,900	4,560	4,700	4,120	1,530	375	216	93	18	15
17	36	1,260	2,470	3,910	4,080	4,240	1,400	371	222	90	17	16
18	34	1,800	2,000	3,380	3,510	4,320	1,270	360	234	84	17	18
19	35	2,320	1,640	2,950	3,130	4,310	1,170	346	234	70	16	20
20	38	2,530	1,450	2,540	2,750	4,240	1,100	319	210	61	15	22
21	42	2,670	1,440	2,160	2,430	4,100	1,050	306	185	51	14	22
22	53	2,690	1,630	2,210	2,160	3,880	999	288	166	45	12	19
23	54	2,570	1,890	2,520	2,070	3,600	915	283	158	37	10	17
24	58	2,190	2,120	3,350	2,160	3,380	860	283	158	31	8	15
25	74	1,700	2,260	3,800	2,370	3,080	822	290	163	24	7	15
26	72	1,890	2,590	3,870	2,470	2,880	783	339	185	24	7	13
27	68	4,840	2,960	3,980	2,760	2,700	750	378	213	21	7	12
28	72	5,610	3,800	4,090	3,240	2,590	715	418	225	20	8	11
29	90	5,760	4,540	4,090	-	2,580	700	410	225	18	8	11
30	108	6,150	4,890	3,990	-	2,580	690	375	240	17	8	11
31	112	-	5,540	3,810	-	2,450	-	343	-	16	8	-

Month	Observed				Diversion by Oswego Canal in acre-feet	Adjusted for diversion			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	112	25	45.9	2,820	4,250	7,070	115	0.162	0.19
November	6,150	121	1,677	99,770	1,300	101,100	1,699	2.39	2.67
December	6,400	1,440	3,801	233,700	8,240	241,900	3,934	5.54	6.39
Calendar year 1945	7,190	10	1,428	1,034,000	60,880	1,095,000	1,513	2.13	28.92
January	8,010	2,160	5,140	316,000	12,480	328,500	5,343	7.53	8.68
February	9,620	2,070	4,696	260,800	10,310	271,100	4,881	6.87	7.16
March	4,320	2,070	3,235	198,900	8,270	207,200	3,370	4.75	5.47
April	2,250	690	1,297	77,200	4,050	81,250	1,365	1.92	2.15
May	675	283	424	26,100	2,230	28,330	461	.649	.75
June	315	158	228	13,540	1,780	15,320	257	.362	.40
July	210	16	84.5	5,200	4,180	9,380	153	.215	.25
August	19	7	12.9	791	3,340	4,130	67.2	.095	.11
September	22	8	15.2	902	3,790	4,690	78.8	.111	.12
Water year 1945-46	9,620	7	1,707	1,236,000	64,220	1,300,000	1,796	2.53	34.34

Scoggin Creek near Gaston, Oreg.

Location.- Water-stage recorder, lat. 45°27', long. 123°09', in NW¼ sec. 26, T. 1 S., R. 4 W., 500 feet upstream from highway bridge, 1½ miles upstream from mouth, and 1.7 miles northwest of Gaston. Datum of gage is 168.44 feet above mean sea level, datum of 1929.

Drainage area.- 44.0 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 1,590 second-feet Feb. 6 (gage height, 14.44 feet); minimum discharge not determined.

1940-46: Maximum discharge, 1,610 second-feet Jan. 18, 1941; maximum gage height 14.44 feet Feb. 6, 1946; minimum discharge, 1.2 second-feet Aug. 22, 1941, Oct. 7, 8, 1943.

Remarks.- Records good except those for Oct. 12-30, June 6 to Sept. 30, which are poor. Small diversions by pumping above station for irrigation. Water supply for Hillsboro is diverted from Sein Creek above station; some diurnal fluctuation caused by log ponds above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 31 to Nov. 6)

2.2	6.7	2.9	50	4.3	231	8.0	605
2.3	9.4	3.1	71	4.8	278	9.5	815
2.5	18	3.4	105	5.4	322	11.0	1,040
2.7	31	3.8	162	6.5	412	14.0	1,520

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.9	14	309	463	402	319	142	72	34			
2	8.3	19	266	752	690	305	134	68	32			
3	e.3	18	29e	626	487	305	128	67	31			
4	e.3	13	302	574	362	275	122	63	a29			
5	7.8	14	318	908	496	255	115	60	h27			
6	7.2	16	524	647	1,420	236	110	59				
7	7.0	17	646	783	900	214	105	63				
8	7.0	17	459	667	590	195	109	63				
9	6.7	31	345	485	439	176	110	58				
10	7.0	97	295	383	368	165	153	55				
11	7.0	103	257	324	321	158	299	52				
12	a7	121	224	284	284	306	242	50	a25			h25
13	a7	121	190	256	260	325	205	47				
14	a7	156	168	229	242	289	174	44				
15	a7	168	152	206	224	388	153	43		h16		
16	a7	275	140	186	210	377	136	43				
17	a8	328	131	172	203	370	128	43				
18	a8	591	121	160	199	339	119	41				
19	a7	445	112	148	186	304	113	39				
20	a8	281	110	138	177	272	113	36	h19			
21	a8	198	156	154	178	247	103	35				
22	a10	146	164	335	192	233	95	35				
23	a9	118	214	321	257	220	91	36				
24	a8	109	326	626	266	244	88	36				
25	a8	192	312	527	263	230	85	37				
26	a9	802	316	372	244	212	84	48	a20			
27	a11	1,320	418	314	370	203	81	43				
28	a13	640	1,110	281	381	188	79	37				
29	a10	440	1,200	260	-	184	81	32				
30	a20	368	869	229	-	171	76	32				
31	16	-	583	277	-	158	-	32				

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	271.5	20	6.7	8.76	0.199	0.23	539
November	7,088	1,230	13	236	5.36	5.99	14,060
December	11,035	1,200	110	356	8.09	9.33	21,890
Calendar year 1945	52,740.6	1,360	4.6	144	3.27	44.56	104,600
January	12,387	908	138	400	9.09	10.47	24,570
February	10,611	1,420	177	379	8.61	8.97	21,050
March	7,863	388	158	254	5.77	6.65	15,600
April	3,773	299	76	126	2.86	3.19	7,480
May	1,469	72	32	47.4	1.08	1.24	2,910
June	722	-	-	24.1	.548	.61	1,430
July	248	-	-	8	.182	.21	492
August	124	-	-	4	.091	.10	246
September	150	-	-	5	.114	.13	298
Water year 1945-46	55,741.5	1,420	-	153	3.48	47.12	110,600

Peak discharge.- Nov. 27 (1:30 a.m.) 1,530 sec.-ft.; Dec. 29 (12:30 a.m.) 1,260 sec.-ft.; Feb. 6 (8 a.m.) 1,590 sec.-ft.

a No gage-height record; discharge computed on basis of records for Tualatin River at Gaston and near Dilley.

h Computed on basis of staff-gage reading.

Gales Creek near Forest Grove, Oreg.

Location.- Water-stage recorder, lat. 45°33'10", long. 123°11'10", in E½ sec. 21, T. 1 N., R. 4 W., at bridge 2½ miles southeast of village of Gales Creek and 4½ miles northwest of Forest Grove. Datum of gage is 203.01 feet above mean sea level, datum of 1929.

Drainage area.- 66 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 3,200 second-feet Nov. 26 (gage height, 7.36 feet); minimum, 5 second-feet (regulated) May 20 (gage height, 1.01 feet); minimum daily, 13 second-feet Aug. 24.
1940-46: Maximum discharge, 4,040 second-feet Feb. 7, 1945 (gage height, 8.38 feet); minimum, 5 second-feet June 18, 1945, May 20, 1946.

Remarks.- Records good. Small diversions above station for irrigation; some diurnal fluctuations at low flow caused by log ponds upstream.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 25				Nov. 26 to Sept. 30					
1.4	13	2.3	123	1.3	13	2.5	195	4.8	1,260
1.5	19	2.6	194	1.5	26	2.9	305	5.5	1,765
1.6	28	2.9	279	1.7	45	3.3	445	6.2	2,290
1.8	45	3.2	380	1.9	70	3.7	615		
2.0	70			2.2	124	4.2	870		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	30	566	798	696	493	220	108	44	46	20	18
2	17	35	473	1,130	1,040	517	210	104	49	40	19	16
3	17	35	538	936	771	489	202	102	49	38	18	16
4	19	32	530	1,320	602	441	192	99	48	37	18	17
5	17	32	628	1,400	1,230	395	182	95	47	35	18	20
6	17	38	1,070	1,060	2,280	356	172	88	48	33	18	23
7	17	40	1,120	1,340	1,360	320	168	97	47	33	17	20
8	17	40	832	1,100	948	290	172	91	45	44	17	17
9	16	66	638	854	755	266	172	88	46	47	16	16
10	17	189	517	680	638	254	310	81	47	39	16	15
11	17	186	441	548	530	248	485	78	45	34	16	15
12	17	194	377	461	461	388	384	75	44	33	17	16
13	18	202	326	398	409	413	317	73	42	30	18	15
14	17	258	290	352	374	413	281	72	42	30	18	16
15	17	298	266	317	352	638	245	75	42	30	18	17
16	18	501	245	290	326	615	225	69	47	30	17	18
17	18	580	235	272	320	606	210	64	45	29	16	18
18	18	996	220	257	302	530	195	63	40	28	16	16
19	18	798	205	240	287	485	182	60	37	25	15	16
20	20	519	208	225	275	398	178	48	35	24	14	15
21	19	370	269	287	275	356	163	62	34	23	14	16
22	26	288	275	505	287	335	153	57	34	21	14	16
23	22	235	349	534	391	323	146	64	36	20	14	14
24	21	221	485	1,200	398	360	139	59	42	20	13	15
25	20	383	453	918	391	326	133	59	46	20	14	18
26	22	1,960	493	670	370	299	131	86	41	20	14	14
27	39	1,830	772	538	606	290	122	69	37	21	14	14
28	31	1,050	1,880	473	584	272	120	62	48	20	14	14
29	30	815	1,860	417	-	266	122	57	60	19	14	14
30	38	670	1,330	363	-	242	114	55	52	19	18	16
31	37	-	930	425	-	230	-	54	-	20	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	654	39	16	21.1	0.320	0.37	1,308
November	12,891	1,960	30	430	6.52	7.26	25,570
December	18 801	1,880	205	606	9.18	10.59	37,290
Calendar year 1945	87,178	2,280	12	239	3.62	49.11	172,900
January	20,308	1,400	225	655	9.92	11.44	40,280
February	17,258	2,280	275	616	9.33	9.72	34,230
March	11,834	638	230	382	5.79	6.67	23,470
April	6,045	485	114	202	3.06	3.41	11,990
May	2,314	108	48	74.6	1.13	1.30	4,590
June	1,517	60	34	43.9	.665	.74	2,610
July	906	47	19	29.2	.442	.51	1,800
August	503	20	13	16.2	.245	.28	998
September	489	23	14	16.3	.247	.28	970
Water year 1945-46	93,320	2,280	13	256	3.88	52.57	185,100

Peak discharge.- Nov. 26 (5 p.m.) 3,200 sec.-ft.; Dec. 28 (8:30 p.m.) 2,150 sec.-ft.; Dec. 29 (2:30 p.m.) 1,940 sec.-ft.; Jan. 5 (6 a.m.) 1,490 sec.-ft.; Jan. 7 (7 to 9 a.m.) 1,450 sec.-ft.; Feb. 6 (3 a.m.) 3,120 sec.-ft.

East Fork Dairy Creek at Mountaindale, Oreg.

Location.- Water-stage recorder, lat. 45°38'05", long. 123°02'35", in NW¼ sec. 27, T. 2 N., R. 3 W., at dam site three-quarters of a mile north of village of Mountaindale. Datum of gage is 183.04 feet above mean sea level, datum of 1929.

Drainage area.- 43.0 square miles, including two small streams on left bank which enter creek below station.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 1,380 second-feet Feb. 6 (gage height, 12.46 feet); minimum, 10 second-feet Oct. 1-12, 15, Aug. 23, Sept. 12.
1940-46: Maximum discharge, that of Feb. 6, 1946; minimum, 7 second-feet Sept. 10-12, 1944.

Remarks.- Records fair. Records include measured or estimated discharge of two small streams which flow through dam site at station and enter creek from left bank about a mile below station. Probably some pumping for irrigation above station. Diurnal fluctuation at low flow caused by log pond upstream.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 7 to Nov. 15)

Oct. 1 to Nov. 25				Nov. 26 to Sept. 30					
0.6	9	1.8	42	0.5	10	2.3	58	8.0	450
.8	13	2.3	61	.8	15	3.0	86	9.5	590
1.1	21	3.0	89	1.1	21	4.0	134	11.0	780
1.4	30	4.0	134	1.4	28	5.0	199		
				1.8	40	6.5	318		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a10	13	280	392	289	247	165	61	32	28	16	14
2	a10	21	231	518	586	245	153	60	32	26	15	13
3	a11	16	225	517	541	212	145	58	32	25	15	14
4	11	15	204	603	427	188	135	56	31	24	14	14
5	11	15	231	677	533	179	128	54	31	23	15	15
6	10	16	319	590	1,330	168	121	53	34	22	14	14
7	10	16	428	662	985	151	116	54	32	22	14	14
8	10	16	376	639	672	140	114	53	32	30	14	13
9	10	23	308	528	544	133	107	51	32	28	14	12
10	10	64	261	437	454	131	118	48	32	24	13	12
11	10	50	227	351	374	126	136	46	29	22	14	13
12	11	57	189	294	319	155	128	44	28	22	14	11
13	11	47	164	256	280	169	124	44	27	21	14	12
14	11	41	147	225	249	178	119	44	27	21	14	13
15	11	40	134	196	226	293	113	44	27	22	14	14
16	a12	128	126	176	206	320	107	42	29	21	14	14
17	a12	170	118	a160	198	347	101	40	28	20	14	14
18	a12	324	108	a150	188	339	98	39	26	19	13	13
19	11	316	100	136	183	312	93	38	24	18	13	13
20	12	213	102	128	172	269	90	37	23	17	13	13
21	12	153	118	135	167	228	86	38	23	17	12	13
22	15	120	114	182	161	208	82	37	24	16	12	13
23	12	100	124	182	186	186	78	37	24	16	11	12
24	12	92	144	321	192	196	76	37	29	16	12	12
25	11	122	163	356	195	179	74	37	33	16	12	12
26	12	448	208	316	195	173	71	42	28	16	12	12
27	15	751	308	277	261	172	68	40	31	16	12	12
28	14	499	544	254	264	171	67	38	32	16	12	12
29	13	384	597	232	-	184	68	37	38	16	13	12
30	15	329	541	198	-	176	63	34	32	16	14	13
31	14	-	454	216	-	172	-	33	-	16	14	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	361	15	10	11.6	0.270	0.31	716
November	4,599	751	13	153	3.56	3.98	9,120
December	7,593	597	100	245	5.70	6.57	15,060
Calendar year 1945	40,340	949	10	111	2.58	34.89	80,010
January	10,304	677	128	332	7.72	8.91	20,440
February	10,377	1,330	161	371	8.63	8.97	20,580
March	6,347	347	126	205	4.77	5.49	12,590
April	3,144	165	63	105	2.44	2.72	6,240
May	1,376	61	33	44.4	1.03	1.19	2,730
June	882	38	23	29.4	.684	.76	1,750
July	632	30	16	20.4	.474	.55	1,250
August	417	16	11	13.5	.314	.36	827
September	388	15	11	12.9	.300	.34	770
Water year 1945-46	46,420	1,330	10	127	2.95	40.15	92,070

Peak discharge.- Nov. 27 (3 a.m.) 880 sec.-ft.; Dec. 29 (4 p.m.) 637 sec.-ft.; Jan. 5 (8 a.m.) 710 sec.-ft.; Jan. 7 (6 p.m.) 699 sec.-ft.; Feb. 2 (5 p.m.) 634 sec.-ft.; Feb. 6 (5 to 8 a.m.) 1,380 sec.-ft.

a No gage-height record; discharge computed on basis of records for Tualatin River at Gaston and Scoggin Creek near Gaston.

Oswego Canal near Oswego, Oreg.

Location.- Water-stage recorder, lat. 45°23'30", long. 122°43'10", in NW¼ sec. 20, T. 2 S., R. 1 E., half a mile downstream from point of diversion from Tualatin River, 1 mile upstream from Oswego Lake, and 3 miles southwest of Oswego. Datum of gage is 96.50 feet above mean sea level, datum of 1929. Auxiliary gage at outlet of Oswego Lake for determination of backwater effect of lake on stages at canal gage.

Records available.- October 1928 to September 1946.

Average discharge.- 18 years, 65.4 second-feet.

Extremes.- Maximum daily discharge during year, 348 second-feet Feb. 10; minimum daily, 0.5 second-foot Nov. 2, 3 (head gate closed).
1928-46: Maximum discharge, 6,000 second-feet Dec. 23, 1933 (gage height, 16.1 feet, site and datum then in use), computed from slope, area, and lake spillway data; practically no flow at times.

Remarks.- Records good. Oswego Canal diverts water from Tualatin River in NW¼ sec. 20, but diversion dam is in NE¼ sec. 33, about 3 miles downstream. Water used for development of power below Oswego Lake and returned to Willamette River at that point.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	46	5.0	245	151	139	103	46	32	38	58	52
2	71	.5	4.0	260	149	142	96	44	31	61	58	55
3	70	.5	4.0	264	149	147	89	42	31	74	59	57
4	70	1.0	94	266	151	146	85	41	31	78	60	58
5	70	1.5	208	270	163	143	80	40	30	77	61	60
6	69	2.0	199	270	236	138	74	40	30	76	61	61
7	69	31	199	289	254	131	70	39	30	76	61	62
8	69	72	196	301	294	123	68	39	30	75	60	65
9	69	53	195	303	341	115	66	40	30	76	59	67
10	69	2.0	196	301	348	106	66	40	30	77	58	67
11	68	1.5	195	291	329	98	67	38	30	79	57	66
12	68	1.5	186	273	298	100	78	37	30	78	57	65
13	68	1.5	174	254	267	117	85	36	30	76	56	64
14	68	1.5	159	232	240	123	86	38	29	75	55	63
15	69	1.5	144	208	214	145	83	35	29	74	55	63
16	69	2.0	129	181	187	164	76	35	29	72	54	65
17	68	2.5	115	158	165	169	71	35	30	72	54	65
18	68	3.0	99	139	145	172	67	34	30	71	53	66
19	68	2.0	87	124	130	171	64	33	30	70	53	66
20	68	2.0	79	112	119	169	61	32	28	68	53	66
21	68	1.5	78	100	108	163	59	32	28	67	52	66
22	68	1.5	86	101	99	156	57	31	28	64	51	66
23	69	1.5	96	111	96	147	55	31	28	62	51	66
24	69	61	102	137	100	136	53	31	28	61	49	66
25	70	96	108	152	106	127	51	31	29	60	49	66
26	69	107	118	155	108	120	49	33	29	59	49	66
27	69	118	131	158	118	116	48	35	31	59	48	66
28	69	31	160	162	133	113	47	36	31	58	48	66
29	70	4.5	185	163		113	46	35	31	59	48	65
30	72	5.0	200	159		112	46	34	32	59	49	66
31	72	-	225	153		109	-	33	-	58	50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,144	72	68	69.2	4,250
November	655.5	118	.5	21.8	1,300
December	4,156.0	225	4.0	134	8,240
Calendar year 1945	30,701.5	260	.5	84.1	60,880
January	6,292	303	100	203	12,480
February	5,198	348	96	186	10,310
March	4,170	172	98	135	8,270
April	2,044	103	46	68.1	4,050
May	1,124	46	31	36.3	2,230
June	895	32	28	29.8	1,780
July	2,109	79	38	68.0	4,180
August	1,686	61	48	54.4	3,340
September	1,912	67	52	63.7	3,790
Water year 1945-46	32,385.5	348	.5	88.7	64,220

Clackamas River at Big Bottom, Oreg.

Location.- Water-stage recorder, lat. 45°01', long. 121°55', in sec. 26, T. 6., R. 7 E., just downstream from Pot Creek at lower end of Big Bottom, half a mile upstream from site of proposed dam, and 28 miles southeast of Estacada.

Drainage area.- 132 square miles

Records available.- April 1920 to September 1946.

Average discharge.- 26 years, 440 second-feet.

Extremes.- Maximum discharge during year, 5,280 second-feet Dec. 28 (gage height, 7.60 feet), from rating curve extended above 1,700 second-feet; minimum, 205 second-feet Oct. 7-11 (gage height, 1.45 feet).

1920-46: Maximum discharge, 6,750 second-feet Mar. 31, 1931 (gage height, 8.28 feet), from rating curve extended above 3,500 second-feet; minimum, 184 second-feet Sept. 12, 1942.

Remarks.- Records fair except those for period of no gage-height record and those for August and September, which are poor. No regulation or diversion above station.

Cooperation.- Water-stage recorder graph and 11 discharge measurements furnished by Portland General Electric Co.

Rating table, water year 1945-46
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 11 to Sept. 30)

1.4	190	2.5	575	4.6	1,780
1.6	250	2.8	700	5.4	2,520
1.9	350	3.2	885	6.3	3,530
2.2	455	3.8	1,220		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	240	555	1,290	540	647	434	664	776	438	301	294
2	211	260	487	1,260	520	615	424	678	808	430	301	298
3	208	241	455	1,120	500	575	410	763	808	413	301	315
4	208	232	487	1,200	463	539	399	865	763	402	301	298
5	208	235	519	1,400	475	523	392	860	738	388	298	294
6	208	232	660	1,200	619	535	385	822	745	378	298	290
7	205	229	732	1,200	551	519	382	817	678	371	298	287
8	205	226	595	1,050	495	503	392	786	696	385	298	284
9	205	247	523	940	471	495	396	781	655	399	294	280
10	205	271	483	840	452	495	402	822	623	371	294	280
11	205	256	448	750	430	491	434	812	603	357	294	280
12	208	298	424	680	416	591	444	826	619	350	294	277
13	208	284	399	620	406	579	452	830	776	346	294	277
14	208	294	385	570	399	535	471	790	808	343	294	280
15	208	343	368	530	392	559	487	776	745	340	294	294
16	208	343	357	500	385	523	511	804	678	336	294	312
17	208	315	360	480	378	519	551	870	639	332	294	298
18	208	371	357	465	371	507	631	925	603	329	294	287
19	214	378	346	450	368	487	678	952	599	326	294	287
20	214	322	340	430	360	479	678	952	603	318	294	284
21	217	287	350	440	364	471	647	885	583	318	290	284
22	238	268	364	660	357	471	607	900	559	315	290	284
23	229	259	378	620	360	467	591	835	523	315	290	284
24	217	259	413	1,200	374	459	627	835	507	312	290	284
25	214	329	416	1,000	402	452	745	875	507	308	290	284
26	211	567	441	880	396	463	850	1,090	475	308	287	284
27	211	1,700	577	780	678	511	804	1,020	452	308	287	284
28	214	1,240	3,110	710	736	507	750	940	491	304	287	284
29	223	885	3,490	650	-	491	754	870	495	304	290	284
30	235	664	2,180	600	-	467	718	799	455	304	298	284
31	232	-	1,560	550	-	448	-	781	-	304	298	

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	6,604	238	205	213	1.61	1.86	13,100
November	12,075	1,700	226	402	3.05	3.40	23,950
December	22,559	3,490	340	728	5.52	6.36	44,750
Calendar year 1945	158,645	3,490	205	435	3.30	44.70	314,700
January	25,065	1,400	430	809	6.13	7.06	49,720
February	12,658	736	357	452	3.42	3.57	25,110
March	15,923	647	448	514	3.89	4.49	31,580
April	16,446	850	382	548	4.15	4.63	32,620
May	26,225	1,090	664	846	6.41	7.39	52,020
June	19,008	808	452	634	4.80	5.36	37,700
July	10,752	438	304	347	2.63	3.03	21,330
August	9,121	301	287	294	2.23	2.57	18,090
September	8,636	315	277	288	2.18	2.43	17,150
Water year 1945-46	185,072	3,490	205	507	3.84	52.15	367,100

Peak discharge.- Nov. 27 (2 p.m.) 1,930 sec.-ft.; Dec. 28 (10:30 p.m.) 5,280 sec.-ft.
Note.- No gage-height record Oct. 31 to Nov. 2, Jan. 4 to Feb. 3; discharge computed on basis of records for Oak Grove Fork above power-plant intake.

Clackamas River above Three Lynx Creek, Oreg.

Location.- Water-stage recorder, lat. 45°07', long. 122°04', in NE¼ sec. 21, T. 5 S., R. 6 E., just downstream from power plant, 500 feet upstream from Three Lynx Creek, and 17 miles southeast of Estacada. Datum of gage is 1,098 feet above mean sea level (levels by Portland General Electric Co.).
Drainage area.- 488 square miles.
Records available.- October 1911 to December 1913, October 1921 to September 1946.
Average discharge.- 27 years, 1,804 second-feet.
Extremes.- Maximum discharge during year, 29,200 second-feet Dec. 28 (gage height, 14.0 feet), from rating curve extended above 11,000 second-feet; minimum not determined; minimum daily, 540 second-feet Oct. 14.
1911-13, 1921-46: Maximum discharge, 34,800 second-feet Mar. 31, 1931 (gage height, 15.5 feet), from rating curve extended above 11,000 second-feet; minimum observed, 375 second-feet (regulated) Aug. 10, 16, 1924, Sept. 20, 1936; minimum daily, 536 second-feet Oct. 22, 1930.
Remarks.- Records good except those for periods of no gage-height record or partly estimated gage heights, which are fair. Water diverted from Oak Grove Fork is used in power plant on Clackamas River just above station. Considerable diurnal fluctuation during periods of low flow.
Cooperation.- Water-stage recorder graph and 11 discharge measurements furnished by Portland General Electric Co.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.8	550	4.0	3,220	9.0	13,500
1.2	725	5.0	4,560	10.0	16,300
1.6	960	6.0	6,260	11.0	19,400
2.2	1,400	7.0	8,340	12.0	22,500
3.0	2,110	8.0	10,800		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	657	850	2,670	5,260	2,230	3,800	1,760	2,550	2,640	1,580	858	730
2	606	1,500	2,230	5,130	2,210	3,100	1,650	2,560	2,770	1,480	828	705
3	610	1,300	2,130	4,680	1,990	2,500	1,560	3,030	2,730	1,390	792	822
4	614	1,050	2,270	5,230	1,900	2,290	1,540	3,600	2,490	1,260	792	758
5	590	1,150	2,430	6,490	1,880	2,280	1,500	3,420	2,330	1,350	840	752
6	626	1,050	3,770	4,740	3,260	2,320	1,460	3,180	2,340	1,270	822	764
7	574	950	4,380	5,180	2,880	2,260	1,470	3,100	2,140	1,200	804	747
8	582	850	3,140	4,480	2,350	2,160	1,540	3,030	2,120	1,360	798	700
9	586	1,100	2,500	3,630	2,090	2,060	1,510	2,880	2,040	1,370	798	725
10	590	1,600	2,190	3,150	1,920	2,170	1,570	3,020	1,920	1,260	780	715
11	590	1,400	1,930	2,740	1,810	2,110	1,780	3,000	1,840	1,190	747	720
12	590	1,800	1,720	2,420	1,650	2,860	1,920	2,980	1,840	1,150	840	715
13	602	1,700	1,560	2,240	1,600	2,920	1,980	3,060	2,270	1,120	780	715
14	540	1,500	1,470	2,100	1,530	2,600	2,110	2,850	2,300	1,020	780	705
15	600	2,000	1,380	1,970	1,500	2,700	2,190	2,700	2,300	1,170	780	725
16	560	2,000	1,310	1,840	1,480	2,490	2,310	2,780	2,070	1,060	780	840
17	600	1,800	1,420	1,770	1,500	2,360	2,620	3,110	2,030	1,040	780	780
18	580	2,400	1,380	1,740	1,580	2,290	3,170	3,330	1,890	1,020	736	747
19	630	2,600	1,290	1,710	1,500	2,110	3,220	3,340	1,900	1,020	798	711
20	650	1,900	1,260	1,650	1,470	2,030	3,060	3,440	1,920	942	780	720
21	580	1,420	1,430	1,700	1,460	1,940	2,760	3,170	1,880	988	780	725
22	720	1,160	1,610	3,550	1,480	1,970	2,530	3,200	1,810	1,000	752	690
23	700	1,160	1,740	3,380	1,520	1,950	2,360	2,930	1,660	948	798	690
24	650	1,140	2,330	7,200	1,610	1,900	2,680	2,860	1,700	918	764	685
25	620	1,680	2,220	5,370	2,110	1,880	3,460	2,980	1,700	924	720	690
26	610	4,820	2,440	3,800	1,900	1,890	3,910	3,560	1,650	918	780	690
27	630	14,300	3,540	3,160	3,440	2,260	3,350	3,570	1,560	852	752	680
28	600	8,390	21,800	2,760	4,710	2,250	3,020	3,320	1,680	894	752	685
29	660	4,920	17,100	2,500	-	2,090	3,000	3,090	1,780	974	747	662
30	750	3,470	9,700	2,220	-	1,960	2,750	2,780	1,620	870	764	695
31	770	-	6,670	2,130	-	1,780	-	2,650	-	888	764	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	19,267	770	540	622	1.27	1.47	38,220
November	72,960	14,300	850	2,432	4.98	5.56	144,700
December	113,010	21,800	1,260	3,645	7.47	8.61	224,200
Calendar year 1945	699,448	21,800	540	1,916	3.93	53.30	1,387,000
January	105,920	7,200	1,650	3,417	7.00	8.07	210,100
February	56,560	4,710	1,460	2,020	4.14	4.31	112,200
March	71,280	3,800	1,780	2,299	4.71	5.43	141,400
April	69,740	3,910	1,460	2,325	4.76	5.31	138,300
May	95,070	3,800	2,550	3,067	6.28	7.25	188,600
June	60,920	2,770	1,560	2,031	4.16	4.64	120,800
July	34,426	1,580	852	1,111	2.28	2.62	68,280
August	24,286	858	720	783	1.60	1.85	48,170
September	21,687	840	662	723	1.48	1.65	43,020
Water year 1945-46	745,126	21,800	540	2,041	4.18	56.77	1,478,000

Peak discharge.- Nov. 27 (8 a.m.) 16,400 sec.-ft.; Dec. 28 (6 p.m.) 29,200 sec.-ft; Jan. 24 11 p.m. to 12 a.m.) 8,980 sec.-ft.
Note.- Water surface below inlet part of each day Oct. 1-14; gage-height record partly computed on basis of recorder chart for station near Cazadero. No gage-height record Oct. 15 to Nov. 20, Mar. 1-3; discharge computed on basis of records for stations at Big Bottom and near Cazadero.

Clackamas River near Cazadero, Oreg.

Location.- Water-stage recorder, lat. 45°14', long. 122°16', in NE¼ sec. 11, T. 4 S., R. 4 E., half a mile upstream from backwater from Cazadero Dam of Portland General Electric Co. and 3 miles southeast of Cazadero. Datum of gage is 532.0 feet above mean sea level (levels by Portland General Electric Co.); gage readings have been reduced to elevations above mean sea level.
Drainage area.- 665 square miles.
Records available.- January 1909 to September 1946.
Average discharge.- 37 years, 2,554 second-feet.
Extremes.- Maximum discharge during year, 48,400 second-feet Dec. 28 (elevation, 553.5 feet), from rating curve extended above 24,000 second-feet; minimum, 552 second-feet (regulated) Sept. 27; minimum daily, 691 second-feet Oct. 7.
1909-46: Maximum discharge, 60,800 second-feet Mar. 31, 1931 (elevation, 556.5 feet), by computation of flow over dam; minimum, 410 second-feet Oct. 20, 1925, Sept. 28, 1930 (elevation, 532.03 feet), caused by shut-down in power plant at Three Lynx; minimum daily, 587 second-feet Aug. 17, 1930.
Remarks.- Records fair. Some diurnal fluctuation during low flow due to Oak Grove power plant. No diversion above station.
Cooperation.- Water-stage recorder graph and 11 discharge measurements furnished by Portland General Electric Co.

Rating tables, water year 1945-46 (elevation, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27						Dec. 28 to Sept. 30					
533.0	700	535.5	2,670	541.0	11,400	533.2	740	537.0	4,150	544.0	18,700
533.5	980	536.5	3,700	543.0	16,200	534.0	1,170	538.5	6,400	546.0	27,200
534.0	1,340	538.0	5,700	545.0	21,400	535.0	1,910	540.0	9,100	549.0	33,500
534.7	1,930	539.5	8,290			536.0	2,920	542.0	13,600		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	805	1,080	4,250	7,680	a3,800	6,050	2,450	3,430	3,440	2,090	995	880
2	761	2,230	3,470	7,560	a3,800	4,850	2,290	3,400	3,510	1,930	984	835
3	740	1,950	3,250	6,980	a3,400	4,360	2,070	4,020	3,480	1,810	940	924
4	756	1,490	3,370	7,220	a3,300	3,850	2,040	4,700	3,210	1,620	978	885
5	750	1,640	3,620	9,440	a3,200	3,510	1,990	4,460	3,020	1,660	984	902
6	750	1,440	5,360	7,500	a4,800	3,640	1,970	4,120	3,080	1,580	995	880
7	691	1,310	7,200	7,650	a4,500	3,620	1,950	4,020	2,880	1,460	984	850
8	750	1,160	5,000	7,060	a3,500	3,360	2,050	3,960	2,920	1,680	984	820
9	735	1,510	3,880	6,000	a3,100	3,200	2,040	3,730	2,790	1,770	978	825
10	725	2,270	3,450	5,240	a2,800	3,200	2,180	3,880	2,690	a1,600	962	790
11	745	2,050	3,100	4,500	a2,650	3,210	2,900	3,880	2,510	a1,450	940	790
12	735	2,750	2,780	3,800	a2,450	3,290	2,940	3,800	2,470	a1,400	995	780
13	761	2,640	2,520	3,360	a2,350	5,100	3,000	3,820	2,990	a1,350	978	776
14	700	2,420	2,340	3,110	a2,300	4,320	3,060	3,580	3,070	a1,200	984	776
15	766	3,070	2,190	2,860	a2,200	4,290	3,120	3,320	3,260	a1,450	984	815
16	745	3,170	2,060	2,670	a2,150	4,180	3,260	3,390	3,000	1,350	973	1,000
17	778	2,990	2,320	2,530	a2,200	3,760	3,590	3,720	2,930	1,260	962	995
18	740	4,080	2,290	2,460	a2,300	3,600	4,390	4,020	2,720	1,220	907	860
19	805	4,670	2,170	2,440	2,180	3,280	4,610	4,050	2,820	1,180	995	825
20	838	3,260	2,080	2,320	2,100	3,100	4,260	4,120	2,590	1,120	968	815
21	745	2,490	2,380	2,320	2,060	2,940	3,890	3,850	2,500	1,150	956	815
22	956	2,080	2,680	5,770	2,130	2,920	3,480	3,840	2,420	1,140	934	815
23	914	1,950	2,790	5,760	2,260	2,880	3,250	3,600	2,230	1,090	929	805
24	816	1,890	3,570	11,200	2,490	2,770	3,540	3,400	2,250	1,080	912	800
25	761	2,490	3,480	8,780	3,180	2,700	4,600	3,590	2,260	1,050	865	790
26	756	4,980	3,600	6,220	2,990	2,690	5,440	4,180	2,210	1,040	929	800
27	772	19,500	4,580	4,960	5,380	3,190	4,630	4,530	2,090	990	890	776
28	735	12,900	32,500	4,160	7,830	3,240	4,100	4,290	2,230	1,010	875	800
29	810	7,960	26,100	3,700	-	3,070	4,030	4,220	2,450	1,090	885	767
30	944	5,540	14,300	3,240	-	2,820	3,770	3,800	2,160	1,020	902	805
31	1,010	-	9,420	3,140	-	2,540	-	3,500	-	1,020	929	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	24,295	1,010	691	784	1.18	1.36	48,190
November	108,960	19,500	1,080	3,632	5.46	6.09	216,100
December	172,100	32,500	2,060	5,552	8.35	9.62	341,400
Calendar year 1945	1,021,093	32,500	691	2,798	4.21	57.09	2,025,000
January	161,630	11,200	2,320	5,214	7.84	9.04	320,600
February	87,400	7,830	2,060	3,121	4.69	4.89	173,400
March	110,530	6,050	2,540	3,565	5.36	6.18	219,200
April	96,890	5,440	1,950	3,230	4.86	5.42	192,200
May	120,220	4,700	3,320	3,878	5.83	6.72	238,500
June	81,980	3,510	2,090	2,733	4.11	4.58	162,600
July	41,860	2,090	990	1,350	2.03	2.34	83,030
August	29,476	995	865	951	1.43	1.65	58,460
September	24,996	1,000	767	833	1.25	1.40	49,580
Water year 1945-46	1,080,337	32,500	691	2,905	4.37	59.29	2,103,000

a No gage-height record; discharge computed on basis of records for stations at Big Bottom and above Three Lynx Creek.

Oak Grove Fork above power-plant intake, Oreg.

Location.- Water-stage recorder, lat. 45°04', long. 121°57', in SW¼ sec. 3, T. 6 S., R. 7 E., two-thirds of a mile upstream from Kink Creek, 1 mile upstream from intake of power development of Portland General Electric Co., and 24 miles southeast of Estacada.

Drainage area.- 126 square miles.

Records available.- December 1923 to September 1946. May 1909 to December 1923 (incomplete) at site 1 mile downstream, below Kink Creek; records equivalent except for slight inflow from springs and Kink Creek.

Average discharge.- 22 years (1924-46), 453 second-feet.

Extremes.- Maximum discharge during year, 2,140 second-feet Dec. 28 (gage height, 4.24 feet), from rating curve extended above 1,100 second-feet; minimum 251 second-feet Oct. 18, 24-28 (gage height, 1.77 feet).
1909-46: Maximum discharge, 5,000 second-feet Jan. 7, 1923 (gage height, 5.45 feet), computed from flow at stations on Clackamas River; minimum, 236 second-feet Oct. 15, 16, 18, 1931 (gage height, 1.42 feet).

Remarks.- Records fair. Discharge includes flow of Spring Creek, just below gage. No diversion or regulation above station.

Cooperation.- Water-stage recorder graph and 11 discharge measurements furnished by Portland General Electric Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	264	282	453	996	499	522	414	689	822	476	371	365
2	264	387	425	956	487	505	409	729	808	464	371	365
3	264	301	414	852	459	493	409	808	785	453	371	365
4	264	282	436	972	442	476	409	876	750	442	365	365
5	264	282	436	1,050	453	470	409	876	736	431	365	371
6	260	278	534	845	499	499	409	868	736	425	365	371
7	260	273	540	860	453	482	409	868	708	420	365	371
8	260	269	476	736	425	470	409	845	702	442	365	371
9	256	282	436	663	409	470	398	838	670	482	365	371
10	256	292	420	613	403	476	403	868	644	453	365	371
11	256	292	398	564	387	470	425	868	619	448	365	371
12	256	325	382	528	376	528	442	876	650	436	365	371
13	256	305	360	505	371	505	459	876	722	436	365	371
14	256	315	350	482	365	476	487	852	736	431	365	371
15	256	340	345	459	360	476	511	838	689	431	365	376
16	256	340	340	436	355	448	534	852	650	425	365	392
17	256	320	355	425	355	448	576	876	631	420	360	382
18	251	345	345	414	350	431	638	908	607	420	360	365
19	264	335	335	409	a345	431	650	924	588	414	360	360
20	260	310	335	387	340	425	644	948	582	414	360	360
21	260	296	340	398	345	425	625	940	570	409	360	360
22	273	287	340	564	345	431	594	948	558	403	360	360
23	260	282	345	534	345	425	600	900	540	403	360	360
24	251	292	350	876	360	425	638	884	534	398	360	360
25	251	320	360	736	371	414	729	a920	534	392	360	360
26	251	442	365	644	365	431	808	1,040	516	392	360	360
27	251	900	464	600	534	464	771	996	505	387	360	360
28	251	764	1,640	576	564	459	743	1,000	534	382	360	360
29	260	613	1,730	540	-	453	743	1,000	528	376	360	a360
30	273	511	1,410	511	-	436	708	908	493	376	360	360
31	264	-	1,180	499	-	420	-	852	-	376	371	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	8,024	273	251	259	2.06	2.37	15,920
November	10,862	900	269	362	2.87	3.21	21,540
December	16,639	1,730	335	537	4.26	4.91	33,000
Calendar year 1945	159,174	1,730	251	436	3.46	46.98	315,700
January	19,630	1,050	387	633	5.02	5.79	38,940
February	11,362	564	340	406	3.22	3.35	22,540
March	14,284	528	414	461	3.66	4.22	28,330
April	16,403	808	398	547	4.34	4.84	32,530
May	27,471	1,040	689	886	7.03	8.11	54,490
June	19,147	822	493	638	5.06	5.65	37,980
July	13,057	482	376	421	3.34	3.85	25,900
August	11,269	371	360	364	2.89	3.33	22,350
September	11,005	392	360	367	2.91	3.25	21,830
Water year 1945-46	179,153	1,730	251	491	3.90	52.88	355,400

a No gage-height record; discharge computed on basis of records for Clackamas River at Big Bottom.

Johnson Creek at Sycamore, Oreg.

Location.- Water-stage recorder and concrete control with steel weir for low flows, lat. 45°28'40", long. 122°30'30", in lot 2, SW¼ sec. 13, T. 1 S., R. 2 E., a third of a mile southwest of Sycamore station. Datum of gage is 228.03 feet above mean sea level, datum of 1929.

Drainage area.- 28.2 square miles.

Records available.- June 1940 to September 1946.

Extremes.- Maximum discharge during year, 888 second-feet Nov. 27 (gage height, 8.70 feet); minimum, 1.0 second-foot Oct. 1, 15, 16.
1940-46: Maximum discharge, 1,770 second-feet Nov. 23, 1942 (gage height, 11.76 feet); minimum, 0.2 second-foot Aug. 14-16, 18-22, 1940, Aug. 2, 21, 22, 1941.

Remarks.- Records good except those for Nov. 10-26 and those below 10 second-feet, which are fair. Small diversions above station for irrigation; no regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 17-26)

Oct. 1 to Nov. 26				Nov. 27 to Sept. 30					
0.9	1.1	1.6	27	0.9	1.3	1.6	26	4.6	255
1.0	2.0	1.9	43	1.0	2.2	1.9	41	5.5	370
1.1	4.2	2.2	81	1.1	4.3	2.2	57	6.6	531
1.2	7.8	2.6	87	1.2	7.8	2.6	81	8.0	760
1.3	12	3.1	125	1.3	12	3.1	114		
1.4	17			1.4	16	3.8	171		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	3.5	106	137	146	151	39	8.2	4.3	4.1	1.7	2.4
2	1.5	4.2	80	205	127	144	34	6.8	4.3	3.7	1.7	1.7
3	2.0	4.6	74	165	101	129	30	6.4	4.1	3.5	1.7	1.7
4	1.9	4.2	74	177	81	98	27	5.4	3.9	3.0	1.7	2.2
5	1.8	5.3	61	213	139	93	24	5.4	3.7	2.8	1.6	2.2
6	1.8	6.4	124	155	435	101	20	5.0	4.3	2.6	1.7	2.4
7	1.8	6.4	214	325	257	82	18	5.0	4.1	2.4	1.6	2.4
8	1.6	7.4	146	211	159	68	20	5.4	5.7	3.9	1.7	2.1
9	1.8	10	102	140	120	59	25	5.7	4.6	7.1	1.6	1.4
10	1.8	27	87	114	111	51	28	5.0	4.3	4.6	1.6	1.9
11	1.7	a60	73	86	88	44	30	4.3	3.9	3.7	1.6	1.8
12	1.7	61	56	68	74	183	24	4.1	3.5	3.2	1.7	1.9
13	1.6	a40	45	56	62	172	21	3.9	3.2	3.2	1.7	2.0
14	1.5	a35	36	49	54	113	19	3.9	3.5	2.8	1.8	2.0
15	1.2	a30	30	43	48	300	17	3.9	4.1	3.0	1.7	3.7
16	1.7	43	26	38	40	204	15	3.9	4.1	2.8	1.7	2.6
17	2.4	125	31	35	40	199	14	3.7	4.1	2.4	1.5	2.0
18	1.9	213	27	32	36	149	13	3.7	3.7	2.1	1.4	2.1
19	2.4	217	22	28	32	110	13	3.2	3.7	1.9	1.5	1.9
20	2.7	a150	21	25	30	85	12	3.2	2.8	1.8	1.5	2.1
21	2.0	a100	53	31	30	67	13	3.2	2.6	1.8	1.5	1.9
22	1.8	a80	83	147	35	70	11	3.2	2.6	1.8	2.1	2.0
23	2.2	a50	128	143	58	68	10	3.2	2.8	1.7	2.2	1.6
24	2.2	h54	171	478	62	64	9.4	3.2	3.2	1.8	2.2	1.7
25	1.8	62	148	253	63	62	8.2	3.9	3.5	1.7	2.0	2.0
26	2.0	232	193	149	83	59	7.8	6.0	3.5	1.8	1.6	2.0
27	2.7	771	217	108	217	59	7.8	9.8	4.1	1.8	2.2	2.1
28	2.2	430	549	89	240	62	7.1	7.8	5.0	1.8	2.2	1.8
29	2.0	234	408	86	-	65	11	8.2	6.4	1.7	2.2	1.8
30	3.8	150	213	73	-	52	11	6.0	5.0	1.7	2.4	1.4
31	4.2	-	182	91	-	45	-	4.6	-	1.7	2.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	63.0	4.2	1.2	2.03	0.072	0.08	125
November	3,196.0	771	3.5	107	3.79	4.21	6,340
December	3,780	549	21	122	4.33	4.99	7,500
Calendar year 1945	21,790.0	771	.7	59.7	2.12	28.73	43,220
January	3,950	478	25	127	4.50	5.21	7,830
February	2,948	435	30	105	3.72	3.89	5,850
March	3,208	300	44	103	3.65	4.23	6,360
April	539.3	39	7.1	18.0	.638	.71	1,070
May	155.2	9.8	3.2	5.01	.178	.20	308
June	118.6	6.4	2.6	3.95	.148	.16	235
July	83.9	7.1	1.7	2.71	.096	.11	166
August	55.7	2.4	1.4	1.80	.064	.07	110
September	60.8	3.7	1.4	2.03	.072	.08	121
Water year 1945-46	18,158.5	771	1.2	49.7	1.76	23.94	36,020

Peak discharge.- Nov. 27 (4 a.m.) 888 sec.-ft.; Dec. 28 (10 p.m.) 635 sec.-ft.; Jan. 7 (12:30 p.m.) 419 sec.-ft.; Jan. 24 (11:30 a.m.) 592 sec.-ft.; Feb. 6 (7 a.m.) 539 sec.-ft.; Mar. 15 (1:30 p.m.) 406 sec.-ft.

a No gage-height record; discharge computed on basis of records for East Fork Dairy Creek at Mountaindale.

h Computed from staff-gage reading.

Salmon Creek near Battle Ground, Wash.

Location.- Staff gage, lat. 45°46'55", long. 122°26'35", in NE¼SW¼ sec. 4, T. 3 N., R. 3 E., 100 feet upstream from county highway bridge, 150 feet downstream from Rock Creek, and 4 miles east of Battle Ground.

Drainage area.- 18.3 square miles.

Records available.- October 1943 to September 1946.

Extremes.- Maximum discharge observed during year, 910 second-feet Nov. 27 (gage height, 2.54 feet); minimum observed, 2.4 second-feet Oct. 8, Aug. 24.
1943-46: Maximum discharge, that of Nov. 27, 1945; minimum not determined, probably occurred sometime during Sept. 8-11, 1944, when water was below gage.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Gage read once daily. No diversion or regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.1	3.2	1.0	116
.3	7.5	1.3	224
.5	21	1.6	364
.7	48	2.0	585

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	21	155	148	216	116	56	19	16	14	4.8	a3.7
2	2.6	61	116	192	184	135	48	18	a14	14	4.5	3.2
3	3.8	a58	111	155	148	170	48	18	11	12	3.8	3.2
4	3.0	56	90	216	111	135	45	18	11	a12	3.8	3.8
5	2.8	45	67	277	177	142	39	16	12	12	3.8	4.5
6	2.8	42	116	184	526	129	36	16	16	10	4.2	4.2
7	2.6	45	142	268	315	111	33	18	14	9.4	a4.0	3.8
8	2.4	39	135	192	216	100	36	16	23	28	3.8	4.2
9	3.2	67	129	148	a182	a88	36	16	19	19	3.5	3.0
10	2.6	111	111	142	148	76	45	14	19	12	3.2	2.8
11	3.5	116	76	100	116	67	52	14	16	12	3.8	2.8
12	3.8	208	63	85	81	162	48	a13	14	11	4.2	2.8
13	2.8	184	56	81	90	142	45	12	12	11	4.8	2.6
14	3.5	155	48	67	76	129	42	12	14	10	4.8	5.9
15	2.6	129	45	56	67	224	39	12	16	10	4.8	5.9
16	4.5	192	39	52	59	200	36	12	19	9.4	4.2	6.4
17	3.8	233	42	48	67	177	36	10	14	8.5	3.2	4.8
18	3.0	315	39	45	56	155	33	10	12	11	2.8	4.2
19	3.8	268	39	a44	48	129	31	9.4	10	7.5	2.8	3.2
20	a3.8	184	39	40	48	111	36	10	11	6.4	2.8	3.0
21	3.8	122	76	67	48	90	28	11	10	5.9	2.6	a3.0
22	7.5	106	76	135	45	85	26	11	11	4.8	2.8	3.0
23	5.3	106	85	129	63	72	23	10	12	5.9	2.8	3.0
24	4.8	100	95	390	a82	72	23	a14	12	4.8	2.4	2.8
25	3.8	95	a92	224	100	95	23	18	14	5.9	2.8	2.8
26	7.0	315	90	148	90	81	21	42	12	5.3	2.8	3.2
27	45	774	100	116	159	a81	19	19	18	5.3	2.8	3.0
28	27	364	390	106	155	81	23	27	28	4.8	2.6	3.0
29	28	268	585	90	-	81	28	21	21	5.3	3.2	2.6
30	31	192	242	76	-	67	21	19	21	5.9	5.9	2.6
31	18	-	192	129	-	59	-	18	-	4.8	4.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	244.9	45	2.4	7.90	0.432	0.50	486
November	4,971	774	21	166	9.07	10.10	9,860
December	3,681	585	39	119	6.50	7.48	7,300
Calendar year 1945	25,544.9	774	1.9	70.0	3.83	51.90	50,670
Jannary	4,150	390	40	134	7.32	8.43	8,230
February	3,673	526	45	131	7.16	7.46	7,290
March	3,562	224	59	115	6.28	7.24	7,070
April	1,055	56	19	35.2	1.92	2.14	2,090
May	493.4	42	9.4	15.9	.869	1.00	979
June	452.0	28	10	15.1	.825	.92	897
July	297.9	28	4.8	9.61	.525	.61	591
August	112.5	5.9	2.4	3.63	.198	.23	223
September	107.0	6.4	2.6	3.57	.195	.22	212
Water year 1945-46	22,799.7	774	2.4	62.5	3.42	46.33	45,230

a No gage-height record; discharge interpolated.

Lewis River near Cougar, Wash.

Location.- Water-stage recorder, lat. 46°03'30", long. 122°12'50", in SE¼ sec. 29, T. 7 N., R. 5 E., 1 mile downstream from Swift Creek and 4 miles east of Cougar. Datum of gage is 576.4 feet above mean sea level (from river-profile survey).

Drainage area.- 481 square miles.

Records available.- July 1910 to March 1912 (gage heights only), June 1924 to September 1946. July 1909 to June 1910 at site 1,000 feet upstream from Swift Creek.

Average discharge.- 22 years (1924-46), 2,677 second-feet.

Extremes.- Maximum discharge during year not determined, occurred sometime during period of no gage-height record; minimum, 653 second-feet Oct. 18 (gage height, 3.13 feet). 1910-12, 1924-46: Maximum discharge, 54,400 second-feet Dec. 21, 1933 (gage height, 15.7 feet, datum then in use), from rating curve extended above 15,000 second-feet; minimum, 454 second-feet Oct. 21, 1931 (gage height, 0.01 foot datum then is use).

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

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 10				Dec. 4 to Sept. 30					
3.2	695	4.0	1,350	3.2	745	5.0	2,490	8.0	8,990
3.4	830	4.5	1,920	3.4	860	5.5	3,250	9.0	12,200
3.6	985	5.0	2,610	3.6	1,000	6.0	4,140	10.0	16,000
				4.0	1,340	6.5	5,150	11.0	20,200
				4.5	1,870	7.0	6,290		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	740	1,160	4,500	5,300	3,170	4,730	2,420	4,730	4,940	5,040	1,600	993
2	734	1,500	4,000	6,000	3,250	4,430	2,300	4,630	5,370	4,840	1,540	958
3	728	1,400	4,500	5,300	2,860	4,140	2,300	5,260	5,480	4,430	1,540	951
4	714	1,300	5,370	5,800	2,630	3,770	2,230	6,290	5,150	4,140	1,490	965
5	708	1,300	5,480	6,600	2,560	3,500	2,170	6,290	4,730	3,860	1,440	979
6	702	1,200	6,970	4,800	3,250	4,140	2,110	6,050	4,630	3,680	1,390	958
7	702	1,150	7,050	4,900	2,930	3,860	2,110	5,590	4,240	3,500	1,390	930
8	695	1,090	5,700	4,400	2,630	3,590	2,170	5,150	4,430	3,950	1,340	902
9	689	1,150	4,730	3,900	2,490	3,420	2,170	5,040	4,430	4,430	1,300	888
10	695	1,200	4,040	3,500	2,360	3,340	2,490	5,370	4,140	3,860	1,300	881
11	689	1,300	3,590	3,100	2,170	3,340	3,950	5,480	4,040	3,680	1,250	888
12	683	1,550	3,300	2,800	2,050	5,040	4,140	5,700	4,140	3,420	1,250	881
13	677	2,000	3,100	2,700	1,990	4,940	4,140	5,700	4,630	3,170	1,250	881
14	677	2,400	2,900	2,550	1,930	4,430	4,140	5,260	6,050	2,930	1,200	895
15	671	2,800	2,800	2,500	1,930	4,140	4,140	4,840	6,290	2,780	1,200	965
16	677	3,000	2,700	2,400	1,870	3,680	4,240	4,940	5,480	2,630	1,160	993
17	677	2,900	2,600	2,400	1,990	3,420	4,330	5,700	4,730	2,490	1,120	916
18	659	4,500	2,500	2,450	1,990	3,170	5,040	6,290	4,530	2,490	1,120	874
19	714	4,300	2,450	2,600	1,870	2,930	5,370	6,540	4,840	2,490	1,080	854
20	708	3,600	2,400	2,490	1,870	2,780	5,150	6,790	5,260	2,490	1,080	842
21	708	3,000	2,300	2,560	1,870	2,630	4,730	6,290	5,480	2,560	1,080	842
22	830	2,650	2,200	3,550	1,990	2,780	4,330	6,540	4,840	2,420	1,080	836
23	760	2,400	2,350	3,510	2,560	2,930	4,140	6,050	4,140	2,300	1,040	830
24	714	2,300	2,600	7,080	3,090	2,930	4,330	5,820	4,040	2,170	1,040	830
25	760	2,800	2,700	6,050	3,770	2,930	5,370	6,050	4,630	2,110	1,000	830
26	913	5,200	3,000	4,940	3,340	3,010	6,540	6,540	4,140	1,990	1,000	818
27	1,200	10,000	5,000	4,330	4,730	3,090	5,590	6,790	3,860	1,870	1,000	806
28	1,030	8,200	17,500	3,860	5,150	2,930	5,370	6,200	4,300	1,820	979	800
29	1,040	6,800	16,000	3,500	-	2,860	5,480	5,590	6,290	1,820	979	789
30	1,200	5,400	10,000	3,090	-	2,700	5,510	5,150	5,590	1,760	972	794
31	1,200	-	7,000	3,010	-	2,560	-	4,940	-	1,650	979	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	24,294	1,200	659	784	1.63	1.88	48,190
November	89,550	10,000	1,090	2,985	6.21	6.92	177,600
December	151,330	17,500	2,200	4,882	10.1	11.70	300,200
Calendar year 1945	1,036,257	20,600	659	2,839	5.90	80.12	2,055,000
January	121,970	7,080	2,400	3,935	8.18	9.43	241,900
February	74,290	5,150	1,870	2,653	5.52	5.74	147,400
March	108,140	5,040	2,560	3,488	7.25	8.36	214,500
April	118,140	6,540	2,110	3,938	8.19	9.13	234,300
May	177,600	6,790	4,630	5,729	11.9	13.73	352,300
June	144,840	6,290	3,860	4,828	10.0	11.20	287,300
July	92,770	5,040	1,650	2,993	6.22	7.17	184,000
August	37,189	1,600	972	1,200	2.49	2.88	73,760
September	26,569	993	789	886	1.84	2.05	52,700
Water year 1945-46	1,166,682	17,500	659	3,196	6.64	90.19	2,314,000

Note.- No gage-height record Nov. 11 to Dec. 3, Dec. 12 to Jan. 19, May 28; discharge computed on basis of recorded range in stage and records for Wind River near Carson.

Lewis River at Ariel, Wash.

Location.- Water-stage recorder, lat. 45°57'10", long. 122°33'45", in NW¼NE¼ sec. 4, T. 5 N., R. 2 E., at Ariel, half a mile downstream from Ariel Dam and power plant and 3 miles upstream from Cedar Creek. Datum of gage is 44 feet above mean sea level, unadjusted (levels by Northwestern Electric Co.).

Drainage area.- 731 square miles.

Records available.- July 1922 to September 1946. July to November 1909 at site 3 miles upstream.

Average discharge.- 23 years (1923-46), 4,384 second-feet, adjusted for storage since March 1931.

Extremes (regulated).- Maximum discharge during year, 39,500 second-feet Dec. 28 (gage height, 17.23 feet); minimum, 416 second-feet Aug. 19 (gage height, 0.55 foot). 1909, 1922-46: Maximum discharge, 129,000 second-feet Dec. 22, 1933 (gage height, 35.0 feet, from floodmarks), from rating curve extended above 22,000 second-feet and from spillway-gate openings; no flow at times June 30, July 1-3, 6-9, 1931 (caused by regulation during construction of Ariel Dam); minimum daily discharge, 1 second-foot July 6, 1931.

Remarks.- Records good. No diversions. Flow regulated by Lake Merwin Reservoir on Lewis River, lat. 45°57'30", long. 122°33'10", in SW¼ sec. 34, T. 6 N., R. 2 E., at Ariel, completed in 1931; usable storage, 246,000 acre-feet between elevations 165 feet (set by Federal Power Commission) and 235 feet (spillway crest) above mean sea level. Water is used for power.

Cooperation.- Gage-height record collected in cooperation with Pacific Power & Light Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,870	a2,720	8,640	14,200	6,800	9,030	4,090	6,330	5,670	6,300	2,240	†626
2	1,900	a2,600	†7,460	16,300	7,630	8,940	3,900	6,060	†6,330	6,060	2,070	640
3	2,100	a2,620	7,760	14,400	†5,990	†7,880	3,840	6,910	6,220	5,370	1,950	1,510
4	2,100	†a570	8,470	17,200	5,550	6,990	3,900	8,150	5,690	5,010	†474	1,940
5	1,830	a2,950	8,700	20,800	6,200	6,570	3,930	†8,060	5,640	4,780	1,580	1,650
6	1,250	a2,900	14,000	†14,000	12,100	8,770	3,900	7,630	5,420	4,660	1,830	2,090
7	†548	a2,760	13,700	13,700	7,160	7,740	†3,670	7,300	4,650	†4,080	1,940	643
8	1,780	a2,870	10,100	11,100	6,450	6,900	3,720	6,300	3,780	4,900	1,990	†641
9	1,520	a2,760	†7,860	9,160	5,530	6,110	3,910	6,270	†3,700	5,920	1,780	1,350
10	1,630	2,740	6,860	7,810	†5,340	†5,870	3,960	6,650	4,850	4,920	1,430	1,100
11	1,850	†740	5,880	6,500	4,460	6,170	7,560	6,770	4,730	4,800	†753	1,100
12	1,620	2,390	5,100	5,780	4,040	11,500	7,720	†7,050	4,640	4,300	1,730	1,010
13	1,140	3,370	4,610	†5,150	4,030	9,620	6,910	7,220	5,370	3,990	1,540	1,050
14	†552	6,600	4,170	4,830	3,940	7,990	†6,850	6,260	6,840	†3,860	1,300	814
15	1,570	9,050	3,900	4,510	3,880	7,930	6,480	5,920	7,400	3,740	1,440	†628
16	1,700	9,100	†3,870	4,120	3,870	6,600	6,460	5,820	†6,470	3,850	1,260	1,610
17	1,920	8,450	3,880	3,940	†3,620	†6,610	6,640	6,850	5,660	3,770	1,200	1,530
18	1,980	†10,700	3,880	4,030	4,180	5,940	7,130	7,960	5,490	3,040	†566	1,420
19	1,970	9,600	3,880	4,230	3,950	5,670	7,770	†7,770	5,570	2,710	1,160	1,260
20	1,540	7,140	3,870	†4,160	3,830	5,150	7,390	8,370	5,900	2,790	1,460	1,200
21	†866	5,760	3,840	4,600	3,860	4,890	†6,530	7,630	6,300	†2,000	1,350	700
22	2,150	4,780	3,840	8,980	4,070	5,060	6,080	7,800	5,750	3,220	1,250	†634
23	1,830	4,050	†3,860	7,240	6,120	5,790	5,840	7,050	†4,900	2,910	1,410	1,240
24	1,820	4,040	3,880	16,500	†7,420	†5,680	5,840	6,710	4,900	2,900	1,590	1,610
25	1,550	†4,460	6,230	12,300	9,240	5,890	7,300	7,380	5,750	2,680	†744	1,580
26	1,890	12,500	6,450	9,130	7,200	5,860	8,950	†7,620	4,900	2,700	1,600	1,540
27	a1,520	25,300	9,180	†7,420	11,700	5,990	7,940	8,060	4,800	2,510	1,450	1,240
28	†a490	16,200	34,000	6,620	11,300	5,400	†7,100	7,530	5,200	†1,740	1,540	643
29	a2,300	13,800	32,700	5,840	-	5,130	7,480	6,850	7,950	2,400	1,270	†630
30	a2,730	9,940	†21,900	5,120	-	4,680	6,790	6,110	†7,180	2,230	1,320	1,340
31	a2,620	-	16,500	5,360	-	†4,140	-	5,740	-	2,230	658	-

Month	Observed				Change in contents in Lake Merwin Reservoir (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	2,730	490	1,682	103,400	-29,800	73,600	1,197	1.64	1.89
November	25,300	570	6,449	383,700	+25,430	409,100	6,875	9.40	10.49
December	34,000	3,840	8,999	553,300	-790	552,500	8,986	12.3	14.17
Calendar year 1945	34,000	488	4,735	3,428,000	+78,210	3,506,000	4,842	6.62	89.92
January	20,800	3,940	8,872	545,500	+1,190	546,700	8,891	12.2	14.02
February	12,100	3,620	6,052	336,100	-400	335,700	6,045	8.27	8.61
March	11,500	4,140	6,661	409,600	+400	410,000	6,868	9.12	10.52
April	8,950	3,670	5,986	356,200	0	356,200	5,986	8.19	9.14
May	8,370	5,740	7,036	432,700	0	432,700	7,036	9.63	11.10
June	7,950	3,700	5,588	332,500	+6,360	338,900	5,695	7.79	8.69
July	6,300	1,740	3,754	230,800	-5,980	226,800	3,889	5.05	5.82
August	2,240	474	1,415	87,020	+1,200	88,220	1,435	1.96	2.26
September	2,090	626	1,165	69,320	-4,380	64,940	1,091	1.49	1.67
Water year 1945-46	34,000	474	5,304	3,840,000	-4,770	3,835,000	5,298	7.25	98.38

† Sunday.
a No gage-height record; discharge computed on basis of record of power output.

East Fork Lewis River near Heisson, Wash.

Location.- Water-stage recorder, lat. 45°50', long. 122°28', in N½ sec. 17, T. 4 N., R. 3 E., just upstream from Basket Creek, 1½ miles northeast of Heisson, and 20 miles upstream from mouth. Datum of gage is 366.8 feet above mean sea level (from river-profile surveys).

Drainage area.- 125 square miles.

Records available.- September 1929 to September 1946.

Average discharge.- 17 years, 699 second-feet.

Extremes.- Maximum discharge during year, 9,500 second-feet during period of no gage-height record probably Nov. 27 (gage height, 9.7 feet, from recorded range in stage); minimum, 52 second-feet Sept. 30 (gage height, 0.31 foot).
1929-46: Maximum discharge, 15,600 second-feet Dec. 22, 1933 (gage height, 12.3 feet), from rating curve extended above 12,000 second-feet; minimum, 29 second-feet Nov. 3, 1935 (gage height, 0.04 foot).

Remarks.- Records good except those for periods of no gage-height record, which are poor. No diversion or regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.4	59	1.6	254	4.0	1,320
.6	79	2.0	363	5.0	2,100
.8	104	2.5	535	6.0	3,160
1.0	133	3.0	751	7.0	4,570
1.3	187	3.5	1,010	8.0	6,230

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	400	1,550	2,200	1,850	1,760	638	497	302	516	117	72
2	115	1,300	1,450	2,600	1,950	1,760	575	555	289	427	115	66
3	110	1,100	1,360	1,800	1,400	1,640	555	751	269	336	111	67
4	105	850	1,360	2,200	1,250	1,390	535	704	244	322	105	69
5	105	700	1,420	2,900	1,400	1,280	535	575	237	292	104	77
6	95	600	2,830	2,100	3,000	1,840	497	497	276	269	103	74
7	90	500	1,900	2,650	1,900	1,560	497	479	240	247	103	71
8	85	440	1,300	2,200	1,500	1,320	516	427	308	389	99	67
9	80	450	1,050	1,400	1,250	1,160	516	397	256	479	92	64
10	80	800	950	1,200	1,100	1,070	770	420	244	385	90	58
11	80	1,300	800	980	950	1,070	1,220	404	223	339	90	57
12	75	2,000	650	860	820	2,400	1,130	394	212	308	92	58
13	75	1,800	620	780	740	2,010	1,010	369	221	279	98	57
14	70	2,100	590	680	720	1,560	901	333	286	262	100	75
15	70	1,900	560	600	700	1,680	849	311	339	284	99	103
16	85	1,900	500	540	740	1,420	799	313	357	244	91	128
17	85	2,000	540	500	780	1,530	824	336	345	221	81	103
18	80	2,200	490	520	799	1,460	1,010	342	319	202	74	76
19	85	1,700	480	555	728	1,250	928	325	289	183	71	64
20	95	1,200	470	575	682	1,070	751	351	266	170	69	61
21	80	900	470	735	704	982	682	325	249	164	69	65
22	100	800	470	2,100	824	1,010	575	305	242	157	68	64
23	120	700	490	1,450	1,190	1,040	555	276	240	154	66	61
24	110	740	560	4,500	1,720	1,070	638	262	284	143	65	59
25	100	820	500	2,900	1,960	1,130	824	295	348	140	67	59
26	130	2,400	800	1,600	1,420	1,220	824	342	292	133	67	60
27	220	5,000	1,300	1,300	2,730	1,250	616	420	295	133	65	58
28	280	4,000	6,000	1,000	2,280	1,040	535	479	452	127	64	58
29	270	3,000	3,600	900	-	928	638	444	775	124	67	54
30	370	2,100	2,800	800	-	775	575	366	638	126	79	56
31	380	-	2,800	950	-	682	-	330	-	121	75	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	3,945	380	70	127	1.02	1.17	7,820
November	45,700	5,000	400	1,523	12.2	13.60	90,640
December	40,660	6,000	470	1,312	10.5	12.10	80,650
Calendar year 1945	298,289	6,000	47	817	6.54	88.75	591,600
January	46,075	4,500	500	1,486	11.9	13.71	91,390
February	37,087	3,000	682	1,325	10.6	11.03	73,560
March	41,357	2,400	682	1,334	10.7	12.30	82,030
April	21,518	1,220	497	717	5.74	6.40	42,680
May	12,624	751	262	407	3.26	3.76	25,040
June	9,337	775	212	311	2.49	2.78	18,520
July	7,676	516	121	248	1.98	2.28	15,230
August	2,656	117	64	85.7	.686	.79	5,270
September	2,061	128	54	68.7	.550	.61	4,090
Water year 1945-46	270,696	6,000	54	742	5.94	80.53	536,900

Note.- No gage-height record Oct. 1 to Dec. 2, Dec. 7 to Jan. 18, Jan. 23 to Feb. 17; discharge computed on basis of recorded range in stage and records for Washougal River near Washougal.

Cowlitz River at Packwood, Wash.

Location.- Water-stage recorder, lat. 46°36'40", long. 121°40'45", in SE¼ sec. 16, T. 13 N., R. 9 E., half a mile upstream from Skate Creek and half a mile northwest of Packwood.

Drainage area.- 287 square miles.

Records available.- September 1929 to September 1946. July 1911 to December 1919 at site 1 mile upstream, published as Cowlitz River at Lewis.

Average discharge.- 25 years, 1,534 second-feet.

Extremes.- Maximum discharge during year, 14,900 second-feet Dec. 28 (gage height, 10.04 feet); minimum, 442 second-feet Sept. 28.
1911-19, 1929-46: Maximum discharge, 36,600 second-feet Dec. 21, 1933 (gage height, 13.0 feet), from rating curve extended above 12,600 second-feet; minimum, 160 second-feet Nov. 21, 1929 (gage height, 2.10 feet).

Remarks.- Records fair. No diversion or regulation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	874	1,240	1,290	2,840	1,000	1,670	965	2,290	3,960	3,750	1,340	695
2	852	1,670	1,120	2,520	985	1,570	944	2,440	4,970	4,060	1,290	689
3	799	1,720	1,030	2,150	923	1,420	930	3,180	5,090	3,650	1,290	684
4	773	1,720	a1,050	2,080	881	1,340	930	4,280	4,500	3,360	1,290	676
5	825	1,670	a1,100	2,020	888	1,290	937	3,960	a3,900	3,270	1,290	670
6	860	1,420	a1,200	1,720	923	1,470	944	3,750	a3,500	3,270	1,200	633
7	881	a1,150	a1,400	1,720	909	1,420	930	3,660	a3,250	3,270	1,040	598
8	846	a970	a1,200	1,620	874	1,340	930	3,960	a3,100	3,850	1,030	592
9	812	a880	a1,050	1,470	860	1,240	930	4,170	a3,050	4,390	1,070	598
10	839	a830	916	1,340	846	1,200	988	4,730	3,000	3,860	1,100	609
11	853	a800	799	1,200	818	1,200	1,240	4,390	3,180	3,860	1,090	609
12	853	a780	728	1,160	806	1,380	1,470	4,500	3,560	3,560	1,020	609
13	846	780	683	1,100	792	1,380	1,670	4,170	4,280	3,090	951	621
14	853	1,040	639	1,060	799	1,240	1,780	3,360	6,270	2,670	944	621
15	839	1,340	615	1,020	806	1,160	1,840	2,840	5,590	2,440	930	586
16	825	1,240	621	995	806	1,080	1,980	3,360	4,390	2,220	923	580
17	792	a1,180	615	995	818	1,010	2,080	4,730	3,850	2,150	888	534
18	806	1,120	592	1,000	818	958	2,590	5,210	4,390	2,220	888	501
19	839	1,100	580	1,010	799	909	2,920	5,090	5,720	2,520	944	501
20	860	1,020	592	980	799	867	2,520	5,340	6,700	2,750	988	498
21	860	a960	664	1,010	812	839	2,150	4,850	6,130	2,840	980	495
22	902	a900	695	1,100	846	860	1,980	5,210	4,620	2,590	937	474
23	895	846	708	1,120	1,040	867	1,900	4,170	3,460	2,290	930	495
24	944	799	721	1,670	1,200	874	2,220	4,620	a3,200	2,080	895	534
25	1,670	773	740	1,520	1,280	888	3,460	5,090	a2,900	1,960	860	528
26	1,620	839	768	1,340	1,240	980	4,850	5,590	a2,550	1,900	825	506
27	1,520	1,170	1,160	1,200	1,920	1,120	3,650	5,860	2,520	1,780	818	474
28	1,380	1,980	9,350	1,160	2,020	1,110	3,090	5,090	2,670	1,720	818	468
29	1,470	1,620	9,420	1,090	-	1,080	3,000	4,280	3,750	1,670	773	495
30	1,520	1,470	4,850	1,020	-	1,020	2,670	3,450	3,560	1,520	786	512
31	1,470	-	3,360	1,010	-	995	-	3,580	-	1,340	721	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	30,958	1,670	773	999	3.48	4.01	61,400
November	35,007	1,980	773	1,167	4.07	4.54	69,440
December	50,254	9,420	580	1,621	5.65	6.51	99,680
Calendar year 1945	528,894	9,420	416	1,449	5.05	68.54	1,049,000
January	43,240	2,840	980	1,395	4.86	5.60	85,770
February	27,498	2,020	792	982	3.42	3.56	54,540
March	35,777	1,670	839	1,154	4.02	4.64	70,960
April	58,448	4,850	930	1,948	6.79	7.57	115,900
May	131,180	5,860	2,290	4,232	14.7	17.00	260,200
June	121,610	6,700	2,520	4,054	14.1	15.76	241,200
July	88,880	4,390	1,340	2,770	9.65	11.13	170,300
August	30,849	1,340	721	995	3.47	4.00	61,190
September	17,062	695	468	569	1.98	2.21	33,840
Water year 1945-46	667,763	9,420	468	1,829	6.37	86.53	1,324,000

a No gage-height record; discharge computed on basis of recorded range in stage and records for station near Mayfield.

Cowlitz River near Mayfield, Wash.

Location.- Water-stage recorder, lat. 46°30'40", long. 122°36'50", in NE¼ sec. 24, T. 12 N., R. 1 E., 1 mile upstream from Mill Creek, 2 miles downstream from Winston Creek, and 2¼ miles west of Mayfield. Datum of gage is 226.6 feet above mean sea level, datum of 1929.

Drainage area.- 1,400 square miles.

Records available.- April 1934 to September 1946. August 1910 to November 1911 at site 2½ miles upstream, published as Cowlitz River at Mayfield.

Average discharge.- 12 years, 5,327 second-feet.

Extremes.- Maximum discharge during year, 37,600 second-feet Dec. 29 (gage height, 20.33 feet); minimum, 1,260 second-feet Oct. 19 (gage height, 7.97 feet).
1910-11, 1934-46: Maximum discharge, 42,600 second-feet Nov. 24, 1942 (gage height, 21.50 feet); minimum, 766 second-feet Nov. 30, Dec. 1, 1936 (gage height, 7.18 feet).
Flood of December 1933 is known to have exceeded that of Nov. 24, 1942.

Remarks.- Records excellent except those for period of shifting control, which are good. No diversion or regulation.

Rating tables, water year 1945-46, except period of shifting control (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29						Dec. 30 to Sept. 30					
8.0	1,350	10.0	4,370	14.0	14,500	8.0	970	10.0	3,990	14.0	14,000
8.5	1,950	11.0	6,420	16.0	21,000	8.5	1,550	11.0	6,050	15.0	17,100
9.0	2,660	12.0	8,800	18.0	28,300	9.0	2,230	12.0	8,430	16.0	20,400
9.5	3,470	13.0	11,500	20.0	36,300	9.5	3,080	13.0	11,100		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,600	3,770	8,280	18,300	7,610	12,000	5,150	9,160	10,500	9,690	3,350	1,960
2	1,570	4,290	7,260	17,300	7,580	10,800	4,900	8,590	11,400	9,600	3,220	1,910
3	1,540	6,020	6,980	15,800	6,710	9,850	4,760	9,630	12,400	9,340	3,150	1,880
4	1,500	5,690	7,710	16,400	6,010	8,690	4,600	12,600	11,800	8,510	3,060	1,850
5	1,440	5,660	8,100	18,500	6,270	8,000	4,440	13,600	10,700	7,930	3,080	1,980
6	1,440	5,070	9,320	15,200	7,860	9,210	4,400	12,800	10,100	7,680	3,020	1,980
7	1,460	4,430	11,200	14,400	6,980	9,210	4,240	12,000	9,590	7,320	2,900	1,850
8	1,480	3,950	9,630	12,800	6,200	8,460	4,180	11,700	8,900	7,580	2,880	1,770
9	1,440	3,680	8,120	11,000	5,810	7,800	4,220	12,000	9,080	9,290	2,810	1,710
10	1,440	3,980	7,220	9,770	5,500	7,370	4,300	12,800	8,770	9,000	2,590	1,680
11	1,430	4,180	6,600	8,400	5,060	7,220	5,460	13,200	8,280	8,380	2,610	1,630
12	1,450	4,580	5,900	7,440	4,740	8,720	7,060	13,200	8,380	8,000	2,560	1,590
13	1,420	5,290	5,350	6,820	4,540	9,260	7,320	13,200	9,080	7,460	2,510	1,590
14	1,370	5,690	4,930	6,270	4,500	8,400	7,580	12,000	11,600	6,800	2,410	1,630
15	1,360	6,800	4,620	5,790	4,500	7,980	7,760	10,400	13,800	6,250	2,380	1,730
16	1,380	7,170	4,350	5,400	4,440	7,320	7,930	10,000	12,500	5,790	2,320	1,820
17	1,380	6,690	4,140	5,150	4,580	6,960	8,180	11,600	10,700	5,440	2,290	1,760
18	1,280	7,500	3,960	5,020	a4,520	6,550	9,210	14,000	10,000	5,320	2,230	1,590
19	1,370	8,320	3,770	5,080	a4,460	6,070	10,900	14,600	10,500	5,250	2,220	1,500
20	1,480	7,010	3,680	4,940	4,400	5,680	10,700	14,900	11,900	5,440	2,230	1,450
21	1,450	5,960	4,330	4,940	4,480	5,400	9,600	14,300	12,700	5,740	2,280	1,430
22	1,580	5,210	4,730	6,340	4,740	5,400	8,300	14,000	11,500	5,610	2,260	1,420
23	1,690	4,770	4,810	6,500	5,800	5,500	7,580	13,400	9,690	5,210	2,230	1,380
24	1,560	4,540	4,990	12,600	8,530	5,380	7,630	12,500	8,380	4,840	2,190	1,360
25	1,630	4,910	5,030	11,900	10,300	5,680	9,600	13,400	8,480	4,560	2,150	1,380
26	2,780	6,780	5,230	9,820	9,000	6,180	13,800	14,400	8,280	4,340	2,080	1,380
27	3,470	12,900	5,790	8,530	11,400	6,520	15,400	15,200	7,880	4,160	2,050	1,350
28	3,370	12,400	17,700	7,630	13,600	8,500	11,300	14,900	7,660	3,950	2,060	1,310
29	2,910	11,700	36,900	7,060	-	6,200	10,900	13,600	9,500	3,860	2,080	1,300
30	3,150	9,850	31,200	6,340	-	5,830	10,300	11,700	10,400	3,760	2,020	1,330
31	3,890	-	22,100	6,430	-	5,460	-	10,500	-	3,530	1,990	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	56,350	3,890	1,280	1,818	1.30	1.50	111,800
November	188,750	12,900	3,680	6,292	4.49	5.01	374,400
December	272,930	36,900	3,680	8,804	6.29	7.25	541,300
Calendar year 1945	2,117,200	36,900	1,280	5,801	4.14	56.25	4,199,000
January	297,870	18,500	4,940	9,609	6.86	7.91	590,800
February	181,120	13,600	4,400	6,469	4.62	4.81	359,200
March	229,560	12,000	5,380	7,405	5.29	6.10	455,300
April	229,700	13,800	4,180	7,657	5.47	6.10	455,600
May	389,880	15,200	8,596	12,580	8.99	10.36	773,300
June	304,250	13,800	7,660	10,140	7.24	8.08	603,500
July	199,610	9,690	3,530	6,439	4.60	5.30	395,900
August	76,770	3,350	1,990	2,478	1.77	2.04	152,300
September	48,450	1,980	1,300	1,615	1.15	1.29	96,100
Water year 1945-46	2,475,240	36,900	1,280	6,781	4.84	65.75	4,910,000

a Ne gage-height record; discharge interpolated
Note.- Shifting-control method used Oct. 1-28.

Cowlitz River at Castle Rock, Wash.

Location.- Water-stage recorder, lat. 46°16'30", long. 122°55'00", in SE¼ sec. 10, T. 9 N., R. 2 W., at highway bridge in Castle Rock, 2½ miles downstream from Toutle River and 14 miles upstream from mouth. Datum of gage is 19.73 feet above mean sea level, datum of 1929.

Drainage area.- 2,240 square miles.

Records available.- December 1926 to September 1946.

Average discharge.- 19 years (1927-46), 8,315 second-feet.

Extremes.- Maximum discharge during year, 54,700 second-feet Dec. 29 (gage height, 19.91 feet); minimum, 1,550 second feet Oct. 18, 19 (gage height, 5.98 feet).
1926-46: Maximum discharge observed, 139,000 second-feet Dec. 23, 1933 (gage height, 31.6 feet, present datum), from rating curve extended above 65,000 second-feet; minimum discharge, 998 second-feet Nov. 7, 8, 1935.

Remarks.- Records excellent except those above 30,000 second-feet, which are good, and those for periods of faulty intake action, which are fair. No diversion or regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

6.0	1,580	9.0	7,430	15.0	28,400
6.5	2,560	10.0	9,980	16.5	35,600
7.0	3,240	11.0	12,900	18.0	43,600
7.5	4,180	12.0	16,200	19.5	52,200
8.0	5,200	13.5	22,000		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,200	4,990	14,800	28,900	e15,600	20,000	8,280	12,300	12,900	13,000	4,300	2,500
2	2,140	5,800	12,700	29,400	e21,800	17,900	7,860	11,300	13,400	12,400	4,100	2,390
3	2,060	7,770	12,000	27,300	16,600	16,200	7,550	11,700	14,700	12,100	3,950	2,360
4	1,990	7,770	13,100	27,700	13,100	14,200	7,170	14,600	14,400	11,100	3,820	2,310
5	1,910	8,080	13,400	37,000	e12,800	13,000	6,870	16,800	13,100	10,300	3,760	2,460
6	1,860	7,450	16,100	28,300	e24,300	13,400	6,710	16,000	12,400	9,820	3,760	2,820
7	1,860	6,620	20,700	26,800	18,700	13,800	6,520	15,000	11,800	9,440	3,670	2,500
8	1,850	5,770	17,900	25,000	14,500	12,800	6,410	14,200	11,300	9,600	3,420	2,310
9	1,840	5,450	14,500	20,500	12,400	12,000	6,570	14,200	11,300	11,700	3,280	2,200
10	1,790	6,350	12,400	17,600	11,500	11,300	7,170	14,800	11,300	11,800	3,200	2,100
11	1,760	6,910	11,300	15,200	10,500	11,100	10,100	15,700	10,500	10,800	3,190	2,060
12	1,740	7,100	9,980	13,200	9,440	13,100	11,600	15,500	10,400	10,300	3,190	2,060
13	1,730	8,760	8,920	12,000	8,710	15,500	11,500	15,700	10,900	9,600	3,150	2,010
14	1,680	9,280	8,110	10,800	8,360	14,200	11,300	14,700	13,100	8,920	3,060	2,060
15	1,660	10,800	7,530	9,950	8,160	14,200	11,100	12,900	16,400	8,340	3,040	2,340
16	1,670	12,600	7,100	9,230	7,980	13,000	11,000	11,900	15,900	7,690	2,970	2,530
17	1,700	12,600	6,960	8,740	e8,040	12,200	11,100	13,100	13,700	7,140	2,900	2,480
18	1,610	16,400	6,500	8,440	e8,480	11,900	11,800	15,800	12,400	6,870	2,830	2,200
19	1,680	18,500	6,100	8,440	7,940	10,800	13,700	17,000	12,500	6,780	2,750	2,010
20	1,930	13,800	5,950	8,180	7,690	9,870	14,200	17,400	13,700	6,910	2,770	1,880
21	1,850	11,100	7,380	e8,040	e7,600	9,150	13,200	17,300	15,000	7,190	2,770	1,850
22	2,010	9,340	8,740	e9,980	e7,690	8,890	11,600	16,500	14,300	7,170	2,750	1,840
23	2,230	8,240	9,080	e10,800	e10,800	9,230	10,500	16,300	12,500	6,750	2,740	1,760
24	2,010	7,620	9,340	e21,700	e13,200	9,130	10,100	14,700	10,800	6,210	2,720	1,730
25	1,880	8,160	9,260	e23,500	e17,400	9,390	11,400	15,600	11,300	5,860	2,680	1,720
26	2,580	12,000	9,790	18,800	15,200	10,300	15,500	16,700	11,100	5,540	2,630	1,720
27	4,200	25,600	10,500	15,600	e19,500	10,500	17,400	18,000	10,700	5,350	2,560	1,680
28	4,560	23,000	29,500	13,600	e22,800	10,600	14,900	18,400	10,400	5,070	2,550	1,610
29	3,840	21,200	51,700	12,500	-	10,200	14,000	17,300	12,900	4,880	2,510	1,600
30	3,760	18,000	48,600	11,200	-	9,580	13,600	15,000	14,200	4,820	2,530	1,620
31	4,840	-	36,000	e11,700	-	8,820	-	13,300	-	4,580	2,530	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	70,420	4,840	1,610	2,272	1.01	1.17	139,700
November	327,060	25,600	4,990	10,900	4.87	5.43	648,700
December	455,940	51,700	5,950	14,710	6.57	7.57	904,300
Calendar year 1945	3,195,670	51,700	1,610	8,755	3.91	53.06	6,338,000
January	530,100	37,000	8,040	17,100	7.63	8.80	1,051,000
February	360,790	24,300	7,600	12,890	5.75	5.99	715,600
March	376,260	20,000	8,820	12,140	5.42	6.25	746,300
April	320,710	17,400	6,410	10,690	4.77	5.32	636,100
May	469,700	18,400	11,300	15,150	6.76	7.80	931,600
June	379,300	16,400	10,400	12,640	5.64	6.30	752,300
July	258,010	13,000	4,580	8,323	3.72	4.28	511,800
August	96,080	4,300	2,510	3,099	1.38	1.60	190,600
September	62,510	2,620	1,600	2,084	.930	1.04	124,000
Water year 1945-46	3,706,880	51,700	1,600	10,160	4.54	61.55	7,352,000

Peak discharge.- Nov. 27 (1 p.m.) 26,800 sec.-ft.; Dec. 29 (9 p.m.) 54,700 sec.-ft.; Jan. 5 (10:30 a.m.) 38,400 sec.-ft.
e Intake action faulty; discharge computed on basis of partly estimated gage heights.

Cispus River near Randle, Wash.

Location.- Water-stage recorder, lat. 46°26'50", long. 121°51'35", in NW¼ sec. 18, T. 11 N., R. 8 E. (unsurveyed), 500 feet upstream from bridge to Tower Rock ranger station, 4 miles downstream from North Fork, and 8 miles southeast of Randle. Datum of gage is 1,221.4 feet above mean sea level (from river-profile survey).

Drainage area.- 323 square miles.

Records available.- October 1910 to February 1912, September 1929 to September 1946.

Average discharge.- 18 years (1910-11, 1929-46), 1,231 second-feet.

Extremes.- Maximum discharge during year, 6,870 second-feet Dec. 29 (gage height, 7.69 feet); minimum, 288 second-feet Oct. 18 (gage height, 2.78 feet).
1910-12, 1929-46: Maximum discharge, 20,000 second-feet Dec. 22, 1933 (gage height, 12.7 feet), from rating curve extended above 8,000 second-feet; minimum, 183 second-feet Dec. 30, 1936; minimum gage height, 2.55 feet Oct. 25, 1942.

Remarks.- Records good. No diversion or regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

2.8	293	4.0	920	6.0	3,550
3.0	352	4.5	1,430	7.0	5,400
3.3	466	5.0	2,050	8.0	7,540
3.6	625	5.5	2,750		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	321	518	1,550	3,140	1,150	1,670	912	2,390	3,300	2,600	896	513
2	321	750	1,400	3,380	1,120	1,550	904	2,460	3,640	2,530	864	504
3	318	938	1,610	3,060	1,030	1,450	880	3,140	3,720	2,390	832	499
4	313	848	1,920	2,900	956	1,350	864	4,070	3,380	2,250	816	480
5	310	824	1,980	2,750	1,000	1,300	880	3,980	3,140	2,120	800	485
6	315	732	1,920	2,390	1,110	1,340	864	3,800	2,980	2,050	776	480
7	313	677	1,980	2,320	1,040	1,320	848	3,640	2,750	1,920	746	458
8	304	607	1,790	2,050	983	1,260	856	3,460	2,680	2,120	711	445
9	301	601	1,550	1,860	938	1,230	848	3,720	2,750	2,390	697	437
10	301	613	1,430	1,670	888	1,240	856	4,160	2,530	2,120	697	437
11	301	578	1,300	1,510	a860	1,240	1,040	4,070	2,530	2,050	697	432
12	299	596	1,170	1,410	a820	1,360	1,240	4,160	2,600	1,920	690	432
13	299	590	1,080	1,310	a780	1,350	1,440	3,980	2,900	1,860	677	432
14	299	644	1,010	1,210	a740	1,300	1,670	3,460	3,550	1,670	664	441
15	304	1,000	947	1,150	a740	1,240	1,790	3,060	3,460	1,610	651	466
16	307	956	904	1,100	a740	1,160	1,920	3,380	3,060	1,480	664	458
17	296	864	888	1,060	a760	1,130	2,050	4,160	2,750	1,410	632	432
18	293	1,010	816	1,090	a760	1,070	2,680	4,620	2,750	1,380	625	416
19	307	947	776	1,080	732	1,030	2,980	4,720	2,980	1,400	625	409
20	321	840	776	1,010	725	983	2,600	4,720	3,300	1,430	625	397
21	307	760	816	1,010	725	965	2,320	4,250	3,300	1,430	625	401
22	318	704	872	1,120	753	1,020	2,050	4,430	2,900	1,380	619	405
23	301	684	938	1,130	864	1,000	1,980	3,890	2,460	1,290	607	397
24	313	684	956	2,130	1,070	974	a2,050	3,980	2,320	1,190	586	401
25	336	856	956	1,920	1,260	983	3,060	4,250	2,320	1,130	561	394
26	386	1,360	974	1,670	1,190	1,020	4,160	4,520	2,180	1,080	540	383
27	413	2,600	1,200	1,540	1,600	1,130	3,460	4,720	2,120	1,030	540	379
28	383	2,390	4,190	1,420	1,860	1,100	2,980	4,430	2,250	1,000	524	376
29	394	2,250	6,430	1,310	-	1,070	2,900	3,890	2,900	1,000	513	372
30	494	1,860	4,720	1,200	-	1,000	2,600	3,300	2,680	956	508	376
31	561	-	3,640	1,170	-	956	-	3,220	-	920	508	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	10,349	561	293	334	1.03	1.19	20,530
November	29,281	2,600	518	976	3.02	3.37	58,080
December	52,489	6,430	776	1,693	5.24	6.04	104,100
Calendar year 1945	412,538	8,430	293	1,130	3.50	47.49	818,200
January	53,070	3,380	1,010	1,712	5.30	6.11	105,300
February	27,194	1,860	725	971	3.01	3.13	53,940
March	36,791	1,670	956	1,187	3.67	4.24	72,970
April	55,682	4,160	848	1,856	5.75	6.41	110,400
May	120,030	4,720	2,390	3,872	12.0	13.82	238,100
June	86,180	3,720	2,120	2,873	8.89	9.92	170,900
July	51,106	2,600	920	1,649	5.11	5.88	101,400
August	20,496	896	508	661	2.05	2.36	40,650
September	12,937	513	372	431	1.33	1.49	25,660
Water year 1945-46	555,605	6,430	293	1,522	4.71	63.96	1,102,000

a No gage-height record; discharge computed on basis of recorded range in stage and records for stations on nearby streams.

Tilton River near Cinebar, Wash.

Location.- Water-stage recorder, lat. 46°34'35", long. 122°31'15", in SW¼ sec. 26, T. 13 N., R. 2 E., 1,000 feet downstream from Cinnabar Creek, 2 miles southeast of Cinebar, and 2½ miles upstream from mouth. Datum of gage is 397.6 feet above mean sea level (from river-profile survey).

Drainage area.- 158 square miles.

Records available.- February 1941 to September 1946.

Extremes.- Maximum discharge during year, 9,250 second-feet Dec. 28 (gage height, 11.89 feet), from rating curve extended above 4,000 second-feet; minimum, 91 second-feet Oct. 16, 18, 19.

1941-46: Maximum discharge, 9,850 second-feet Nov. 23, 1942 (gage height, 12.21 feet), from rating curve extended above 4,000 second-feet; minimum, 66 second-feet Sept. 11, 12, 1944.

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

Rating table, water year 1945-46, except periods of shifting control (gage height, in feet, and discharge, in second-feet)

3.7	81	4.7	314	7.0	1,770
3.9	114	5.0	422	8.0	2,840
4.1	152	5.5	660	9.0	4,190
4.3	198	6.0	970	10.0	5,760
4.5	252	6.5	1,340	11.0	7,520

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	616	1,500	3,160	1,500	2,660	905	970	472	900	179	201
2	144	1,120	1,380	3,220	1,640	2,490	872	938	481	700	176	190
3	136	1,000	1,420	2,960	1,340	2,160	840	1,150	476	600	170	190
4	132	938	1,540	4,220	1,150	1,820	810	1,300	434	510	163	200
5	125	1,000	1,540	4,790	1,220	1,720	780	1,250	399	440	163	230
6	119	905	2,700	3,160	2,010	2,720	750	1,070	395	390	163	220
7	114	780	2,690	3,160	1,640	2,380	708	920	388	350	165	150
8	109	654	1,860	2,780	1,340	2,010	696	830	451	600	163	120
9	107	666	1,460	2,220	1,180	1,720	720	800	463	850	159	110
10	102	938	1,300	1,910	1,110	1,590	840	820	459	500	154	104
11	100	1,220	1,150	1,590	970	1,540	1,590	860	411	400	146	102
12	99	1,560	1,040	1,380	872	2,440	2,010	900	388	350	146	102
13	97	1,860	872	1,220	840	2,320	1,770	700	399	330	148	106
14	95	2,540	780	1,080	840	1,860	1,540	600	833	320	148	123
15	92	2,600	720	970	872	1,640	1,340	510	1,150	320	146	138
16	92	2,220	672	905	905	1,460	1,260	510	1,080	290	146	198
17	97	1,960	632	872	1,000	1,420	1,260	700	905	280	142	198
18	92	2,380	585	872	1,110	1,300	1,460	800	750	270	142	161
19	119	2,490	540	938	1,040	1,180	1,460	900	672	260	140	148
20	136	1,910	545	938	1,000	1,080	1,260	1,000	622	250	140	140
21	121	1,500	872	938	1,080	1,000	1,220	750	585	240	140	144
22	451	1,260	1,080	1,720	1,260	1,000	1,040	650	580	230	142	146
23	214	1,110	1,080	1,590	2,540	1,080	938	590	595	220	142	146
24	174	1,110	1,220	4,040	3,280	1,080	970	549	610	210	144	146
25	266	1,420	1,220	3,020	3,620	1,300	1,260	585	1,000	208	148	148
26	485	2,790	1,260	2,110	2,600	1,500	1,500	610	1,000	203	156	152
27	960	3,780	1,610	1,680	3,760	1,500	1,300	696	938	198	163	159
28	780	2,660	6,600	1,460	3,620	1,340	1,080	678	1,200	191	176	165
29	590	2,380	6,800	1,300	-	1,220	1,220	616	1,500	188	176	174
30	627	1,820	4,640	1,110	-	1,080	1,150	521	1,100	186	186	203
31	654	-	3,350	1,150	-	1,000	-	476	-	184	193	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	7,581	960	92	245	1.55	1.78	15,040
November	49,187	3,780	616	1,640	10.4	11.58	97,560
December	54,658	6,800	540	1,763	11.2	12.87	108,400
Calendar year 1945	339,759	6,800	75	931	5.89	79.98	673,800
January	62,463	4,790	872	2,015	12.8	14.70	123,900
February	45,339	3,760	840	1,619	10.2	10.67	89,930
March	50,610	2,720	1,000	1,633	10.3	11.91	100,400
April	34,549	2,010	696	1,152	7.29	8.13	68,530
May	24,249	1,300	476	782	4.95	5.71	48,100
June	20,736	1,500	388	691	4.37	4.88	41,130
July	11,168	900	184	360	2.28	2.63	22,150
August	4,865	193	140	157	.994	1.15	9,650
September	4,714	230	102	157	.994	1.11	9,350
Water year 1945-46	370,119	6,800	92	1,014	6.42	87.12	734,100

Note.- No gage-height record May 4-22, June 28 to July 24, Sept. 2-9; discharge computed on basis of recorded range in stage and records for South Fork Toutle River at Toutle. Shifting-control method used Oct. 1-26, July 25 to Sept. 15.

Toutle River near Silver Lake, Wash.

Location.- Water-stage recorder, lat. 46°20'10", long. 122°43'30", in SE¼ sec. 19, T. 10 N., R. 1 E., at highway bridge half a mile downstream from confluence of North and South Forks and 5 miles northeast of Silver Lake. Datum of gage is 407.3 feet above mean sea level (from river-profile survey).

Drainage area.- 474 square miles.

Records available.- October 1919 to December 1923, September 1929 to September 1946. September 1909 to August 1912 at site 2 miles downstream, published as Toutle River near Castle Rock.

Average discharge.- 22 years (1909-11, 1919-21, 1922-23, 1929-46), 1,924 second-feet.

Extremes.- Maximum discharge during year not determined, occurred sometime during period of no gage-height record Nov. 26 to Jan. 8; minimum, 407 second-feet Sept. 30. 1909-12, 1919-23, 1929-46: Maximum discharge observed, 35,600 second-feet Mar. 2, 1910; maximum gage height recorded, 22.7 feet Dec. 23, 1933; minimum discharge, 240 second-feet Nov. 21, 1929.

Remarks.- Records good except those for periods of fragmentary or no gage-height record, which are poor. No diversion or regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28

1.8	430	2.6	940
2.0	540	3.0	1,250
2.3	730	3.5	1,700

Note.- Same as following table above 3.8 feet.

Dec. 29 to Sept. 30

2.0	480	5.0	3,850
2.3	645	6.0	5,890
2.6	855	7.0	7,720
3.0	1,200	8.0	9,430
3.5	1,680	9.0	11,100
4.0	2,260	10.2	13,000

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	600	1,170	4,200	8,000	3,660	4,210	1,860	2,250	2,260	2,660	810	470
2	582	1,990	3,600	9,000	4,450	4,160	1,780	2,160	2,380	2,460	773	470
3	558	2,140	4,200	8,500	3,480	3,850	1,710	2,420	2,320	2,260	759	460
4	546	1,880	4,900	9,500	2,880	3,320	1,650	2,880	2,180	2,070	738	455
5	534	2,250	5,200	7,500	3,270	3,000	1,580	2,800	2,020	1,910	717	500
6	524	1,930	5,200	6,800	6,100	3,110	1,530	2,580	2,040	1,800	717	490
7	507	1,690	5,500	6,000	4,400	2,970	1,480	2,390	2,000	1,710	704	480
8	496	1,480	4,900	5,400	3,480	2,770	1,500	2,260	2,250	2,060	671	465
9	485	1,520	4,000	4,870	3,010	2,560	1,530	2,190	2,140	2,600	645	450
10	480	2,040	3,400	4,270	2,730	2,470	1,540	2,260	2,120	2,240	633	440
11	474	2,100	3,000	3,500	2,440	2,470	2,550	2,310	1,900	2,090	627	430
12	463	2,270	2,700	3,050	2,250	3,590	2,790	2,380	1,830	1,890	621	430
13	458	2,890	2,300	2,760	2,120	3,730	2,630	2,270	1,980	1,740	615	455
14	446	2,950	2,100	2,510	2,060	3,230	2,490	2,090	2,520	1,620	621	520
15	441	3,560	1,950	2,310	2,080	3,330	2,340	1,940	2,690	1,580	597	660
16	468	3,930	1,850	2,160	2,010	3,000	2,250	2,020	2,520	1,460	580	600
17	485	3,370	1,850	2,060	2,160	2,920	2,260	f2,290	2,300	1,370	558	568
18	452	5,590	1,700	2,100	2,190	2,800	2,470	2,300	2,150	1,330	530	525
19	588	5,050	1,600	2,090	2,040	2,530	2,700	f2,480	2,240	1,320	525	485
20	652	3,570	1,550	1,970	1,970	2,300	2,660	f2,550	2,360	1,330	520	471
21	546	2,800	1,650	2,000	1,950	2,140	2,560	2,430	2,340	1,330	520	476
22	751	2,400	1,800	2,730	2,030	2,160	2,260	f2,340	2,190	1,280	510	476
23	652	2,140	2,050	2,650	3,050	2,210	2,120	f2,210	2,060	1,200	500	453
24	564	2,000	2,050	6,380	3,610	2,250	2,120	2,420	2,070	1,120	495	440
25	564	2,510	2,050	5,150	4,340	2,440	2,460	f2,470	2,520	1,070	485	435
26	691	4,500	2,200	4,040	3,690	2,550	2,970	2,920	2,310	1,020	480	431
27	1,270	8,000	4,000	3,320	4,790	2,530	2,720	f3,010	2,250	960	480	423
28	1,080	7,600	7,400	2,940	4,950	2,430	2,460	f3,110	2,620	927	470	419
29	955	7,200	13,000	2,650	-	2,310	2,760	2,900	3,500	911	460	411
30	1,110	4,800	11,000	2,380	-	2,150	2,520	2,520	3,050	911	455	423
31	1,190	-	9,200	2,520	-	2,000	-	2,320	-	848	460	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	19,612	1,270	441	633	1.34	1.54	38,900
November	97,100	8,000	1,170	3,237	6.83	7.62	192,600
December	122,100	13,000	1,550	3,939	8.31	9.58	242,200
Calendar year 1945	760,378	13,000	371	2,083	4.39	59.66	1,508,000
January	151,110	9,500	1,970	4,229	8.92	10.29	260,100
February	87,170	6,100	1,950	3,113	6.57	6.84	172,900
March	87,510	4,210	2,000	2,823	5.96	6.87	173,600
April	66,250	2,970	1,480	2,208	4.66	5.20	131,400
May	75,470	3,110	1,940	2,435	5.14	5.92	149,700
June	69,110	3,500	1,830	2,304	4.86	5.42	137,100
July	49,077	2,660	848	1,583	3.34	3.85	97,340
August	18,276	810	455	590	1.24	1.43	36,250
September	14,211	660	411	474	1.00	1.11	28,190
Water year 1945-46	836,996	13,000	411	2,293	4.84	65.67	1,660,000

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

Note.- No gage-height record Nov. 26 to Jan. 8, Aug. 28 to Sept. 16; discharge computed on basis of recorded range in stage and records for stations on nearby streams.

South Fork Toutle River at Toutle, Wash.

Location.- Water-stage recorder, lat. 46°19'20", long. 122°41'45", in SW¼NW¼ sec. 28, T. 10 N., R. 1 E., half a mile southwest of Toutle, 1½ miles upstream from mouth, and 3 miles downstream from Johnson Creek. Datum of gage is at mean sea level (from river-profile survey).

Drainage area.- 118 square miles.

Records available.- October 1939 to September 1946.

Extremes.- Maximum discharge during year, 6,140 second-feet Dec. 28 (elevation, 457.20 feet); minimum, 103 second-feet Sept. 29, 30.
1939-46: Maximum discharge, 7,290 second-feet Feb. 7, 1945 (elevation, 457.84 feet); minimum, 67 second-feet Sept. 9-13, 1944.

Remarks.- Records good except those for October to November and those for periods of no gage-height record, which are fair. No diversion or regulation.

Rating tables, water year 1945-46 (elevation, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 1 to Nov. 1, Feb. 6-26)

Oct. 1 to Feb. 26						Feb. 27 to Sept. 30			
452.0	114	453.0	490	455.0	2,560	452.0	108	453.0	455
452.2	161	453.5	850	455.5	3,290	452.2	151	453.5	805
452.4	220	454.0	1,330	456.0	4,070	452.4	206	454.0	1,270
452.7	335	454.5	1,890			452.7	311	454.5	1,850

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	154	440	1,040	2,080	1,110	1,300	503	658	643	864	180	128
2	161	676	931	2,850	1,480	1,270	461	650	643	718	174	124
3	158	683	1,120	2,420	1,090	1,150	450	765	608	629	172	124
4	156	620	1,170	2,900	859	980	422	917	554	541	169	128
5	151	690	1,160	3,910	1,120	873	395	856	515	485	167	164
6	141	592	1,540	2,490	2,290	899	386	749	574	444	169	154
7	138	490	1,650	2,560	1,540	839	372	680	541	406	161	135
8	136	415	a1,300	2,020	1,160	781	391	629	643	554	156	124
9	132	479	a1,100	1,480	967	718	400	601	594	702	151	122
10	132	722	a900	1,210	826	680	528	615	622	554	146	116
11	132	746	770	994	730	733	1,040	643	548	497	146	114
12	132	786	676	850	648	1,300	1,080	688	509	444	146	112
13	129	834	a620	754	599	1,270	971	650	522	406	149	108
14	125	1,050	a580	669	592	1,050	856	601	650	386	149	137
15	123	1,390	a540	620	606	1,080	765	548	688	386	146	209
16	161	1,430	a500	571	578	944	718	554	629	345	144	200
17	172	1,200	a470	538	698	926	710	650	580	319	140	161
18	144	1,900	a445	599	698	873	805	718	541	303	135	140
19	227	1,540	420	599	670	773	873	733	560	296	130	128
20	263	1,090	440	564	a620	680	839	781	574	284	128	122
21	192	826	762	585	a700	622	797	725	541	270	126	124
22	255	683	850	1,210	a800	643	665	718	503	259	124	120
23	238	606	1,040	877	a1,000	665	608	643	491	242	124	112
24	192	571	1,140	2,350	1,400	688	629	601	592	232	124	110
25	175	810	1,070	1,710	1,650	781	789	695	741	225	124	108
26	271	2,170	1,090	1,230	1,250	822	953	773	622	216	124	108
27	550	3,920	1,250	1,000	1,720	797	805	882	560	209	124	106
28	420	2,220	4,370	850	1,730	725	710	882	758	200	122	106
29	375	1,710	4,480	746	-	665	873	926	1,280	200	122	104
30	514	1,300	2,840	662	-	608	749	749	1,050	200	130	114
31	496	-	2,220	683	-	554	-	665	-	194	128	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	6,755	550	123	218	1.85	2.13	13,400
November	32,589	3,920	415	1,086	9.20	10.27	64,640
December	38,484	4,480	420	1,241	10.5	12.13	76,330
Calendar year 1945	241,265	4,480	76	661	5.60	76.04	478,600
January	42,581	3,910	538	1,374	11.6	13.42	84,460
February	29,131	2,290	578	1,040	8.81	9.18	57,780
March	26,669	1,300	554	860	7.29	8.41	52,900
April	20,543	1,080	372	685	5.81	6.47	40,750
May	21,945	926	548	708	6.00	6.92	43,530
June	18,876	1,280	491	629	5.33	5.95	37,440
July	12,010	864	194	387	3.28	3.79	23,820
August	4,430	180	122	143	1.21	1.40	8,790
September	3,862	209	104	129	1.09	1.22	7,660
Water year 1945-46	257,875	4,480	104	707	5.99	81.29	511,500

Peak discharge.- Nov. 27 (4:20 a.m.) 4,900 sec.-ft.; Dec. 28 (9 p.m.) 6,140 sec.-ft.; Jan. 4 (11 p.m.) 4,900 sec.-ft.

a No gage-height record; discharge computed on basis of records for Tilton River near Cinebar.

Elokomin River near Cathlamet, Wash.

Location.- Water-stage recorder, lat. 46°13'10", long. 123°20'30", in SE¼ sec. 31, T. 9 N., R. 5 W., 2 miles northeast of Cathlamet and 4 miles upstream from mouth. Datum of gage is 29.60 feet above mean sea level, datum of 1929.

Drainage area.- 66 square miles.

Records available.- October 1940 to September 1946.

Extremes.- Maximum discharge during year, 5,970 second-feet Dec. 28 (gage height, 10.56 feet); minimum, 33 second-feet Oct. 14, 15.
1940-46: Maximum discharge, that of Dec. 28, 1945; minimum, 24 second-feet Aug. 21, 22, Sept. 2, 3, 1945.
Maximum stage known, 17.2 feet in December 1933, from information by local residents.

Remarks.- Records excellent except those above 2,000 second-feet and those for Aug. 28 to Sept. 13, which are fair. No diversion or regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

2.4	57	3.6	316	6.0	1,480
2.6	89	4.0	441	7.0	2,270
2.8	126	4.5	625	8.0	3,160
3.0	167	5.0	855	9.0	4,150
3.3	236	5.5	1,140	10.0	5,250

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	151	830	1,200	2,320	1,020	294	210	84	169	57	39
2	43	333	710	1,810	2,530	1,050	277	196	e2	148	56	37
3	43	224	745	1,550	1,550	830	266	185	82	134	53	39
4	42	200	645	2,340	1,050	710	246	176	80	124	51	46
5	39	200	733	2,710	1,320	625	234	167	84	115	53	68
6	37	185	2,160	1,750	2,270	645	224	163	100	105	54	58
7	37	171	1,670	1,990	1,550	566	214	156	89	102	51	43
8	36	154	1,170	1,550	1,110	528	229	154	89	180	47	38
9	35	297	855	1,110	910	475	258	150	96	178	44	36
10	36	638	688	855	755	424	853	140	93	140	44	35
11	35	585	645	688	625	465	1,870	134	84	128	44	35
12	35	665	547	585	605	882	1,170	130	77	118	46	35
13	35	718	475	492	528	830	755	128	74	111	49	37
14	33	1,370	408	441	492	755	585	126	93	107	50	38
15	33	965	370	392	475	655	475	122	118	103	49	64
16	36	1,020	345	364	441	732	408	116	109	96	46	107
17	38	965	330	333	458	732	360	113	94	93	42	69
18	35	1,730	291	342	441	645	325	107	86	87	39	53
19	47	1,610	266	316	408	547	296	103	77	80	38	46
20	47	992	269	316	405	492	308	102	70	75	37	42
21	42	710	339	406	441	441	310	102	69	72	37	50
22	86	547	316	709	508	408	264	98	79	70	36	44
23	60	441	328	805	882	389	246	96	84	68	36	41
24	50	389	389	2,030	805	441	229	93	120	68	36	38
25	134	424	379	1,200	805	475	214	94	163	64	37	38
26	176	1,490	424	855	688	475	236	115	132	63	37	37
27	159	1,350	948	688	1,700	424	214	115	116	62	36	37
28	136	882	4,660	605	1,380	382	205	105	132	60	36	36
29	128	805	2,890	547	-	386	261	98	231	62	39	36
30	163	910	1,750	494	-	348	231	91	200	63	47	43
31	154	-	1,270	1,170	-	316	-	87	-	60	42	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	2,057	176	33	66.4	1.01	1.16	4,080
November	21,121	1,730	151	704	10.7	11.90	41,890
December	27,845	4,660	266	898	13.6	15.69	55,230
Calendar year 1945	143,310	4,660	24	393	5.95	80.75	284,300
January	30,643	2,710	316	988	15.0	17.27	60,780
February	27,452	2,530	405	980	14.8	15.47	54,450
March	18,293	1,050	316	590	8.94	10.31	36,280
April	12,057	1,870	205	402	6.09	6.79	23,910
May	3,972	210	87	128	1.94	2.24	7,880
June	3,087	231	69	103	1.56	1.74	6,120
July	3,105	180	60	100	1.52	1.75	6,160
August	1,369	57	36	44.2	.670	.77	2,720
September	1,365	107	35	45.5	.689	.77	2,710
Water year 1945-46	152,366	4,660	33	417	6.32	85.86	302,200

Peak discharge.- Nov. 26 (5 p.m.) 2,980 sec.-ft.; Dec. 28 (8:40 a.m.) 5,970 sec.-ft.; Jan. 4 (9 p.m.) 3,250 sec.-ft.; Jan. 24 (2 a.m.) 2,620 sec.-ft.; Feb. 1 (12 p.m.) 2,980 sec.-ft.; Feb. 6 (2 a.m.) 2,710 sec.-ft.

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Youngs River near Astoria, Oreg.

Location.- Water-stage recorder, lat. 46°04', long. 123°47', in NW¼ sec. 27, T. 7 N., R. 9 W., 50 feet upstream from crest of Youngs River Falls, 2½ miles southwest of Olney, and 9 miles southeast of Astoria. Datum of gage is 62.64 feet above mean sea level, datum of 1929.

Drainage area.- 32 square miles.

Records available.- January 1934 to September 1946. March 1916 to September 1917 (gage heights only) at site 3 miles upstream. August 1927 to December 1933 at site 1 mile upstream.

Average discharge.- 12 years (1934-46), 160 second-feet.

Extremes.- Maximum discharge during year, 2,980 second-feet Feb. 6 (gage height, 10.93 feet); minimum, 5.8 second-feet Sept. 29 (gage height, 0.77 foot).
1927-46: Maximum discharge, 6,300 second-feet Nov. 24, 1927 (gage height, 6.52 feet, site and datum then in use), from rating curve extended above 2,000 second-feet; minimum, 3.7 second-feet Sept. 22, 23, 1938.

Remarks.- Records good except those for period of no gage-height record, which are poor. No diversion or regulation above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 6

0.8	6.6	2.6	63	7.0	1,050
1.0	10	3.0	97	8.1	1,490
1.3	16	3.5	151	9.0	1,920
1.6	24	4.0	230	10.0	2,450
1.9	32	5.0	450		
2.2	44	6.0	720		

Feb. 7 to Sept. 30

0.7	4.8	1.6	22	3.0	99
.9	7.7	1.9	31	3.5	155
1.0	9.3	2.2	42	4.0	230
1.3	15	2.6	67		

Note.- Same as preceding table above 4.0 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	44	603	490	1,460		a110	35	32	107	15	8.3
2	10	185	522	969	1,590		a105	77	30	89	15	7.6
3	10	109	582	651	744		a100	73	29	81	14	7.7
4	10	78	485	1,000	492		f95	68	27	70	13	8.8
5	9.5	96	550	1,080	1,190		89	64	26	62	13	12
6	9.1	102	960	663	1,740		88	61	34	55	14	12
7	8.6	105	693	801	f813		84	57	33	50	13	9.8
8	8.2	90	495	651			128	55	35	101	12	8.8
9	7.9	246	354	472			185	52	41	97	11	7.9
10	7.9	590	283	368			498	f48	34	72	10	7.2
11	7.9	455	281	281			771	44	29	61	11	6.8
12	7.9	528	223	225			485	41	27	54	11	6.6
13	7.9	398	184	185			321	41	25	48	12	6.5
14	7.7	425	156	156			230	39	39	46	13	8.5
15	7.6	538	137	137			181	39	53	46	13	f17
16	8.2	630	125	126		a320	151	36	51	41	12	28
17	9.1	500	124	116			130	34	46	38	11	20
18	8.4	807	108	122	a175		116	32	40	34	10	13
19	18	648	96	117			107	30	34	31	9.0	10
20	20	432	89	121			132	28	30	28	8.5	8.8
21	16	293	117	141			145	28	29	25	8.3	8.8
22	30	209	182	388			117	28	31	24	8.0	8.3
23	24	160	450	414			105	27	31	22	7.9	7.7
24	18	178	455	1,000			95	26	76	21	7.9	7.1
25	17	368	326	624			91	25	121	20	8.0	6.6
26	30	1,180	302	420			96	52	87	19	8.0	6.5
27	42	780	526	304			88	51	78	18	7.7	6.5
28	32	490	2,220	283			82	56	85	17	7.7	6.4
29	28	505	1,130	275	-		122	55	155	16	7.9	6.1
30	36	603	687	237	-		96	42	123	17	8.8	6.6
31	36	-	552	624	-		-	36	-	16	9.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	503.9	42	7.6	16.3	0.509	0.59	999
November	11,772	1,180	44	392	12.2	13.68	23,350
December	13,997	2,220	89	452	14.1	16.27	27,760
Calendar year 1945	70,793.4	2,220	5.2	194	6.06	82.29	140,400
January	13,441	1,080	116	434	13.6	15.62	26,660
February	11,704	1,740	-	418	13.1	13.60	23,210
March	9,920	-	-	320	10.0	11.53	19,680
April	5,143	771	82	171	5.34	5.98	10,200
May	1,430	85	25	46.1	1.44	1.66	2,840
June	1,513	155	25	50.4	1.58	1.76	3,000
July	1,426	107	16	46.0	1.44	1.66	2,830
August	329.8	15	7.7	10.6	.331	.38	654
September	285.9	28	6.1	9.53	.298	.33	567
Water year 1945-46	71,465.6	2,220	6.1	196	6.12	83.06	141,800

Peak discharge.- Nov. 26 (3 p.m.) 2,150 sec.-ft.; Dec. 28 (9 a.m.) 2,910 sec.-ft.; Jan. 4 (10 p.m.) 1,430 sec.-ft.; Jan. 24 (3 a.m.) 1,330 sec.-ft.; Feb. 1 (11:30 p.m.) 2,830 sec.-ft.; Feb. 6 (12:30 a.m.) 2,980 sec.-ft.

a No gage-height record; discharge estimated on basis of Nehalem River near Foss and Wilson and Trask Rivers near Tillamook.

f Computed on basis of partly estimated gage-height record.

NEHALEM RIVER BASIN

Nehalem River near Foss, Oreg.

Location.- Water-stage recorder, lat. 45°42', long. 123°45', in NW¼ sec. 35, T. 3 N., R. 9 W., a quarter of a mile upstream from Cook Creek and 2.2 miles northeast of Foss. Datum of gage is 32.60 feet above mean sea level, datum of 1929 (Oregon State Highway Department bench mark).

Drainage area.- 667 square miles.

Records available.- October 1939 to September 1946.

Extremes.- Maximum discharge during year, 27,400 second-feet Dec. 29 (gage height, 15.87 feet); minimum, 102 second-feet Sept. 28-30 (gage height, 1.48 feet).
1939-46: Maximum discharge, 31,100 second-feet Dec. 19, 1941 (gage height, 17.13 feet); minimum, 78 second-feet Sept. 11-13, 1944 (gage height, 1.45 feet).

Remarks.- Records excellent. No known diversion or regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.4	82	3.0	895	8.0	6,850
1.5	107	3.5	1,260	9.5	10,100
1.7	168	4.0	1,660	11.0	13,900
2.0	285	5.0	2,620	13.0	19,200
2.3	435	6.0	3,760	16.0	27,800
2.6	625	7.0	5,140		

Disoharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	453	7,040	10,300	10,300	6,280	2,420	1,320	495	811	200	122
2	168	923	5,970	12,800	17,900	6,350	2,250	1,220	465	703	200	124
3	162	1,040	6,100	12,700	14,500	6,210	2,100	1,150	441	618	197	127
4	155	825	6,100	14,800	9,770	5,470	1,980	1,110	418	534	193	133
5	152	790	6,740	17,200	11,000	4,780	1,870	1,040	408	485	186	142
6	149	853	11,000	15,100	21,600	4,320	1,750	993	447	441	182	155
7	142	874	11,700	15,100	20,200	3,960	1,650	958	447	413	179	152
8	139	839	9,750	14,600	14,200	3,530	1,740	916	441	514	172	152
9	136	1,520	7,410	13,100	9,380	3,160	2,000	895	435	690	165	146
10	136	4,460	5,850	8,470	7,330	2,900	3,500	846	418	632	162	133
11	133	4,800	5,040	6,350	5,980	2,800	6,640	804	396	566	158	127
12	133	5,400	4,430	5,040	5,050	4,420	5,500	755	386	502	158	124
13	130	4,920	3,860	4,200	4,410	5,390	4,410	729	360	453	158	119
14	130	5,510	3,440	3,620	3,970	5,610	3,640	703	391	430	158	122
15	127	6,280	3,060	3,170	3,620	7,190	3,130	684	408	424	158	142
16	130	5,850	2,780	2,830	3,330	7,880	2,730	664	441	386	158	172
17	136	a6,400	2,580	2,560	3,170	7,610	2,450	625	441	365	158	179
18	133	11,300	2,380	2,420	3,040	6,680	2,230	586	418	350	152	165
19	146	11,200	2,170	2,260	2,820	5,730	2,040	560	391	326	142	152
20	155	8,530	2,000	2,120	2,640	4,800	2,110	534	350	298	133	142
21	162	6,000	2,200	2,310	2,610	4,050	2,080	508	321	281	130	136
22	200	4,480	2,540	4,690	2,720	3,620	1,880	502	312	264	127	130
23	208	3,560	2,620	5,020	3,890	3,390	1,690	502	312	247	124	127
24	204	3,070	4,740	11,500	4,160	3,410	1,580	489	370	239	119	119
25	200	4,030	4,410	11,300	4,450	3,520	1,500	489	566	231	113	113
26	256	13,600	4,360	8,920	4,100	3,480	1,490	566	566	220	110	107
27	408	17,800	6,410	6,720	6,500	3,290	1,400	638	514	216	107	107
28	380	15,200	22,600	5,480	7,100	3,060	1,310	684	560	212	110	104
29	375	10,200	26,100	4,830	-	2,910	1,460	651	846	212	110	102
30	430	7,920	19,700	4,230	-	2,780	1,420	580	895	204	116	104
31	424	-	13,800	5,400	-	2,610	-	540	-	200	119	-

Month	Seoond-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	6,114	430	127	197	0.295	0.34	12,130
November	168,627	17,800	453	5,621	8.43	9.40	334,500
December	218,880	26,100	2,000	7,061	10.6	12.20	434,100
Calendar year 1945	1,111,127	26,800	85	3,044	4.56	61.94	2,204,000
January	239,140	17,200	2,120	7,714	11.6	13.33	474,300
February	209,740	21,600	2,610	7,491	11.2	11.69	416,000
March	141,190	7,880	2,610	4,555	6.83	7.87	280,000
April	71,950	6,640	1,310	2,398	3.60	4.01	142,700
May	23,241	1,320	489	750	1.12	1.30	46,100
June	13,659	895	312	455	.682	.76	27,090
July	12,465	811	200	402	.603	.70	24,720
August	4,654	200	107	150	.225	.26	9,230
September	3,979	179	102	133	.199	.22	7,890
Water year 1945-46	1,113,639	26,100	102	3,051	4.57	62.08	2,209,000

a No gage-height record; discharge computed on basis of records for Wilson and Trask Rivers near Tillamook.

Wilson River near Tillamook, Oreg.

Location.- Water-stage recorder, lat. 49°29', long. 123°43', in NW¼ sec. 18, T. 1 S., R. 8 W., 1 mile upstream from North Fork and 6½ miles east of Tillamook. Datum of gage is 42.13 feet above mean sea level, datum of 1929.

Drainage area.- 159 square miles.

Records available.- July 1931 to September 1946. December 1914 to November 1916 (incomplete) at site three-quarters of a mile downstream.

Average discharge.- 15 years (1931-46), 1,172 second-feet.

Extremes.- Maximum discharge during year, 17,100 second-feet Dec. 28 (gage height, 14.43 feet); minimum, 78 second-feet Sept. 29, 30.
1914-16, 1931-46: Maximum discharge, 30,000 second-feet Dec. 21, 1933 (gage height, 19.28 feet, site and datum then in use), from rating curve extended above 15,000 second-feet; minimum observed, 55 second-feet Sept. 10-12, 1944.

Remarks.- Records good except those for period of shifting control and those below 500 second-feet, which are fair. No diversion or regulation above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 9)

Oct. 1 to Dec. 27

1.4	138	2.5	555	5.0	2,700
1.5	165	3.0	870	6.0	3,890
1.8	260	3.6	1,330	7.0	5,190
2.1	375	4.2	1,870	8.0	6,580

Dec. 28 to Sept. 30

0.9	80	2.3	585	6.2	4,290
1.1	122	2.8	890	7.5	5,980
1.3	172	3.3	1,260	9.0	8,080
1.6	265	4.0	1,850	11.0	10,980
1.9	385	5.0	2,870	13.0	14,340

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	197	460	2,570	3,820	4,580	2,880	864	596	231	585	162	100
2	191	961	2,180	5,040	5,500	3,210	799	563	228	485	154	98
3	185	863	2,310	4,120	3,460	3,010	766	546	225	416	149	98
4	177	706	2,300	6,580	2,460	2,430	736	536	209	364	144	100
5	171	640	2,800	7,350	4,150	2,030	694	495	216	326	146	122
6	165	640	6,690	4,710	8,950	1,910	652	465	258	306	144	118
7	157	610	5,730	5,380	4,840	1,720	629	470	241	280	141	104
8	152	555	3,620	4,630	5,250	1,520	718	440	231	470	136	100
9	146	1,130	2,570	3,310	2,550	1,340	818	421	222	546	132	92
10	143	3,000	2,030	2,550	2,090	1,240	2,280	394	212	450	127	92
11	141	3,210	1,780	2,010	1,710	1,320	4,510	372	206	403	127	90
12	138	3,560	1,510	1,680	1,460	3,610	2,870	355	200	364	124	88
13	133	3,480	1,300	1,440	1,320	3,330	2,040	342	194	338	124	88
14	130	4,640	1,130	1,260	1,260	2,780	1,590	330	228	318	124	94
15	130	4,850	1,010	1,120	1,220	3,320	1,340	314	234	310	122	115
16	133	4,880	940	1,030	1,170	2,750	1,160	302	231	284	120	129
17	136	4,740	898	967	1,250	2,550	1,030	295	231	269	115	120
18	128	6,790	835	1,000	1,320	2,260	974	276	212	258	109	107
19	141	5,630	758	1,010	1,170	1,920	904	269	203	238	107	98
20	143	3,630	737	981	1,100	1,640	946	262	192	222	104	94
21	146	2,560	1,030	1,760	1,200	1,460	904	262	186	212	102	98
22	239	1,930	1,290	3,820	1,480	1,480	806	262	186	203	102	94
23	210	1,540	2,030	3,100	2,840	1,500	736	255	192	197	102	90
24	177	1,400	3,080	7,210	2,880	1,570	700	241	255	192	100	86
25	168	2,270	2,400	4,730	2,840	1,560	688	238	330	183	100	86
26	278	8,920	2,260	3,070	2,210	1,500	712	276	287	178	100	84
27	451	8,090	4,210	2,290	4,460	1,460	624	280	269	175	100	82
28	407	4,450	14,700	1,890	5,950	1,280	585	284	306	169	100	80
29	391	3,470	11,000	1,620	-	1,160	706	280	780	169	98	78
30	442	2,970	6,270	1,380	-	1,020	658	262	724	167	100	86
31	442	-	4,280	2,340	-	925	-	241	-	164	102	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	6,388	451	128	206	1.30	1.49	12,670
November	92,575	8,920	460	3,086	19.4	21.65	183,600
December	96,248	14,700	737	3,105	19.5	22.51	190,900
Calendar year 1945	510,746	14,700	72	1,399	8.80	119.46	1,013,000
January	93,198	7,350	967	3,006	18.9	21.80	184,900
February	76,610	8,950	1,100	2,736	17.2	17.92	152,000
March	61,685	3,610	925	1,990	12.5	14.43	122,400
April	33,459	4,510	585	1,115	7.01	7.82	66,330
May	10,924	596	238	352	2.21	2.56	21,670
June	7,919	780	186	264	1.66	1.85	15,710
July	9,241	585	164	298	1.87	2.16	18,330
August	3,717	162	98	120	.755	.87	7,370
September	2,909	129	78	97.0	.610	.68	5,770
Water year 1945-46	494,853	14,700	78	1,356	8.53	115.74	981,600

Peak discharge.- Nov. 26 (4 p.m.) 15,800 sec.-ft.; Dec. 28 (11 a.m.) 17,100 sec.-ft.; Feb. 6 (3 a.m.) 11,500 sec.-ft.

Trask River near Tillamook, Oreg.

Location.- Water-stage recorder, lat. 45°27', long. 123°44', in NW¼ sec. 31, T. 1 S., R. 8 W., half a mile upstream from Gold Creek and 6 miles east of Tillamook.

Drainage area.- 143 square miles.

Records available.- July 1931 to September 1946.

Average discharge.- 15 years, 948 second-feet.

Extremes.- Maximum discharge during year, 11,800 second-feet Dec. 29 (gage height, 9.24 feet); minimum, 72 second-feet Sept. 29 (gage height, 0.45 foot).
1931-46: Maximum discharge, 20,000 second-feet Dec. 22, 1933 (gage height, 13.00 feet); minimum, 58 second-feet Sept. 26, 27, 1939.
Maximum stage known, about 17 feet, probably occurred during flood of November 1921 or Mar. 31, 1931 (discharge, 30,000 second-feet, from rating curve extended above 12,000 second-feet).

Remarks.- Records good except those for Aug. 19 to Sept. 1, which are fair. No diversion or regulation above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-28)

0.4	62	1.7	520	4.0	2,640
.6	105	2.0	690	4.8	3,800
.8	158	2.4	960	6.0	5,710
1.1	255	2.8	1,290	7.5	8,390
1.4	375	3.3	1,800	9.0	11,300

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	147	255	2,100	3,160	4,190	2,480	782	505	238	330	144	84
2	144	776	1,770	4,020	4,870	2,460	732	475	230	298	141	82
3	141	597	1,950	3,590	3,230	2,430	702	465	227	280	133	84
4	136	480	1,920	5,950	2,300	2,070	666	445	224	262	133	91
5	133	455	2,210	6,400	3,600	1,770	624	425	224	244	130	105
6	128	465	4,550	4,190	8,680	1,690	592	416	252	227	130	94
7	122	460	4,730	4,280	4,630	1,510	570	445	227	220	128	84
8	120	425	3,230	3,900	3,060	1,340	654	416	220	381	122	84
9	120	976	2,380	2,960	2,410	1,210	732	384	214	500	118	80
10	118	2,190	1,910	2,320	1,940	1,120	1,490	357	207	375	115	76
11	115	2,300	1,670	1,830	1,600	1,110	2,470	344	198	334	112	76
12	115	2,560	1,390	1,530	1,360	3,360	1,820	330	191	306	112	76
13	115	2,330	1,230	1,290	1,230	3,240	1,400	326	188	283	115	76
14	112	2,380	1,060	1,150	1,140	2,630	1,170	318	227	276	115	e4
15	112	2,770	952	1,020	1,060	3,100	1,020	306	238	266	112	103
16	115	3,230	892	915	1,000	2,650	892	298	224	248	108	115
17	115	3,360	878	843	1,060	2,410	815	290	220	227	105	96
18	110	4,990	808	843	1,050	2,090	763	283	204	217	98	84
19	120	4,300	750	796	968	1,810	714	272	191	201	96	78
20	120	2,860	738	763	922	1,550	750	266	182	188	e9	80
21	120	2,060	885	928	930	1,340	696	266	173	179	91	84
22	210	4,550	992	2,590	1,050	1,320	624	266	182	173	89	82
23	167	1,260	1,490	2,180	1,490	1,320	586	258	185	167	89	78
24	136	1,120	2,340	4,920	1,690	1,420	558	252	252	164	87	76
25	130	1,450	2,000	3,890	1,660	1,380	542	248	294	161	87	74
26	144	4,950	1,810	2,590	1,590	1,300	558	286	255	158	87	74
27	220	6,420	2,570	1,950	2,890	1,240	515	294	241	155	84	74
28	201	3,820	9,680	1,660	3,070	1,120	490	314	272	152	82	74
29	207	3,020	9,740	1,420	-	1,030	580	290	364	152	82	72
30	230	2,500	5,760	1,200	-	915	542	266	375	150	87	82
31	224	-	3,780	2,200	-	836	-	252	-	147	87	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	4,447	230	110	143	1.00	1.16	8,820
November	66,309	6,420	255	2,210	15.5	17.25	131,500
December	78,165	9,740	738	2,522	17.6	20.33	155,100
Calendar year 1945	409,634	9,740	74	1,122	7.85	106.53	812,400
January	77,278	6,400	763	2,493	17.4	20.10	153,300
February	64,870	8,680	922	2,317	16.2	16.87	128,700
March	55,271	3,360	836	1,783	12.5	14.37	109,600
April	25,049	2,470	490	835	5.84	6.51	49,680
May	10,358	505	248	334	2.34	2.69	20,540
June	6,939	384	173	231	1.62	1.80	13,760
July	7,421	500	147	239	1.67	1.93	14,720
August	3,308	144	82	107	.748	.86	6,560
September	2,502	115	72	83.4	.583	.65	4,960
Water year 1945-46	401,937	9,740	72	1,101	7.70	104.52	797,200

Peak discharge.- Nov. 26 (9 p.m.) 8,850 sec.-ft.; Dec. 29 (1 a.m.) 11,800 sec.-ft.; Jan. 4 (9:30 p.m.) 7,710 sec.-ft.; Feb. 6 (3:30 a.m.) 11,200 sec.-ft.

Siletz River at Siletz, Oreg.

Location.- Water-stage recorder, lat. 44°43', long. 123°53', in NW¼SW¼ sec. 11, T. 10 S., R. 10 W., 1½ miles east of Siletz. Datum of gage is 102.32 feet above mean sea level, datum of 1929.

Drainage area.- 202 square miles.

Records available.- November 1905 to May 1912, January 1924 to September 1946.

Average discharge.- 26 years (1906-11, 1925-46), 1,575 second-feet.

Extremes.- Maximum discharge during year, 21,600 second-feet Dec. 28 (gage height, 20.10 feet), from rating curve extended above 9,000 second-feet; minimum, 115 second-feet Sept. 28, 29, 30.

1905-12, 1924-46: Maximum discharge, 34,600 second-feet Nov. 22, 1909, from rating curve extended above 19,000 second-feet; minimum observed, 51 second-feet Dec. 6, 7, 1929.

Maximum discharge known, 40,800 second-feet Nov. 20, 1921 (gage height, 31.6 feet, site and datum then in use), from rating curve extended above 19,000 second-feet.

Remarks.- Records good. No diversion above station. Some diurnal fluctuation caused by log pond at Valsetz.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28

2.6	138	4.6	920	9.5	4,910
2.8	188	5.2	1,270	11.0	6,540
3.1	277	6.0	1,780	13.2	9,500
3.5	418	7.0	2,540	15.5	13,150
4.0	630	8.0	3,410	17.8	17,140

Dec. 29 to Sept. 30

2.5	129	4.0	640	7.0	2,650
2.8	194	4.6	960	8.0	3,550
3.1	275	5.2	1,320	9.5	5,020
3.5	415	6.0	1,870	11.0	6,660

Note.- Same as preceding table above 13.2 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	194	280	3,450	4,350	5,220	3,600	1,000	625	238	812	209	139
2	188	1,010	2,790	5,920	6,620	3,700	932	581	238	675	204	137
3	178	765	3,120	5,950	4,850	3,720	894	563	249	581	199	147
4	172	572	3,100	7,360	3,530	3,150	834	540	246	514	194	143
5	167	511	3,230	8,200	4,700	2,680	790	514	235	460	192	153
6	165	562	7,500	5,630	11,900	2,540	740	486	347	415	187	160
7	160	634	7,240	6,140	6,770	2,270	720	478	330	387	187	141
8	160	603	4,900	5,840	4,580	2,020	894	478	290	657	182	133
9	150	1,630	3,560	4,380	3,600	1,790	1,020	443	287	888	180	129
10	150	3,360	2,800	3,400	3,020	1,650	2,140	419	269	685	176	125
11	148	3,680	2,320	2,680	2,510	1,670	3,570	395	258	605	173	122
12	145	5,190	1,930	2,190	2,150	5,650	2,580	375	246	545	173	120
13	143	3,870	1,660	1,860	1,920	5,750	2,000	364	243	496	171	120
14	140	3,660	1,440	1,620	1,740	4,280	1,670	347	361	460	171	127
15	138	3,880	1,290	1,410	1,600	6,450	1,440	344	464	447	167	180
16	138	4,410	1,200	1,280	1,460	5,050	1,270	333	372	411	162	299
17	140	4,420	1,140	1,170	1,460	3,950	1,150	319	347	375	158	187
18	134	6,530	1,040	1,180	1,380	3,060	1,070	308	319	350	153	156
19	138	6,640	964	1,110	1,300	2,470	1,000	299	293	333	153	143
20	145	4,440	931	1,100	1,290	2,070	1,040	290	275	302	149	137
21	143	3,110	1,220	1,400	1,330	1,790	966	275	260	293	147	139
22	188	2,350	1,460	5,740	1,390	1,750	856	296	255	275	147	133
23	178	1,860	3,180	4,320	1,710	1,810	790	299	263	269	145	129
24	148	1,680	5,120	8,410	2,030	1,930	740	269	330	260	141	125
25	140	2,260	4,090	6,340	2,320	1,810	710	260	435	249	139	124
26	145	8,890	4,270	4,250	2,030	1,680	705	284	361	243	137	122
27	183	14,800	5,160	3,150	4,390	1,570	640	287	340	241	137	118
28	196	7,670	17,200	2,600	4,490	1,410	595	305	439	235	137	116
29	210	5,510	13,400	2,270	-	1,320	790	296	1,060	241	139	115
30	284	4,330	7,740	1,950	-	1,190	680	286	984	232	141	129
31	327	-	5,420	2,560	-	1,090	-	249	-	219	141	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	5,235	327	134	169	0.837	0.96	10,380
November	109,107	14,800	280	3,637	18.0	20.09	216,400
December	123,865	17,200	931	3,996	19.8	22.80	245,700
Calendar year 1945	651,982	17,200	80	1,786	8.84	120.04	1,293,000
January	115,760	8,410	1,100	3,734	18.5	21.31	229,600
February	91,290	11,900	1,290	3,260	16.1	16.81	181,100
March	84,870	6,450	1,090	2,738	13.6	15.63	168,300
April	34,226	3,570	595	1,141	5.65	6.30	67,890
May	11,587	625	249	374	1.85	2.13	22,980
June	10,634	1,060	235	354	1.75	1.96	21,090
July	13,155	888	219	424	2.10	2.42	26,090
August	5,091	209	137	164	.812	.94	10,100
September	4,248	299	115	142	.703	.78	8,430
Water year 1945-46	609,068	17,200	115	1,669	8.26	112.13	1,208,000

Peak discharge.- Nov. 27 (5:30 a.m.) 18,400 sec.-ft.; Dec. 28 (6 p.m.) 21,600 sec.-ft.; Feb. 6 (5:30 a.m.) 15,000 sec.-ft.

Alsea River near Tidewater, Oreg.

Location.- Water-stage recorder, lat. 44°23', long. 123°50', in NW¼NW¼ sec. 6, T. 14 S., R. 9 W., three-quarters of a mile downstream from Grass Creek, 2.3 miles upstream from Scott Creek, and 3.8 miles southeast of Tidewater. Datum of gage is 48.16 feet above mean sea level, datum of 1929.

Drainage area.- 334 square miles.

Records available. October 1939 to September 1946.

Extremes.- Maximum discharge during year, 19,100 second-feet Dec 28 (gage height, 17.88 feet), from rating curve extended above 12,000 second-feet; minimum, 84 second-feet Oct. 19 (gage height, 1.56 feet).

1939-46: Maximum discharge, 22,900 second-feet Jan. 1, 1943 (gage height, 19.98 feet), from rating curve extended above 12,000 second-feet; minimum, 62 second-feet Sept. 1, 1940 (gage height, 1.43 feet).

Remarks.- Records good. No regulation; a few small diversions above station for irrigation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.5	73	2.6	402	5.0	1,730	11.0	7,840
1.7	113	3.0	580	6.0	2,410	13.0	10,800
1.9	164	3.5	830	7.0	3,240	15.0	14,100
2.1	222	4.0	1,110	8.0	4,200	17.0	17,800
2.3	288	4.5	1,410	9.0	5,270		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	167	3,960	4,160	3,220	2,860	1,190	600	274	347	135	105
2	100	232	2,990	5,770	4,260	2,660	1,120	575	268	295	127	100
3	98	210	2,880	5,510	4,170	2,890	1,070	543	271	268	125	102
4	98	170	3,040	7,270	3,330	2,640	1,020	529	271	248	123	105
5	96	156	3,670	8,750	4,190	2,340	962	511	264	228	120	107
6	94	198	5,310	6,430	15,200	2,170	912	497	313	216	120	118
7	92	306	7,540	6,400	9,790	1,980	874	488	320	210	118	111
8	90	295	5,170	6,690	6,250	1,820	1,020	468	274	238	115	102
9	88	662	3,810	4,950	4,680	1,660	1,310	475	261	358	111	98
10	88	1,100	3,020	3,880	3,860	1,570	1,830	462	257	288	107	94
11	88	1,240	2,520	3,100	3,310	1,480	1,780	444	244	244	109	92
12	88	2,260	2,150	2,590	2,820	4,440	1,530	427	235	225	118	92
13	88	1,520	1,860	2,260	2,450	6,000	1,340	419	232	213	115	92
14	88	978	1,650	2,020	2,200	4,030	1,200	406	386	210	118	96
15	88	1,380	1,460	1,810	2,000	5,000	1,090	402	506	213	120	288
16	86	2,630	1,360	1,640	1,840	4,740	1,010	394	378	210	118	488
17	88	2,820	1,260	1,480	1,730	3,790	956	378	324	195	111	295
18	88	3,940	1,160	1,390	1,600	3,110	907	366	288	186	107	181
19	88	5,930	1,060	1,300	1,480	2,630	868	354	261	178	105	142
20	92	2,860	1,020	1,240	1,400	2,280	880	335	241	167	100	123
21	96	1,930	1,090	1,320	1,360	2,020	815	335	232	164	100	118
22	111	1,460	1,220	4,640	1,300	1,950	760	354	225	159	98	107
23	118	1,180	2,650	3,560	1,230	1,960	725	370	225	153	98	102
24	109	1,020	4,850	6,710	1,440	2,230	700	328	238	142	96	100
25	100	1,710	3,680	6,790	1,720	2,100	680	317	268	140	96	98
26	94	5,850	3,400	4,580	1,570	1,900	685	343	248	137	96	94
27	102	16,500	3,900	3,460	2,680	1,750	645	354	225	145	92	92
28	115	11,600	13,000	2,930	3,460	1,610	620	347	248	142	94	90
29	127	7,400	14,400	2,690	-	1,520	695	335	436	145	98	88
30	167	5,480	7,840	2,470	-	1,390	645	306	415	148	102	98
31	186	-	5,310	2,470	-	1,280	-	288	-	145	105	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	3,153	186	86	102	0.305	0.35	6,250
November	83,184	16,500	156	2,773	8.30	9.26	165,000
December	118,250	14,400	1,020	3,815	11.4	13.17	234,500
Calendar year 1945	628,008	16,500	86	1,721	5.15	69.93	1,246,000
January	120,260	8,750	1,240	3,879	11.6	13.39	238,500
February	94,540	15,200	1,230	3,376	10.1	10.53	187,500
March	79,800	6,000	1,280	2,574	7.71	8.89	158,300
April	29,839	1,830	620	995	2.98	3.32	59,180
May	12,770	600	288	412	1.23	1.42	25,330
June	8,628	506	225	288	.862	.96	17,110
July	6,357	358	137	205	.614	.71	12,610
August	3,397	135	92	110	.329	.38	6,740
September	3,918	488	88	131	.392	.44	7,770
Water year 1945-46	564,096	16,500	86	1,545	4.63	62.82	1,119,000

Peak discharge.- Nov. 27 (11:30 a.m.) 18,700 sec.-ft.; Dec. 7 (3:30 a.m.) 8,600 sec.-ft.; Dec. 28 (10:30 p.m.) 19,100 sec.-ft.; Jan. 5 (9 a.m.) 9,150 sec.-ft.; Feb. 6 (12 m.) 18,100 sec.-ft.

Lake Creek at Triangle Lake, Oreg.

Location.- Water-stage recorder, lat. 44°10', long. 123°34', in SW¼ sec. 20, T. 16 S., R. 7 W., 500 feet downstream from outlet of Triangle Lake. Datum of gage is 672.41 feet above mean sea level, datum of 1929.

Drainage area.- 50 square miles.

Records available.- August 1931 to September 1946.

Average discharge.- 15 years, 197 second-feet.

Extremes.- Maximum discharge during year, 2,970 second-feet Dec. 29 (gage height, 6.98 feet); minimum, 8.5 second-feet Sept. 11-14.

1931-46: Maximum discharge, 3,960 second-feet Dec. 22, 1933, Jan. 13, 1936 (gage height, 8.1 feet), from rating curve extended above 2,400 second-feet; minimum, 2.7 second-feet (regulated) Aug. 1, 1944; minimum daily, 5.5 second-feet Sept. 30 to Oct. 3, 1939.

Remarks.- Records good except those for periods of no gage-height record and those below 100 second-feet, which are fair. No diversion above station. Flow regulated by natural storage in Triangle Lake.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 29

0.7	15	1.9	163	4.2	1,050
.9	26	2.2	234	5.1	1,590
1.1	42	2.6	346	6.2	2,350
1.3	64	3.0	485	6.7	2,750
1.6	107	3.5	700		

Dec. 30 to Sept. 30

0.5	8.9	0.9	28
.6	12	1.1	45
.7	16	1.3	66
.8	22		

Note.- Same as preceding table above 1.6 feet.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	21	860	955	392	a400	202	a100	43	35	15	9.2
2	16	22	642	795	466	a380	190	a90	42	34	15	9.2
3	15	22	533	770	533	a420	178	82	41	32	14	9.2
4	15	22	497	995	521	a400	167	79	40	30	14	9.5
5	15	22	533	1,490	493	a350	161	77	40	29	14	9.5
6	14	24	655	1,360	880	a330	155	76	41	28	14	9.5
7	14	26	960	1,130	1,580	a300	147	73	43	27	13	9.5
8	14	28	1,070	1,040	1,270	a270	151	71	43	27	13	9.5
9	14	36	875	920	955	a250	174	70	41	29	a13	9.2
10	14	54	664	745	750	a240	237	68	40	30	a13	8.9
11	14	88	525	596	614	a220	268	66	38	29	a13	8.7
12	13	149	434	493	517	209	252	64	37	28	a13	8.5
13	13	190	365	423	448	682	224	62	36	27	13	8.5
14	13	174	313	365	388	785	199	59	38	26	13	8.7
15	13	161	276	325	346	720	178	58	40	25	12	11
16	13	202	252	290	316	740	163	57	41	25	12	15
17	13	296	234	268	293	715	153	53	40	24	12	20
18	12	423	214	244	279	601	143	53	39	23	13	22
19	12	660	197	229	257	505	135	51	36	22	12	20
20	12	715	187	216	239	437	135	49	34	22	12	19
21	12	497	190	219	232	378	132	48	33	20	11	17
22	20	337	202	412	224	346	124	47	30	20	11	16
23	22	247	250	632	214	328	117	47	30	19	10	15
24	20	199	448	750	207	322	114	47	30	18	10	14
25	18	202	565	925	a220	310	109	47	30	17	9.8	14
26	17	336	565	900	a240	293	107	49	30	15	9.5	12
27	16	1,070	610	696	a340	276	102	50	30	14	9.2	12
28	16	2,100	1,350	553	a430	263	101	50	30	14	8.9	11
29	17	1,640	2,820	485	-	250	a105	49	32	14	8.9	11
30	18	1,160	2,040	430	-	232	a105	47	34	16	8.9	11
31	20	-	1,310	392	-	216	-	45	-	15	8.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	471	22	12	15.2	0.304	0.35	934
November	11,123	2,100	21	371	7.42	8.27	22,060
December	20,636	2,820	187	666	13.3	15.35	40,930
Calendar year 1945	89,417	2,820	12	245	4.90	66.49	177,300
January	20,043	1,490	216	647	12.9	14.91	39,750
February	13,644	1,580	207	487	9.74	10.15	27,060
March	12,168	785	209	393	7.86	9.05	24,130
April	4,728	268	101	138	3.16	3.52	9,380
May	1,886	100	45	60.8	1.22	1.40	3,740
June	1,102	43	30	36.7	.734	.82	2,190
July	734	35	14	23.7	.474	.55	1,460
August	369.1	15	8.9	11.9	.238	.27	732
September	367.6	22	8.5	12.3	.246	.27	729
Water year 1945-46	87,271.7	2,820	8.5	239	4.78	64.91	173,100

a No gage-height record; discharge computed on basis of records for Long Tom River near Noti.

South Umpqua River at Tiller, Oreg.

Location.- Water-stage recorder, lat. 42°56', long. 122°57', in NE¼ sec. 33, T. 30 S., R. 2 W., 0.3 mile upstream from Elk Creek, 0.4 mile downstream from Salt Creek, and 0.4 mile east of Tiller. Datum of gage is 991.8 feet above mean sea level, datum of 1929 (from river-profile survey).

Drainage area.- 454 square miles.

Records available.- November 1910 to November 1911, October 1939 to September 1946.

Extremes.- Maximum discharge during year, 28,200 second-feet Dec. 28 (gage height, 18.4 feet), from rating curve extended above 10,000 second-feet; minimum, 36 second-feet Sept. 29 (gage height, 0.83 foot).
1910-11, 1939-46: Maximum discharge, 29,900 second-feet Dec. 31, 1942 (gage height, 18.96 feet), from rating curve extended above 10,000 second-feet; minimum observed, 20 second-feet Sept. 3, 4, 1911.

Remarks.- Records excellent. Small diversions above station for irrigation; no regulation.

Cooperation.- Water-stage recorder inspected by employee of U. S. Forest Service.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 1-29)

0.9	44	2.4	505	7.0	4,200
1.1	77	2.9	740	8.5	6,150
1.3	120	3.5	1,080	10.0	8,550
1.5	173	4.2	1,540	11.5	11,400
1.7	235	5.0	2,220	13.5	15,600
2.0	340	6.0	3,150	15.5	20,400

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	122	1,570	2,870	1,090	2,920	1,210	862	622	203	73	44
2	47	104	1,190	2,860	1,090	2,440	1,090	906	622	197	68	42
3	46	111	997	2,870	1,020	2,470	973	1,070	608	188	64	42
4	44	95	2,310	4,090	933	2,220	894	1,180	564	179	63	54
5	44	89	2,200	9,710	878	1,970	862	1,080	532	173	61	63
6	46	138	3,950	4,860	1,680	2,630	834	1,020	564	165	59	52
7	46	145	5,380	4,420	1,780	2,420	801	985	487	156	59	47
8	44	138	2,980	3,790	1,440	1,990	818	922	444	151	59	44
9	44	353	2,070	2,730	1,270	1,840	801	894	424	162	58	43
10	44	828	1,990	2,290	1,190	1,870	790	906	400	151	56	41
11	43	586	1,750	1,950	1,060	1,700	796	900	368	140	54	40
12	43	1,210	1,400	1,620	950	2,810	856	878	356	132	53	38
13	43	1,200	1,130	1,410	867	4,380	1,110	856	356	128	53	37
14	43	680	944	1,290	862	3,030	1,170	790	392	122	52	37
15	43	1,190	850	1,250	973	2,490	1,250	745	388	120	50	42
16	47	1,270	872	1,140	1,190	2,180	1,340	755	360	115	48	77
17	68	1,330	834	1,050	1,230	2,170	1,510	845	340	111	48	99
18	68	1,880	775	1,000	1,340	2,220	1,740	850	319	104	47	70
19	58	5,790	700	961	1,580	1,900	1,540	884	312	99	46	56
20	59	2,420	685	916	1,800	1,640	1,280	850	319	95	44	50
21	63	1,320	796	872	1,840	1,470	1,090	812	322	91	44	47
22	72	973	944	3,730	1,800	1,440	955	735	312	87	42	44
23	77	1,000	1,000	3,550	1,820	1,340	938	690	298	83	42	44
24	63	933	1,390	3,470	2,070	1,280	1,150	618	288	79	42	43
25	58	1,190	1,280	3,600	2,720	1,180	1,480	636	274	77	41	41
26	53	1,470	1,850	2,610	2,090	1,190	1,530	745	249	75	40	38
27	53	3,150	4,860	2,080	4,920	1,440	1,250	872	232	81	38	37
28	81	5,510	20,800	1,750	4,020	1,450	1,080	850	222	79	38	37
29	77	3,890	12,600	1,540	-	1,620	1,040	775	225	73	38	37
30	222	2,300	6,000	1,300	-	1,600	955	685	209	70	42	37
31	203	-	3,890	1,160	-	1,390	-	640	-	73	44	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,988	222	43	64.1	0.141	0.16	3,940
November	41,415	5,790	89	1,380	3.04	3.39	82,150
December	89,987	20,800	685	2,903	6.39	7.37	178,500
Calendar year 1945	435,908	20,800	37	1,194	2.63	35.70	864,600
January	78,719	9,710	872	2,539	5.59	6.45	156,100
February	45,303	4,920	862	1,618	3.56	3.71	89,860
March	62,670	4,380	1,180	2,022	4.45	5.13	124,300
April	33,133	1,740	790	1,104	2.43	2.71	65,720
May	26,236	1,180	618	846	1.86	2.15	52,040
June	11,408	622	209	380	.837	.93	22,630
July	3,759	203	70	121	.267	.31	7,460
August	1,566	73	38	50.5	.111	.15	3,110
September	1,423	99	37	47.4	.104	.12	2,820
Water year 1945-46	397,607	20,800	37	1,089	2.40	32.56	788,600

Peak discharge.- Nov. 19 (1 a.m.) 9,970 sec.-ft.; Dec. 6 (10:30 p.m.) 9,410 sec.-ft.; Dec. 28 (8 p.m.) 28,200 sec.-ft.; Jan. 5 (8:30 a.m.) 12,200 sec.-ft.; Jan. 22 (4 p.m.) 6,580 sec.-ft.; Feb. 27 (12 m.) 8,780 sec.-ft.

South Umpqua River near Brockway, Oreg.

Location.- Wire-weight gage, lat. 43°08', long. 123°24', in SW¼ sec. 15, T. 28 S., R. 6 W., at Winston Bridge on Pacific Highway, 2½ miles northeast of Brockway and 4 miles downstream from Lookingglass Creek. Datum of gage is 461.84 feet above mean sea level, datum of 1929 (Oregon State Highway bench mark).
Drainage area.- 1,640 square miles.
Records available.- December 1905 to June 1912, October 1923 to September 1926, January 1942 to September 1946.
Average discharge.- 12 years (1906-11, 1923-26, 1942-46), 2,449 second-feet.
Extremes.- Maximum discharge during year, 64,800 second-feet Dec. 29 (gage height, 28.2 feet, from floodmark); minimum daily, 64 second-feet Aug. 26-29.
1905-12, 1923-26, 1942-46: Maximum discharge, 71,000 second-feet Jan. 4, 1907 (gage height, 26.0 feet, from floodmark, former site and datum), from rating curve extended above 15,000 second-feet parallel to later curve defined by discharge measurements to 24,000 second-feet; minimum observed, 36 second-feet Aug. 12, 13, 1926.
Flood of Feb. 21, 1927, reached a stage of about 31.8 feet, present site and datum (discharge, about 78,000 second-feet). Flood of February 1890 reached a stage just 2 feet higher, according to John Lander who lived nearby at the time of both floods (discharge, about 85,000 second-feet)
Remarks.- Records fair except those for period of doubtful or no gage-height record, which are poor. Gage read twice daily. Many small diversions above station for irrgation; no regulation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

3.0	70	5.5	1,160	12.0	13,300
3.3	121	6.0	1,590	14.0	18,700
3.6	180	7.0	2,770	16.0	24,500
3.9	265	8.0	4,260	18.0	30,500
4.2	380	9.0	6,160	20.0	36,800
4.6	570	10.0	8,340	24.0	49,800
5.0	800	11.0	10,800	28.0	64,000

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	420	5,700	9,160	3,910	7,740	2,300	1,530	912	247	d105	76
2	114	308	3,900	7,830	4,030	6,740	a2,250	1,430	912	247	d105	d73
3	112	d330	3,340	a9,000	4,560	6,360	a2,200	1,530	828	235	d105	d73
4	110	d280	g6,640	11,600	a4,000	6,220	a2,150	1,610	814	226	d100	86
5	107	238	g13,300	g22,500	3,620	d5,280	2,110	1,690	788	220	d100	d100
6	108	229	g10,000	18,300	6,240	6,300	2,030	1,590	814	217	100	89
7	107	265	g20,400	16,000	13,200	5,300	1,930	1,560	776	211	d98	d86
8	105	340	g12,500	19,000	9,880	4,400	1,900	1,460	669	198	d97	d80
9	105	352	a8,000	12,300	6,990	d3,960	1,960	1,390	636	185	d96	d78
10	103	g985	6,460	9,180	6,340	3,680	1,930	1,430	614	211	d94	d75
11	103	1,440	5,600	7,430	5,060	3,530	1,870	1,400	570	190	d90	d72
12	96	1,390	4,660	6,080	4,880	d4,450	1,780	1,370	550	195	d90	d70
13	94	2,980	3,760	5,110	4,030	12,500	a1,900	1,290	d540	185	d88	d70
14	94	1,730	3,120	4,500	3,660	9,830	2,120	1,220	d580	180	d85	d70
15	96	g1,410	d2,850	4,060	3,640	7,250	2,130	1,140	d600	180	83	81
16	103	3,220	2,740	3,760	3,930	6,720	2,070	1,110	d560	172	80	93
17	114	g3,770	2,560	a3,400	4,060	5,780	2,050	1,070	525	156	d80	100
18	125	g3,770	2,380	2,960	4,190	5,600	2,200	1,180	461	156	d78	140
19	156	g16,500	a2,200	2,800	4,450	4,900	2,300	1,230	d450	152	d76	180
20	152	8,850	2,020	2,650	4,750	4,280	2,210	1,140	d440	152	d72	172
21	146	4,540	2,000	2,500	d4,800	3,560	2,020	1,130	d460	144	70	125
22	a150	3,030	2,230	g3,930	d4,700	3,320	1,810	1,130	d470	140	87	101
23	158	2,330	2,510	a10,000	4,190	3,140	1,650	1,100	d460	134	86	96
24	168	2,080	g5,560	8,480	4,340	2,930	1,450	1,020	448	129	d86	91
25	166	2,140	a6,000	12,900	5,210	d2,800	2,050	926	420	125	d85	86
26	152	d6,860	5,920	9,090	3,990	d2,600	2,330	1,140	407	117	d84	d86
27	148	d12,800	g13,600	6,860	7,470	d2,600	2,150	1,240	324	117	d84	d88
28	156	g19,900	g41,900	5,740	11,600	2,680	1,860	1,270	293	117	d84	d88
29	168	g17,000	g48,500	5,360	-	2,870	1,670	1,230	286	117	d84	89
30	235	8,800	g20,700	4,900	-	2,870	1,630	1,180	272	117	75	91
31	265	-	g12,800	4,210	-	2,720	-	1,080	-	d94	d76	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	4,132	265	94	133	0.081	0.09	8,200
November	128,287	19,900	229	4,276	2.61	2.91	254,500
December	283,850	48,500	2,000	9,156	5.58	6.44	563,000
Calendar year 1945	1,154,210	48,500	76	3,162	1.93	26.17	2,289,000
January	251,570	22,500	2,500	8,115	4.95	5.70	499,000
February	151,520	13,200	3,620	5,411	3.30	3.44	300,500
March	152,890	12,500	2,600	4,932	3.01	3.47	303,300
April	60,010	2,330	1,450	2,000	1.22	1.36	119,000
May	39,816	1,690	928	1,284	.783	.90	78,970
June	16,879	912	272	563	.343	.38	33,480
July	5,266	247	94	170	.104	.12	10,440
August	2,561	105	64	82.6	.050	.06	5,080
September	2,801	180	70	93.4	.057	.06	5,560
Water year 1945-46	1,099,582	48,500	64	3,013	1.84	24.93	2,181,000

a No gage-height record; discharge computed on basis of records for South Umpqua River at Tiller and Umpqua River near Elkton.
d Doubtful gage-height record; discharge computed as explained under a.
g Computed from graph based on gage readings.

Umpqua River near Elkton, Oreg.

Location.- Staff gage, lat. 43°35', long. 123°33', in sec. 8, T. 23 S., R. 7 W., 4 miles south of Elkton. Datum of gage is 91.33 feet above mean sea level, datum of 1929.
Drainage area.- 3,680 square miles.
Records available.- October 1905 to September 1946 (incomplete prior to November 1908).
Average discharge.- 41 years, 7,037 second-feet.
Extremes.- Maximum discharge observed during year, 167,000 second-feet Dec. 29 (gage height, 40.1 feet), from rating curve extended above 50,000 second-feet; minimum observed, 872 second-feet Oct. 12-15 (gage height, 1.14 feet).
1905-46: Maximum discharge, 172,000 second-feet Feb. 21, 1927, Dec. 31, 1942, from rating curve extended above 50,000 second-feet; maximum gage height, 41.1 feet Dec. 31, 1942; minimum discharge observed, 640 second-feet July 18, 1926 (gage height, 0.71 foot).
Maximum stage known, 45.5 feet sometime in 1861.
Remarks.- Records good except those for June to September, which are fair. Gage read twice daily. Some diversions for irrigation from streams in South Umpqua River Basin, but low flow probably only slightly affected. Slight fluctuation by gates and racks of fish hatchery at Diamond Lake and by power plant at Winchester ordinarily does not affect discharge at this station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.2	920	5.0	6,060	16.0	43,100
1.5	1,190	6.0	8,200	19.0	56,800
2.0	1,710	7.0	10,700	23.0	76,000
2.5	2,290	9.0	16,500	29.0	107,000
3.0	2,920	11.0	23,400	36.0	144,000
4.0	4,330	13.0	30,700		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	974	1,180	13,200	25,200	11,500	23,000	7,970	5,500	4,650	2,300	1,280	1,080
2	956	1,170	11,800	22,000	10,400	19,500	7,410	5,240	4,490	2,130	1,260	1,070
3	947	1,190	9,670	27,700	11,500	18,500	6,870	5,150	4,410	2,040	1,250	1,060
4	929	1,160	9,670	34,600	9,040	17,200	6,260	5,590	4,260	2,000	1,230	1,050
5	929	1,140	17,800	g61,300	8,880	15,600	5,780	5,590	4,180	1,970	1,210	1,060
6	929	1,170	22,300	53,400	9,920	14,300	5,590	5,500	4,030	1,930	1,210	1,060
7	912	1,250	51,600	36,700	27,700	16,200	5,320	5,410	3,880	1,900	1,190	1,050
8	904	1,380	39,200	g44,900	26,200	13,700	5,240	5,320	3,670	1,860	1,190	1,080
9	896	1,520	24,400	32,300	20,200	11,800	5,320	5,150	3,600	1,840	1,180	1,060
10	888	3,400	17,200	21,200	14,600	11,500	5,410	5,060	3,400	1,820	1,170	1,050
11	888	5,590	13,400	17,500	12,900	11,000	5,590	5,060	3,280	1,790	1,160	1,040
12	880	5,240	11,800	14,900	11,000	12,900	5,590	4,980	3,140	1,740	1,150	1,040
13	872	9,800	9,920	12,900	9,420	37,100	5,870	4,980	3,060	1,700	1,150	1,030
14	872	7,410	8,080	10,700	8,560	32,600	6,380	4,900	3,140	1,680	1,140	1,020
15	880	6,870	6,980	9,670	8,080	24,100	6,360	4,810	3,260	1,620	1,140	1,040
16	888	7,740	6,460	9,170	7,970	20,600	6,560	4,810	3,330	1,590	1,130	1,140
17	904	12,300	6,060	8,560	8,320	19,500	6,760	4,810	3,170	1,560	1,120	1,250
18	904	11,200	5,680	7,880	8,680	18,100	7,300	4,810	3,020	1,530	1,110	1,260
19	920	g43,500	5,320	7,080	9,170	18,800	8,080	4,980	2,930	1,500	1,100	1,200
20	929	28,800	4,980	6,460	9,540	14,000	7,520	5,150	2,890	1,480	1,090	1,170
21	985	14,600	4,980	6,260	9,800	11,800	6,860	5,240	2,880	1,440	1,080	1,140
22	1,000	9,540	5,060	7,520	10,200	10,400	6,060	5,150	2,830	1,420	1,080	1,080
23	1,010	7,410	6,060	23,400	10,400	9,670	5,410	4,980	2,860	1,380	1,060	1,060
24	1,020	6,560	9,670	20,900	10,400	9,420	5,240	4,810	2,830	1,360	1,080	1,050
25	1,030	6,260	15,600	31,900	10,700	8,680	5,780	4,730	2,800	1,340	1,080	1,030
26	1,040	12,300	14,600	24,800	11,200	7,970	7,080	4,650	2,820	1,300	1,080	1,020
27	1,060	29,200	22,800	18,800	14,000	7,300	7,520	5,590	2,780	1,270	1,080	1,010
28	1,090	55,200	g80,800	14,600	33,400	7,970	6,460	6,360	2,700	1,250	1,080	1,000
29	1,140	48,400	g152,000	13,400	-	9,920	5,870	6,060	2,580	1,270	1,080	992
30	1,190	24,100	71,000	13,200	-	9,800	5,780	5,410	2,460	1,290	1,100	992
31	1,200	-	36,700	12,600	-	9,300	-	4,980	-	1,280	1,100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	29,946	1,200	872	966	0.262	0.30	59,400
November	366,580	55,200	1,140	12,220	3.32	3.70	727,100
December	714,590	152,000	4,980	23,050	6.26	7.22	1,417,000
Calendar year 1945	3,184,040	152,000	872	8,723	2.37	32.18	6,316,000
January	651,480	61,300	6,260	21,020	5.71	6.58	1,292,000
February	353,480	33,400	7,970	12,620	3.43	3.57	701,100
March	470,230	37,100	7,300	15,170	4.12	4.75	932,700
April	189,020	8,080	5,240	6,301	1.71	1.91	374,900
May	160,760	6,360	4,650	5,186	1.41	1.62	318,900
June	99,310	4,650	2,460	3,310	.899	1.00	197,000
July	50,560	2,300	1,250	1,631	.443	.51	100,300
August	35,320	1,280	1,060	1,139	.310	.36	70,060
September	32,164	1,260	992	1,072	.291	.33	63,800
Water year 1945-46	3,153,440	152,000	872	8,640	2.35	31.85	6,254,000

g Computed from graph based on gage readings.

Cow Creek near Azalea, Oreg.

Location.- Staff gage, lat. 42°50', long. 123°11', in sec. 4, T. 32 S., R. 4 W., 4 miles northeast of Azalea.
Drainage area.- 76 square miles.
Records available.- April 1926 to September 1946.
Average discharge.- 16 years (1929-31, 1932-46), 91.1 second-feet.
Extremes.- Maximum discharge during year, 5,280 second-feet Dec. 28 (gage height, 11.2 feet, from floodmark), from rating curve extended above 1,200 second-feet; minimum observed, 7.1 second-feet Oct. 2-4, 8, 9, 13-15.
1926-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 4 second-feet Sept. 9-19, 1929, Aug. 26-28, 1931, Aug. 21 to Sept. 6, 1934.
Remarks.- Records good except those for October to March, which are fair, and those for period of no gage-height record or those above 3,000 second-feet, which are poor. Staff gage read once daily. Small diversions above station for irrigation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 15, Dec. 29 to Feb. 26)

Oct. 1 to May 26						May 27 to Sept. 30	
1.8	11	2.4	80	4.1	590	1.8	8.7
1.9	17	2.6	120	4.5	750	1.9	14
2.0	25	2.8	168	5.0	990	2.0	21
2.1	35	3.1	249	6.0	1,490	2.1	31
2.2	49	3.4	338	7.0	2,070	2.2	43
2.3	64	3.7	435	8.0	2,740		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	16	143	296	132	338	127	60	31	17	10	8.7
2	7.1	14	116	456	146	296	120	54	30	16	10	8.3
3	7.1	12	103	456	125	338	116	52	29	16	9.8	8.7
4	7.1	12	510	456	114	284	112	49	27	15	9.8	10
5	7.6	15	435	1,320	146	269	110	48	26	15	9.8	9.8
6	7.6	19	670	694	574	278	107	45	26	15	9.8	9.8
7	7.6	16	710	870	494	243	99	43	25	14	9.2	8.7
8	7.1	15	308	654	241	221	103	43	25	14	9.2	8.7
9	7.1	20	232	387	205	210	101	42	24	14	8.7	8.7
10	7.6	45	210	266	178	202	95	42	24	13	8.7	7.9
11	7.6	34	194	241	158	189	93	39	23	13	8.3	7.6
12	7.6	43	143	227	146	238	95	38	21	12	8.3	7.6
13	7.1	41	120	199	134	470	99	35	22	12	7.9	7.6
14	7.1	55	103	176	138	314	103	35	22	12	7.9	8.3
15	7.1	72	107	158	141	332	99	34	21	12	7.9	13
16	11	84	120	146	150	320	99	34	21	12	7.6	15
17	18	99	112	134	156	299	95	33	20	12	7.6	14
18	12	168	107	125	163	266	95	31	20	12	7.6	13
19	10	550	105	118	176	255	91	31	20	11	7.6	11
20	11	143	99	114	166	221	88	30	19	11	7.6	9.8
21	12	91	95	107	194	205	80	35	18	11	7.2	8.7
22	13	64	91	146	166	197	77	41	19	11	7.2	8.7
23	12	72	112	d530	153	178	74	38	20	10	7.2	8.7
24	10	99	278	494	178	168	72	35	21	9.2	7.6	8.7
25	10	158	194	a500	189	163	72	39	20	9.2	7.6	8.3
26	11	216	249	252	241	156	70	91	18	10	7.6	7.9
27	12	510	550	232	670	150	66	51	18	10	7.2	8.3
28	15	786	3,020	189	400	163	62	43	18	10	7.2	8.7
29	17	510	1,610	166	-	156	67	39	17	9.8	7.9	8.7
30	43	178	574	148	-	148	64	36	17	11	8.7	9.2
31	22	-	374	134	-	136	-	32	-	10	9.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	349.0	43	7.1	11.3	0.149	0.17	692
November	4,157	786	12	139	1.83	2.03	8,250
December	11,794	3,020	91	380	5.00	5.77	23,390
Calendar year 1945	41,858.4	3,020	6.1	115	1.51	20.48	83,040
January	10,391	1,320	107	335	4.41	5.08	20,610
February	6,074	670	114	217	2.86	2.97	12,050
March	7,403	470	136	239	3.14	3.62	14,680
April	2,751	127	62	91.7	1.21	1.35	5,460
May	1,298	91	30	41.9	.551	.64	2,570
June	662	31	17	22.1	.291	.32	1,310
July	379.2	17	9.2	12.2	.161	.19	752
August	258.5	10	7.2	8.34	.110	.13	513
September	282.1	15	7.6	9.40	.124	.14	560
Water year 1945-46	45,798.8	3,020	7.1	125	1.64	22.41	90,840

a No gage-height record; discharge computed on basis of records for South Umpqua River at Tiller and Grave Creek at Pease Bridge, near Placer.
d Doubtful gage-height record; discharge computed as explained in footnote a.

North Umpqua River below Lake Creek, Oreg.

Location.- Water-stage recorder, lat. 43°19', long. 122°11', in NW¼ sec. 13, T. 26 S., R 5 E., 200 yards downstream from Lake Creek and 30 miles southwest of Crescent. Altitude of gage, 4,090 feet (from river-profile map).

Drainage area.- 175 square miles.

Records available.- October 1927 to September 1946.

Average discharge.- 18 years (1927-45), 364 second-feet.

Extremes.- Maximum discharge during year, 864 second-feet May 21 (gage height, 1.88 feet) minimum, 281 second-feet Oct. 20, 23-27, Nov. 19 (gage height, 0.82 foot).
1927-46: Maximum discharge, 1,190 second-feet June 9, 1933 (gage height, 2.34 feet), from rating curve extended above 700 second-feet; minimum, 206 second-feet Dec. 9, 1931.

Remarks.- Records good except those for Dec. 8-31, Mar. 15-30, which are fair. No diversion above station. Flow slightly regulated by Diamond Lake.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.8	273	1.4	545
1.0	353	1.6	665
1.2	441	1.9	880

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	320	289	345			-	353	581	730	496	405	379
2	320	300	345			-	349	581	737	496	405	379
3	320	289	349			-	362	593	730	490	405	383
4	320	289	353			-	396	629	730	485	400	383
5	320	289	374			-	379	647	717	475	400	379
6	316	289	387			-	357	665	698	475	400	379
7	316	289	383			-	400	672	647	475	396	374
8	312	292	350			-	400	659	629	475	396	370
9	312	296	340			-	396	672	617	466	396	370
10	312	300	335			-	387	684	605	461	392	370
11	312	296	325			-	383	684	587	461	396	366
12	312	300	310			-	410	698	581	456	396	366
13	312	300	305			-	396	698	575	456	392	366
14	308	300	300			-	410	691	605	451	392	366
15	308	308	310			366	414	698	587	446	392	374
16	304	304	310			366	423	730	575	441	392	374
17	285	304	305			366	436	786	557	436	387	370
18	285	304	300			362	446	816	551	423	387	366
19	285	296	305			382	441	824	563	423	387	366
20	281	308	310			362	470	816	569	418	387	362
21	285	312	315			362	470	832	575	423	387	362
22	285	312	320			362	456	793	569	428	383	362
23	281	316	325			357	466	786	557	418	383	362
24	285	320	330			357	501	737	545	418	383	362
25	285	324	340			357	534	737	528	414	383	362
26	285	366	380			357	575	744	523	414	379	357
27	285	383	560			357	587	758	512	414	379	357
28	285	362	700			357	569	758	512	410	379	357
29	289	357	600			357	587	737	501	410	383	353
30	300	349	480			353	587	730	496	410	383	353
31	292	-	430			353	-	724	-	410	379	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	9,317	320	281	301	1.72	1.98	18,480
November	9,343	383	289	311	1.78	1.99	18,530
December	11,421	700	300	368	2.10	2.43	22,650
Calendar year 1945	136,596	700	281	374	2.14	29.03	270,900
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March 15-31	6,113	366	353	360	2.06	1.30	12,120
April	13,340	587	349	445	2.54	2.83	26,460
May	22,160	832	581	715	4.09	4.71	43,950
June	17,908	737	496	597	3.41	3.81	35,520
July	13,774	496	410	444	2.54	2.93	27,320
August	12,104	405	379	390	2.23	2.57	24,010
September	11,029	383	353	368	2.10	2.34	21,880
Water year	-	-	-	-	-	-	-

Note.- No gage-height record Dec. 8 to Mar. 14; discharge for Dec. 8-31 computed on basis of range in stage and records for station at Tokatee Falls.

North Umpqua River at Toketee Falls, Oreg.

Location.- Water-stage recorder, lat. 43°16', long. 122°25', in T. 26 S., R. 3 E. (unsurveyed), an eighth of a mile downstream from Clearwater River, half a mile upstream from Toketee Falls, and 30 miles east of Hoaglin. Datum of gage is 2,373 feet above mean sea level (surveys of The California Oregon Power Co.).
Drainage area.- 337 square miles.
Records available.- February 1908 to July 1909, December 1914 to November 1917 (incomplete), July 1924 to September 1946.
Average discharge.- 20 years (1925-45), 862 second-feet.
Extremes.- Maximum discharge during year, 4,800 second-feet Dec. 28 (gage height, 5.65 feet, from floodmark); minimum, 570 second-feet Oct. 24-26 (gage height, 0.82 foot).
1908-9, 1914-17, 1924-46: Maximum discharge, 5,080 second-feet Dec. 31, 1942 (gage height, 5.90 feet), from rating curve extended above 1,900 second-feet by logarithmic plotting; minimum, 475 second-feet Nov. 27-29, Dec. 12, 14, 1931.
Remarks.- Records fair. No diversion above station; regulation at Diamond Lake has little effect.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.9	610	2.8	1,990
1.1	720	3.6	2,700
1.6	1,040	4.5	3,560
2.2	1,500	5.5	4,630

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	610	595	799				a950	1,520	1,610	1,070	a830	758
2	610	626	764				942	1,540	1,640	1,070	a830	753
3	610	590	770				928	1,640	1,630	1,050	a820	764
4	610	590	829				963	1,740	1,600	1,040	a820	770
5	610	600	829				963	1,730	1,600	1,030	a810	753
6	605	595	1,140				921	1,720	1,560	1,020	a810	748
7	605	590	1,030				965	1,720	1,450	1,000	a800	742
8	605	590	921				977	1,680	1,410	1,010	a800	736
9	600	654	880				970	1,670	1,390	998	a800	736
10	600	632	842				963	1,690	1,350	977	a790	731
11	600	626	805				949	1,690	1,320	977	a790	731
12	600	660	742				1,000	1,710	1,320	963	a790	731
13	600	626	709				1,050	1,710	1,320	956	a780	731
14	595	654	714				1,100	1,680	1,370	949	a780	726
15	595	687	758				1,170	1,630	1,340	935	a780	731
16	605	665	758				1,270	1,670	1,300	a920	770	a760
17	560	643	726				1,400	1,760	1,260	a910	770	a740
18	575	793	698				1,560	1,850	1,180	a900	770	a720
19	580	742	709				1,550	1,850	1,270	a890	770	a720
20	575	682	736				1,490	1,860	1,310	a880	775	a710
21	585	660	764				1,400	1,840	1,320	a880	770	a710
22	580	665	775				1,340	1,770	1,300	a880	764	a710
23	575	665	817				1,330	1,710	1,240	a870	764	a710
24	570	682	823				1,480	1,640	1,200	a870	764	a710
25	570	704	854				1,710	1,620	1,170	a860	758	a710
26	570	758	1,010				1,800	1,670	1,140	a860	758	a700
27	600	1,130	2,590				1,720	1,720	1,110	a850	758	a700
28	585	1,180	4,300				1,640	1,690	1,100	a850	753	a700
29	590	963	a3,000				1,640	1,660	1,090	a840	770	a700
30	638	842	a1,800				1,570	1,600	1,070	a840	764	a700
31	595	-	a1,300				-	1,600	-	a840	758	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	18,428	638	570	594	1.76	2.03	36,550
November	21,089	1,180	590	703	2.09	2.33	41,850
December	34,192	4,300	698	1,103	3.27	3.77	67,820
Calendar year 1945	334,863	4,300	570	917	2.72	36.96	664,200
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	37,709	1,800	921	1,257	3.73	4.16	74,790
May	52,580	1,860	1,520	1,696	5.03	5.80	104,300
June	39,970	1,640	1,070	1,332	3.95	4.41	79,280
July	28,985	1,070	840	935	2.77	3.20	57,490
August	24,266	830	753	783	2.32	2.68	48,130
September	21,841	770	700	728	2.16	2.41	43,320
Water year	-	-	-	-	-	-	-

Peak discharge.- Nov. 28 (6 a.m.) 1,280 sec.-ft.; Dec. 6 (10 a.m.) 1,330 sec.-ft.; Dec. 28 (about 8 a.m.) 4,800 sec.-ft.
a No gage-height record; discharge computed on basis of range in stage and records for North Umpqua River below Lake Creek and South Umpqua River at Tiller.

Lake Creek at Diamond Lake, near Fort Klamath, Oreg.

Location.- Water-stage recorder, lat. 43°11', long. 122°10', in SW¼ sec. 30, T. 27 S., R. 6 E., 260 feet downstream from outlet of Diamond Lake and 35 miles north of Fort Klamath. Altitude of gage, 5,180 feet (from river-profile map).

Drainage area.- 57 square miles.

Records available.- May 1922 to September 1925 (incomplete), October 1926 to September 1946.

Average discharge.- 19 years (1926-29, 1930-46), 48.0 second-feet.

Extremes.- Maximum discharge during year, 182 second-feet Dec. 28 (gage height, 2.08 feet); minimum, 2 second-feet (regulated) Apr. 11, 13, 17, 18, May 6, 11-15.
1922-25, 1926-46: Maximum discharge observed, 336 second-feet Jan. 1, 1943 (gage height, 2.8 feet), from rating curve extended above 120 second-feet; no flow (result of regulation) Aug. 25-27, 1931.

Remarks.- Records good except those above 100 or below 20 second-feet, which are fair. Flow regulated by gates and fish racks at lake outlet, and at times by collection of moss on racks. No diversion above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.4	3.3	1.2	53
.5	5.5	1.4	76
.6	8.8	1.6	103
.8	18	1.9	151
1.0	33	2.2	205

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	16	63	139	75	66	58	63	104	51	32	31
2	29	17	61	136	76	66	57	51	103	51	32	31
3	35	17	58	129	75	66	80	40	90	51	32	31
4	33	17	62	136	75	66	97	40	96	50	33	31
5	32	17	66	144	75	68	68	43	86	50	33	31
6	31	19	81	131	76	68	67	46	75	50	32	32
7	30	20	104	129	81	66	95	43	62	50	31	31
8	30	22	118	124	81	66	93	37	60	51	31	31
9	29	24	a109	115	79	65	92	44	60	51	31	31
10	29	27	a101	103	76	64	87	40	52	51	31	31
11	29	28	92	95	76	64	74	33	49	51	32	31
12	29	31	88	88	75	66	38	36	49	51	32	31
13	29	34	85	81	72	70	68	36	38	50	32	31
14	28	34	84	77	70	70	84	38	53	50	31	30
15	27	37	84	75	69	71	82	51	52	49	31	29
16	14	38	84	72	68	71	81	76	52	49	31	31
17	5	39	84	71	66	70	75	89	52	39	30	31
18	5	37	82	70	65	69	57	93	52	31	30	31
19	5	55	82	69	64	68	59	95	53	38	31	30
20	4	44	81	68	64	66	70	76	53	33	31	30
21	4	42	81	68	64	65	70	84	53	36	31	29
22	4	41	80	74	64	66	48	82	52	37	29	29
23	4	40	81	74	63	65	48	97	51	37	30	29
24	4	39	81	86	63	65	69	88	52	36	31	29
25	4	42	80	89	63	64	70	97	51	32	31	29
26	5	45	82	84	63	64	68	88	51	33	31	28
27	5	57	95	81	65	63	64	91	51	34	31	28
28	5	74	168	80	66	62	41	99	52	31	30	28
29	8	72	175	81	-	62	61	102	52	31	31	28
30	12	69	161	80	-	61	68	108	51	34	31	28
31	13	-	149	77	-	60	-	103	-	32	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	551	35	4	17.8	0.312	0.36	1,090
November	1,094	74	16	36.5	.640	.71	2,170
December	2,902	175	58	93.6	1.64	1.89	5,760
Calendar year 1945	18,479	175	-	50.6	.888	12.04	36,650
January	2,926	144	68	94.4	1.66	1.91	5,800
February	1,969	81	63	70.3	1.23	1.28	3,910
March	2,043	71	60	65.9	1.16	1.33	4,050
April	2,089	97	38	69.6	1.22	1.36	4,140
May	2,109	108	33	68.0	1.19	1.38	4,180
June	1,807	104	38	60.2	1.06	1.18	3,580
July	1,320	51	31	42.6	.747	.86	2,620
August	966	33	29	31.2	.547	.63	1,920
September	901	32	28	30.0	.526	.59	1,790
Water year 1945-46	20,677	175	4	56.6	.993	13.48	41,010

a No gage-height record; discharge interpolated.

Clearwater River above Trap Creek, Oreg.

Location.- Water-stage recorder, lat. 43°15', long. 122°17', in SE¼ sec. 1, T. 27 S., R. 4 E., 150 yards upstream from Trap Creek and 40 miles east of Glide. Altitude of gage, 3,760 feet (from river-profile map).

Drainage area.- 40 square miles.

Records available.- October 1927 to September 1946.

Average discharge.- 17 years, (1928-45), 144 second-feet.

Extremes.- Maximum discharge during year, 368 second-feet Dec. 28 (gage height, 1.90 feet, from recorded range in stage); minimum 120 second-feet Oct. 1-16, 18, 19, 23-27 (gage height, 0.81 foot).

1927-46: Maximum discharge, 451 second-feet Jan. 1, 1943 (gage height, 2.17 feet), from rating curve extended above 200 second-feet; minimum, 91 second-feet Nov. 4-6, 27, Dec. 12, 29, 1931, Jan. 3, 1932.

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

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.8	118
.9	133
1.0	149
1.2	187
1.4	233
1.6	284

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	124	127			-	143	214	230		154	144
2	120	126	126			-	143	221	230		154	144
3	120	122	126			-	143	233	230		153	146
4	120	121	130			-	143	243	230		153	146
5	120	124	127			-	144	240	225		152	144
6	120	122	133			-	144	240	225		152	143
7	120	122	130			-	144	240	220		151	143
8	120	121	127			-	146	240	220		151	143
9	120	124	126			-	146	240	215		150	143
10	120	124	125			-	144	243	215		150	143
11	120	122	124			-	144	243	210		149	143
12	120	122	124			-	146	246	205		149	143
13	120	122	123			-	147	243	214		148	141
14	120	124	122			-	151	240	223		148	143
15	120	127	124			-	154	238	216		147	146
16	121	124	128			-	160	243	207	170	147	146
17	121	122	126			-	167	253	202		146	144
18	120	126	125			-	179	261	202		144	143
19	121	124	125			-	185	263	211		146	143
20	121	122	130			-	185	263	220		144	143
21	121	122	130			-	185	256	225		144	141
22	121	122	135			-	185	248	220		144	141
23	120	122	135			-	187	240	210		144	141
24	120	122	140			-	198	233	205		144	141
25	120	124	140			-	221	230	200		144	141
26	120	127	150			-	233	235	200		144	141
27	122	146	220			-	231	235	195		144	141
28	122	151	310			146	226	240	195		144	141
29	122	138	240			144	226	235	190		147	141
30	130	130	200			144	219	230	190		146	141
31	124		170			144		230			144	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	3,746	130	120	121	3.02	3.48	7,430
November	3,769	151	121	126	3.15	3.50	7,480
December	4,498	310	122	145	3.62	4.18	8,920
Calendar year 1945	52,307	310	120	143	3.58	48.62	103,800
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	5,169	233	143	172	4.30	4.81	10,250
May	7,459	263	214	241	6.02	6.94	14,790
June	6,380	230	190	213	5.32	5.93	12,650
July	5,270	-	-	170	4.25	4.90	10,450
August	4,577	154	144	148	3.70	4.26	9,080
September	4,284	146	141	143	3.58	3.98	8,500
Water year	-	-	-	-	-	-	-

Note.- No gage-height record Dec. 9-31, May 25 to June 12, June 20 to Aug. 16; discharge computed on basis of records for South Umpqua River at Tiller and North Umpqua River below Lake Creek and at Toketee Falls.

South Fork Coquille River at Powers, Oreg.

Location.- Water-stage recorder, lat. 42°54', long. 124°04', in SE¼ sec. 12, T. 31 S., R. 12 W., half a mile northeast of bridge at Powers and three-quarters of a mile upstream from Woodward Creek. Altitude of gage, 200 feet (from river-profile map).

Drainage area.- 169 square miles.

Records available.- October 1928 to September 1946. September 1916 to September 1926 at site 1½ miles upstream.

Average discharge.- 27 years (1916-26, 1929-46), 716 second-feet.

Extremes.- Maximum discharge during year, 27,700 second-feet Dec. 28 (gage height, 20.57 feet), from rating curve extended above 11,000 second-feet; minimum, 15 second-feet Sept. 11-14 (gage height, 1.00 foot).
1916-26, 1928-46: Maximum discharge, that of Dec. 28, 1945; minimum, 12 second-feet Sept. 22-25, 27-30, 1939.

Remarks.- Records good except those above 5,000 second-feet and those for period of no gage-height record, which are fair. No regulation above station. Small diversions for irrigation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	110	2,000	1,750	755	2,190	572	278	130	72	33	21
2	24	80	1,400	3,400	1,210	1,840	528	263	123	66	32	20
3	24	66	1,450	2,890	1,040	2,280	490	242	123	62	31	20
4	23	59	2,880	4,080	818	2,060	450	226	117	59	31	20
5	22	59	4,050	7,110	954	1,660	420	214	114	57	30	20
6	21	86	6,110	3,770	5,670	1,570	396	202	128	55	29	20
7	21	114	5,720	4,290	3,500	1,420	373	193	114	55	29	18
8	20	106	3,040	3,440	2,180	1,180	a450	187	102	53	29	18
9	20	359	2,000	2,240	1,570	1,020	a700	172	95	56	28	18
10	20	908	1,550	1,680	1,350	1,010	a800	165	90	55	27	16
11	20	934	1,260	1,330	1,150	987	a740	158	86	52	27	16
12	20	1,290	1,020	1,100	987	2,760	a660	152	81	50	27	15
13	20	908	856	934	856	3,980	a600	148	80	48	26	15
14	20	550	731	798	767	2,450	a550	142	91	48	26	16
15	20	1,230	665	695	719	2,340	a500	140	100	47	24	20
16	21	2,190	604	610	683	1,960	a475	130	95	46	23	43
17	24	1,980	550	550	725	1,650	a450	128	86	44	22	43
18	22	5,200	495	516	908	1,390	a420	125	80	42	22	33
19	21	5,710	450	516	974	1,160	a400	123	75	41	21	27
20	22	2,440	415	588	967	980	a425	123	72	39	21	23
21	24	1,440	626	577	1,250	850	h465	148	69	38	20	23
22	29	987	941	2,990	1,290	856	a400	142	67	37	20	21
23	28	785	3,100	1,940	1,130	830	364	135	70	36	19	20
24	26	737	3,500	3,200	1,650	994	342	130	75	35	19	19
25	24	2,130	3,360	2,950	2,050	934	328	132	75	33	22	18
26	22	6,220	3,520	1,900	1,500	870	346	172	72	33	23	18
27	27	13,000	5,280	1,370	3,850	856	302	172	69	33	20	18
28	52	9,310	21,500	1,130	3,180	804	282	160	69	33	20	17
29	97	4,480	8,900	1,080	-	773	314	158	80	33	21	17
30	252	2,950	4,180	980	-	701	310	148	80	35	22	18
31	190	-	2,490	837	-	632	-	135	-	35	22	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,201	252	20	38.7	0.229	0.26	2,380
November	66,418	13,000	59	2,214	13.1	14.62	131,700
December	94,643	21,500	415	3,053	18.1	20.83	187,700
Calendar year 1945	393,065	21,500	20	1,077	6.37	86.50	779,600
January	61,241	7,110	516	1,976	11.7	13.48	121,500
February	43,683	5,670	683	1,560	9.23	9.61	86,640
March	44,987	3,980	632	1,451	8.59	9.90	89,230
April	13,852	800	282	462	2.73	3.05	27,480
May	5,143	278	123	166	.982	1.13	10,200
June	2,708	130	67	90.3	.534	.60	5,370
July	1,428	72	33	46.1	.273	.31	2,830
August	766	33	19	24.7	.146	.17	1,520
September	631	43	15	21.0	.124	.14	1,250
Water year 1945-46	336,701	21,500	15	922	5.46	74.10	667,800

Peak discharge.- Nov. 27 (4 a.m. and 11 a.m.) 14,600 sec.-ft.; Nov. 28 (6 a.m.) 12,100 sec.-ft.; Dec. 6 (6 p.m.) 10,600 sec.-ft.; Dec. 28 (5 p.m.) 27,700 sec.-ft.; Jan. 5 (6 to 7 p.m.) 8,080 sec.-ft.; Feb. 6 (11 a.m.) 7,970 sec.-ft.

a No gage-height record; discharge computed on basis of records for North and Middle Forks Coquille River near Myrtle Point.
h Computed from staff-gage reading.

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Middle Fork Coquille River near Myrtle Point, Oreg.

Location.- Water-stage recorder, lat. 43°02', long. 124°05', in S½ sec. 26, T. 29 S., R. 12 W., a third of a mile downstream from Indian Creek and 3¾ miles southeast of Myrtle Point. Datum of gage is 41.20 feet above mean sea level, datum of 1929.

Drainage area.- 305 square miles.

Records available.- October 1930 to September 1946 (discontinued).

Average discharge.- 16 years, 743 second-feet.

Extremes.- Maximum discharge during year, 23,400 second-feet Dec. 28 (gage height, 23.0 feet), from rating curve extended above 9,000 second-feet; minimum, 14 second-feet Sept. 11-14.

1930-46: Maximum discharge, that of Dec. 28, 1945; minimum daily, 1 second-foot July 16, 17, 1931.

Maximum stage known, 25.8 feet probably on Oct. 31, 1924.

Remarks.- Records good. Log ponds above station which formerly caused diurnal fluctuation at times have been little used in recent years. No diversion above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 8 to Sept. 30)

1.8	12	3.4	115	7.0	1,100	14.0	6,670
2.0	18	3.8	169	8.0	1,600	16.0	9,360
2.3	29	4.4	277	9.5	2,450	18.0	12,400
2.6	45	5.0	406	11.0	3,600	21.0	18,400
3.0	75	6.0	680	12.5	5,000		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	52	1,870	1,930	1,340	2,240	542	255	185	52	25	18
2	18	38	1,360	2,370	1,960	1,840	500	234	164	49	23	17
3	18	32	1,140	2,510	2,190	2,790	478	218	153	47	22	17
4	17	28	1,540	3,010	1,670	2,710	445	206	139	47	21	16
5	16	27	3,180	9,730	1,380	2,120	423	190	131	45	21	16
6	16	46	4,200	5,670	4,840	1,970	397	179	141	44	21	16
7	15	127	7,910	5,450	6,130	1,850	376	171	130	43	20	16
8	15	126	4,230	5,800	3,820	1,570	416	163	116	43	20	16
9	15	198	2,580	3,410	2,490	1,310	656	158	108	44	20	15
10	15	662	1,990	2,350	2,110	1,130	828	151	102	43	20	15
11	15	840	1,620	1,820	2,030	968	704	144	96	40	19	14
12	15	1,390	1,340	1,480	1,680	2,180	611	136	93	38	19	14
13	15	1,080	1,060	1,200	1,390	6,440	536	131	92	38	19	14
14	15	569	888	1,000	1,180	4,180	480	126	103	38	19	14
15	15	668	816	860	1,090	2,970	435	122	102	36	19	16
16	15	1,930	768	732	1,040	2,460	397	117	99	34	18	29
17	15	2,040	662	641	1,040	2,090	365	114	90	34	18	56
18	15	2,920	605	602	1,110	1,900	341	110	83	32	18	31
19	15	8,510	551	578	1,200	1,550	328	105	79	32	18	32
20	16	3,540	510	641	1,140	1,290	328	101	73	30	18	20
21	17	1,760	522	608	1,100	1,050	299	108	67	28	17	19
22	23	1,120	522	1,280	1,040	948	273	122	63	27	17	18
23	27	792	1,100	1,860	932	844	255	113	69	27	16	17
24	23	596	2,790	2,440	1,000	900	244	104	83	27	16	16
25	20	1,190	1,990	4,740	1,270	864	234	102	87	26	16	16
26	19	2,810	2,010	2,790	1,090	804	253	157	77	25	17	16
27	18	6,030	2,570	1,890	2,270	748	233	365	65	25	18	16
28	21	8,940	17,200	1,620	2,790	716	215	312	60	25	17	16
29	31	5,400	11,200	1,820	-	684	259	299	55	24	17	15
30	47	2,940	4,730	1,980	-	629	295	251	54	25	18	16
31	71	-	2,760	1,570	-	596	-	216	-	25	19	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	631	71	15	20.4	0.067	0.08	1,250
November	56,401	8,940	27	1,880	6.16	6.88	111,900
December	86,214	17,200	510	2,781	9.12	10.51	171,000
Calendar year 1945	386,947	17,200	14	1,060	3.48	47.18	767,500
January	74,382	9,730	578	2,399	7.87	9.07	147,500
February	52,322	6,130	932	1,869	6.13	6.38	103,800
March	54,241	6,440	596	1,750	5.74	6.61	107,600
April	12,146	828	215	405	1.33	1.48	24,090
May	5,280	365	101	170	.557	.64	10,470
June	2,959	185	54	98.6	.323	.36	5,870
July	1,093	52	24	35.3	.116	.13	2,170
August	586	25	16	18.9	.062	.07	1,160
September	558	56	14	18.6	.061	.07	1,110
Water year 1945-46	346,813	17,200	14	950	3.11	42.28	687,900

Peak discharge.- Nov. 19 (3 a.m.) 10,700 sec.-ft.; Nov. 28 (12 m.) 10,800 sec.-ft.; Dec. 7 (2 a.m.) 10,500 sec.-ft.; Dec. 28 (7:30 p.m.) 23,400 sec.-ft.; Jan. 5 (12 m.) 11,400 sec.-ft.; Jan. 7 (12 p.m.) 7,180 sec.-ft.

North Fork Coquille River near Myrtle Point, Oreg.

Location.- Water-stage recorder, lat. 43°06', long. 124°04', in NW¼ sec. 36, T. 28 S., R. 12 W., a quarter of a mile downstream from East Fork and 4½ miles northeast of Myrtle Point. Datum of gage is 10.94 feet above mean sea level, datum of 1929.

Drainage area.- 276 square miles.

Records available.- October 1930 to September 1946 (discontinued). October 1928 to September 1930 at site 3½ miles downstream.

Average discharge.- 17 years (1929-46), 911 second-feet.

Extremes.- Maximum discharge during year, 10,900 second-feet Dec. 28 (gage height, 39.3 feet), from rating curve extended above 5,500 second-feet; minimum, 26 second-feet Sept. 30.
1928-46: Maximum discharge, that of Dec. 28, 1945; minimum discharge, 14 second-feet Sept. 3, 1939.
Maximum stage known, 41.2 feet sometime during winter of 1909-10.

Remarks.- Records poor. No diversion above station. Flow slightly regulated by operation of log ponds above station.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	102	4,230	4,110	2,190	3,530	885	325	178	111	53	32
2	46	86	3,050	3,420	2,100	2,940	800	304	161	106	51	31
3	50	70	2,320	3,560	2,360	2,970	715	276	150	98	48	31
4	40	64	2,050	3,740	2,260	3,390	651	257	106	85	47	31
5	41	60	2,140	6,440	2,100	2,940	651	244	116	87	45	31
6	39	65	3,020	6,520	2,720	2,650	635	238	140	83	45	31
7	37	157	6,970	5,510	5,480	2,650	619	219	183	83	44	32
8	37	272	6,440	5,760	4,910	2,360	619	207	156	85	42	32
9	41	324	4,840	4,840	3,950	2,030	715	201	140	106	41	29
10	56	1,290	3,710	3,800	3,270	1,740	919	201	140	125	40	28
11	35	2,030	2,860	2,940	3,020	1,540	936	1e9	130	106	40	28
12	32	2,340	2,290	2,260	2,750	1,890	834	178	125	95	40	28
13	32	2,320	1,890	1,820	2,390	6,330	749	172	125	87	41	28
14	31	1,210	1,650	1,520	2,120	6,180	683	166	140	83	39	27
15	31	885	1,540	1,310	1,910	4,780	635	161	231	81	38	31
16	32	1,850	1,540	1,210	1,760	4,230	587	161	238	79	33	70
17	33	3,100	1,480	1,130	1,600	3,530	539	150	195	75	31	231
18	33	3,160	1,330	1,080	1,520	3,100	507	150	168	70	29	150
19	33	6,520	1,210	1,010	1,430	2,670	491	145	150	66	28	62
20	33	6,220	1,150	988	1,370	2,290	460	140	130	67	28	47
21	34	4,080	1,100	1,020	1,310	1,960	460	140	130	65	29	42
22	39	2,490	1,100	1,700	1,270	1,780	430	150	125	62	28	39
23	47	1,690	1,110	3,620	1,210	1,630	400	156	120	60	28	37
24	49	1,330	2,340	3,590	1,130	1,500	370	150	140	61	30	36
25	48	1,410	2,780	5,900	1,170	1,460	348	140	156	59	31	34
26	46	1,980	2,670	4,910	1,250	1,410	332	166	166	56	31	33
27	44	4,520	3,530	3,740	1,890	1,310	332	270	140	55	31	31
28	59	7,440	8,540	2,970	3,800	1,230	311	304	125	55	31	30
29	56	7,400	9,250	2,650	-	1,130	304	283	120	55	38	28
30	163	5,860	7,200	2,540	-	1,060	370	231	116	55	44	28
31	104	-	5,580	2,390	-	970	-	195	-	54	35	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,445	163	31	46.6	0.169	0.19	2,870
November	70,325	7,440	60	2,344	8.49	9.48	139,500
December	100,890	9,250	1,100	3,255	11.8	13.59	200,100
Calendar year 1945	485,081	9,250	31	1,329	4.82	65.35	962,200
January	97,998	6,520	988	3,161	11.5	13.20	194,400
February	64,240	5,480	1,130	2,294	8.31	8.66	127,400
March	79,160	6,330	970	2,554	9.25	10.67	157,000
April	17,287	936	304	576	2.09	2.33	34,290
May	6,269	325	140	202	.732	.84	12,430
June	4,438	238	106	148	.536	.60	8,800
July	2,415	125	54	77.9	.282	.33	4,790
August	1,159	53	2e	37.4	.136	.16	2,300
September	1,348	231	27	44.9	.163	.18	2,670
Water year 1945-46	446,974	9,250	27	1,225	4.44	60.23	886,600

Rogue River above Bybee Creek, Oreg.

Location.- Water-stage recorder, lat. 42°56', long. 122°26', in NE¼ sec. 26, T. 30 S., R. 3 E., 700 feet upstream from Bybee Creek and 2 miles northeast of Union Creek. Altitude of gage, 3,465 feet (from river-profile map).

Drainage area.- 155 square miles.

Records available.- January 1930 to September 1946.

Average discharge.- 16 years, 467 second-feet.

Extremes.- Maximum discharge during year, 4,430 second-feet Dec. 28 (gage height, 7.84 feet), from rating curve extended above 2,000 second-feet; minimum, 262 second-feet Oct. 15, 16 (gage height, 1.19 feet).

1930-46: Maximum discharge, 4,430 second-feet Nov. 29, 1942, Dec. 28, 1945 (gage height, 7.84 feet), from rating curve extended above 2,000 second-feet; minimum daily, 180 second-feet (estimated) Jan. 7, 1937 (gage height affected by ice).

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

Cooperation.- Water-stage recorder inspected by employee of The California Oregon Power Co.

Rating table, water year 1945-46, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

1.3	290	3.6	1,310
1.5	350	4.2	1,670
1.9	490	5.0	2,180
2.4	705	6.0	2,910
3.0	990	6.4	3,230

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	272	299	394	885	418	474	443	905	1,090	584	371	332
2	272	320	368	885	426	462	436	990	1,130	579	368	332
3	270	290	362	800	404	440	426	1,140	1,140	562	368	332
4	270	280	422	786	398	418	422	1,260	1,080	546	362	a350
5	270	296	401	746	398	426	440	1,220	1,050	534	359	a340
6	270	296	440	642	377	466	454	1,190	1,000	526	359	a335
7	270	290	482	615	b365	466	470	1,210	935	514	359	a335
8	270	282	404	546	b350	454	482	1,160	930	522	356	a330
9	270	299	371	518	a355	458	458	1,180	905	510	356	a330
10	270	317	362	498	a350	482	443	1,220	845	486	353	a330
11	268	296	347	466	a345	478	450	1,210	836	482	353	a325
12	268	308	329	b478	a340	518	502	1,210	845	470	350	a325
13	265	299	b300	b446	a340	526	558	1,210	870	462	347	a325
14	265	299	b310	a425	a345	474	638	1,140	950	450	347	a325
15	262	350	b360	a415	a340	466	728	1,120	885	443	347	a335
16	270	323	b370	a405	338	436	826	1,200	836	436	344	a370
17	275	308	323	a400	341	450	940	1,340	790	429	341	a350
18	265	335	311	a395	338	432	1,080	1,420	790	418	341	a335
19	268	415	b305	a390	355	429	1,060	1,390	813	415	338	a330
20	272	332	311	*387	332	426	955	1,390	826	412	338	326
21	272	311	353	384	338	429	860	1,320	831	404	335	323
22	278	311	356	526	329	440	822	1,210	790	401	335	323
23	270	317	374	514	329	418	860	1,130	741	398	338	317
24	268	326	368	610	344	415	1,040	1,080	705	390	335	317
25	265	371	368	592	347	401	1,270	1,080	678	387	335	314
26	268	344	380	530	350	412	1,320	1,150	646	394	332	314
27	278	559	685	498	554	466	1,130	1,190	620	390	332	314
28	299	895	3,300	482	538	494	1,060	1,140	620	380	344	314
29	299	602	2,700	466	-	490	1,040	1,080	602	377	356	314
30	380	443	1,510	b443	-	470	945	1,040	588	377	347	314
31	320	-	1,080	b443	-	450	-	1,060	-	377	335	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	8,579	380	262	277	1.79	2.06	17,020
November	10,713	895	280	357	2.30	2.57	21,250
December	18,746	3,300	300	605	3.90	4.50	37,180
Calendar year 1945	180,917	3,300	262	496	3.20	43.42	358,900
January	16,616	885	384	536	3.46	3.99	32,960
February	10,364	554	329	370	2.39	2.49	20,560
March	14,066	526	401	454	2.93	3.37	27,900
April	22,558	1,320	422	752	4.85	5.41	44,740
May	36,585	1,420	905	1,180	7.61	8.78	72,570
June	25,367	1,140	588	848	5.46	6.09	50,310
July	14,055	584	377	453	2.92	3.37	27,880
August	10,781	371	332	348	2.25	2.59	21,380
September	9,856	370	314	329	2.12	2.36	19,550
Water year 1945-46	198,286	3,300	262	543	3.50	47.58	393,300

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station above Prospect.
b Stage-discharge relation affected by ice.

Rogue River above Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°47', long. 122°30', in NE¼ sec. 19, T. 32 S., R. 3 E., 1½ miles upstream from intake of diversion of The California Oregon Power Co., 2 miles northwest of Prospect, and 3 miles upstream from Mill Creek. Altitude of gage, 2,620 feet (from river-profile map).

Drainage area.- 332 square miles.

Records available.- July 1907 to February 1912 (incomplete), October 1923 to September 1946.

Average discharge.- 24 years (1910-11, 1923-46), 719 second-feet.

Extremes.- Maximum discharge during year, 11,900 second-feet Dec. 28 (gage height, 8.4 feet, from floodmark), from rating curve extended above 5,000 second-feet; minimum, 370 second-feet Oct. 15, 16 (gage height, 1.42 feet).
1907-12, 1923-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 200 second-feet Nov. 20, 1931 (gage height, 1.07 feet).

Remarks.- Records good except those above 1,400 second-feet, which are fair. No diversion or regulation above station.

Cooperation.-Water-stage recorder graph furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	384	442	749	1,870	749	1,040	826	1,530	1,650	819	516	460
2	379	442	672	1,920	749	984	805	1,690	1,710	819	510	460
3	379	420	637	1,750	693	928	777	1,980	1,720	798	505	460
4	379	402	920	1,770	672	856	749	2,220	1,650	777	505	480
5	379	415	912	2,060	665	840	770	2,150	1,590	756	500	470
6	379	428	1,080	1,530	644	960	784	2,090	1,500	735	495	460
7	379	410	1,370	1,370	624	976	819	2,100	1,370	728	495	456
8	379	410	960	1,170	588	928	848	1,980	1,360	728	500	456
9	379	438	805	1,040	594	920	833	1,980	1,330	735	490	451
10	374	475	735	952	588	984	798	2,050	1,240	693	490	446
11	374	446	672	864	564	992	791	2,010	1,210	686	490	446
12	374	451	594	819	546	1,190	888	2,000	1,220	672	485	442
13	374	451	495	805	540	1,390	1,060	1,980	1,240	658	485	446
14	374	442	500	777	540	1,110	1,220	1,890	1,360	644	480	442
15	370	558	564	735	540	1,010	1,410	1,810	1,280	637	485	451
16	379	522	606	707	534	904	1,630	1,910	1,190	618	480	500
17	392	480	552	686	528	888	1,870	2,110	1,120	606	480	485
18	379	586	505	672	528	848	2,190	2,300	1,090	600	475	460
19	374	968	495	665	534	819	2,110	2,220	1,130	588	475	451
20	388	637	a530	651	534	798	1,840	2,220	1,160	576	475	451
21	384	540	594	644	546	777	1,590	2,100	1,160	570	470	451
22	402	510	618	1,120	546	798	1,480	1,890	1,120	564	470	451
23	388	505	707	1,130	546	784	1,560	1,750	1,050	558	470	446
24	379	528	826	1,270	594	770	1,930	1,660	1,000	546	465	442
25	379	651	812	1,270	693	728	2,450	1,650	952	540	460	442
26	374	606	944	1,070	679	728	2,500	1,750	912	546	460	442
27	384	1,020	1,830	984	1,230	856	2,100	1,850	872	552	456	438
28	428	1,970	8,550	928	1,270	944	1,910	1,790	864	540	456	433
29	433	1,310	6,720	872	-	960	1,860	1,670	856	528	485	433
30	564	904	3,560	784	-	912	1,650	1,590	819	528	475	433
31	475	-	2,430	749	-	856	-	1,610	-	528	465	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	12,158	564	370	392	1.18	1.36	24,120
November	18,367	1,970	402	612	1.84	2.06	36,430
December	41,944	8,550	495	1,353	4.08	4.70	83,190
Calendar year 1945	303,956	8,550	370	833	2.51	34.06	602,900
January	33,634	2,060	644	1,085	3.27	3.77	66,710
February	18,058	1,270	528	645	1.94	2.02	35,820
March	28,478	1,390	728	919	2.77	3.19	56,490
April	42,048	2,500	749	1,402	4.22	4.71	83,400
May	59,530	2,300	1,530	1,920	5.78	6.67	118,100
June	36,725	1,720	819	1,224	3.69	4.11	72,840
July	19,873	819	528	641	1.93	2.23	39,420
August	14,948	516	456	482	1.45	1.67	29,650
September	13,584	500	433	453	1.36	1.52	26,940
Water year 1945-46	339,347	8,550	370	930	2.80	38.01	673,100

a No gage-height record; discharge computed on basis of records for station above Bybee Creek.

Rogue River below South Fork Rogue River, near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°42', long. 122°36', in NW¼ sec. 16, T. 33 S., R. 2 E., at bridge 6 miles southwest of Prospect. Altitude of gage, 1,708 feet (from river-profile map).
Drainage area.- 643 square miles.
Records available.- April 1929 to September 1946.
Average discharge.- 17 years, 1,589 second-feet.
Extremes.- Maximum discharge during year, 19,800 second-feet Dec. 28 (gage height, 12.2 feet), from rating curve extended above 2,500 second-feet; minimum, 635 second-feet (regulated) Sept. 24, 30 (gage height, 0.39 foot); minimum daily, 844 second-feet Oct. 13, 15.
1929-46: Maximum discharge, that of Dec. 28, 1945; minimum gage height and minimum daily discharge not determined, as stage falls too low at times to be recorded.
Remarks.- Records good except those for period of no gage-height record, which are fair. Small diversions above station for irrigation. Considerable diurnal fluctuation caused by power plant 4 miles above station.
Cooperation.- Water-stage recorder graph furnished by The California Oregon Power Co.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27

0.7	790	2.0	1,800
1.0	980	2.5	2,310
1.3	1,200	3.0	2,880
1.6	1,440	3.5	3,510

Dec. 28 to Sept. 30

0.9	955	5.0	5,700
1.4	1,350	6.0	7,300
2.0	1,870	7.0	9,000
3.0	2,950	8.5	11,800
4.0	4,250	10.0	14,800

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	896	987	1,570	4,070	1,870	2,480	1,960	2,850	3,070	1,810	1,250	1,100
2	896	948	1,440	4,080	1,870	2,390	1,910	3,050	3,180	1,790	1,230	1,090
3	896	934	1,380	3,830	1,780	2,260	1,860	3,450	3,210	1,750	1,230	1,090
4	889	908	1,750	3,890	1,730	2,120	1,830	3,790	3,130	1,720	1,220	1,110
5	902	928	1,640	4,850	1,730	2,110	1,840	3,660	3,050	1,690	1,210	1,090
6	889	954	2,050	a4,000	1,770	2,340	1,820	3,600	2,890	1,660	1,200	1,090
7	896	934	2,360	a3,500	1,720	2,330	1,850	3,620	2,700	1,620	1,190	1,070
8	902	928	1,850	a3,100	1,640	2,230	1,920	3,450	2,700	1,630	1,190	1,050
9	889	1,010	1,650	a2,900	1,600	2,200	1,890	3,450	2,650	1,640	1,170	1,050
10	896	1,110	1,610	a2,600	1,640	2,270	1,820	3,540	2,460	1,590	1,180	1,040
11	870	1,040	1,500	a2,400	1,580	2,290	1,830	3,500	2,380	1,550	1,170	1,030
12	863	1,080	1,380	a2,200	1,530	2,900	1,910	3,490	2,420	1,500	1,170	1,020
13	844	1,070	1,240	2,080	1,530	3,340	2,070	3,480	2,450	1,530	1,170	1,020
14	850	1,020	1,210	2,000	1,510	2,810	2,240	3,320	2,670	1,490	1,160	1,030
15	844	1,190	1,280	1,950	1,500	2,600	2,490	3,200	2,500	1,460	1,130	1,050
16	856	1,210	1,300	1,890	1,490	2,380	2,780	3,340	2,460	1,440	1,140	1,170
17	882	1,150	1,240	1,840	1,460	2,330	3,090	3,620	2,330	1,410	1,130	1,120
18	870	1,320	1,140	1,780	1,500	2,210	3,570	3,900	2,270	1,380	1,120	1,080
19	863	1,950	1,140	1,740	1,470	2,150	3,580	3,820	2,320	1,380	1,110	1,050
20	870	1,410	1,140	1,710	1,520	2,080	3,240	3,830	2,370	1,350	1,120	1,040
21	856	1,200	1,290	1,670	1,600	2,020	2,950	3,760	2,400	1,330	1,110	1,020
22	922	1,130	1,340	2,280	1,570	2,060	2,750	3,450	2,330	1,340	1,110	1,020
23	902	1,130	1,440	2,410	1,550	1,990	2,810	3,250	2,190	1,330	1,120	1,010
24	882	1,160	1,660	2,710	1,690	1,960	3,270	3,070	2,120	1,320	1,090	1,000
25	896	1,330	1,650	2,770	1,820	1,890	3,940	3,020	2,040	1,290	1,100	978
26	882	1,340	1,920	2,420	1,810	1,890	4,190	3,210	1,950	1,320	1,090	992
27	896	2,200	3,010	2,290	2,730	1,940	3,640	3,440	1,900	1,330	1,080	985
28	967	3,440	13,400	2,200	2,870	2,110	3,390	3,300	1,880	1,290	1,060	962
29	967	2,340	11,900	2,120	-	2,170	3,360	3,110	1,860	1,270	1,130	962
30	1,170	1,800	7,010	1,980	-	2,080	3,050	3,000	1,820	1,270	1,100	985
31	1,060	-	5,040	1,900	-	2,000	-	3,020	-	1,270	1,090	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	27,963	1,170	844	902	1.40	1.62	55,460
November	39,151	3,440	908	1,305	2.03	2.26	77,650
December	79,530	13,400	1,140	2,565	3.99	4.60	157,700
Calendar year 1945	657,344	13,400	844	1,801	2.80	38.01	1,304,000
January	81,160	4,850	1,670	2,618	4.07	4.69	161,000
February	48,080	2,870	1,460	1,717	2.67	2.78	95,370
March	69,930	3,340	1,890	2,256	3.51	4.04	138,700
April	78,850	4,190	1,820	2,628	4.09	4.56	156,400
May	105,590	3,900	2,850	3,406	5.30	6.11	209,400
June	73,700	3,210	1,820	2,457	3.82	4.26	146,200
July	45,750	1,810	1,270	1,476	2.30	2.65	90,740
August	35,570	1,250	1,060	1,147	1.78	2.06	70,550
September	31,304	1,170	962	1,043	1.62	1.81	62,090
Water year 1945-46	716,578	13,400	844	1,963	3.05	41.44	1,421,000

a No gage-height record; discharge computed on basis of records for station at Dodge Bridge, near Eagle Point.

Rogue River at Dodge Bridge, near Eagle Point, Oreg.

Location.- Water-stage recorder, lat. 42°32', long. 122°50', in SE¼ sec. 17, T. 35 S., R. 1 W., at Dodge Bridge, 0.6 mile downstream from Reese Creek and 4½ miles northwest of Eagle Point. Datum of gage is 1,273.66 feet above mean sea level, datum of 1929.

Records available.- October 1938 to September 1946.

Extremes.- Maximum discharge during year, 31,800 second-feet Dec. 28 (gage height, 10.92 feet), from rating curve extended above 10,500 second-feet; minimum, 830 second-feet (regulated) Oct. 6 (gage height, 1.06 feet); minimum daily, 1,020 second-feet Oct. 4. 1938-46: Maximum discharge, that of Dec. 28, 1945; minimum, 611 second-feet (regulated) Aug. 6, 14, 29, Sept. 9, 1940 (gage height, 0.99 foot); minimum daily, 830 second-feet Sept. 1, 1940.

Remarks.- Records good. Many small diversions above station for irrigation; most of flow of Big Butte Creek is diverted near Butte Falls. Some diurnal fluctuation caused by power plant about 30 miles upstream.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30			
1.4	1,210	2.8	3,480	1.6	1,250	4.1	6,190
1.8	1,760	3.3	4,480	1.8	1,540	4.9	8,460
2.3	2,570	4.1	6,300	2.3	2,350	6.0	12,200
Note.- Same as following table above 4.9 feet.				2.8	3,270	7.2	16,600
				3.3	4,290	8.8	22,800

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,090	1,240	2,760	6,760	2,970	4,980	3,080	3,510	3,470	2,040	1,330	1,210
2	1,060	1,190	2,370	8,080	2,970	4,470	2,980	3,610	3,510	2,010	1,310	1,210
3	1,060	1,210	2,130	7,440	2,840	4,440	2,840	3,950	3,550	1,990	1,280	1,180
4	1,020	1,160	2,880	7,460	2,670	4,040	2,730	4,330	3,490	1,930	1,290	1,220
5	1,040	1,160	3,160	10,900	2,600	3,790	2,690	4,290	3,390	1,880	1,310	1,220
6	1,040	1,240	3,650	7,720	3,920	4,290	2,640	4,180	3,270	1,850	1,280	1,210
7	1,060	1,240	5,570	a6,700	3,690	4,210	2,670	4,210	3,060	1,830	1,280	1,200
8	1,100	1,210	3,810	a5,800	3,160	3,910	2,780	4,040	3,020	1,830	1,280	1,200
9	1,070	1,310	3,010	5,190	2,910	3,710	2,730	3,980	2,980	1,870	1,220	1,180
10	1,080	1,570	3,050	4,690	2,870	3,750	2,660	4,040	2,800	1,750	1,240	1,170
11	1,090	1,480	2,710	4,120	2,760	3,710	2,600	4,020	2,690	1,720	1,260	1,160
12	1,090	1,680	2,430	3,710	2,550	5,480	2,670	3,960	2,710	1,710	1,240	1,160
13	1,080	1,670	2,070	3,490	2,490	6,900	2,970	3,950	2,730	1,690	1,220	1,150
14	1,080	1,430	1,910	3,310	2,460	5,460	3,180	3,810	2,950	1,660	1,220	1,160
15	1,080	1,990	1,930	3,120	2,510	5,010	3,410	3,650	2,870	1,630	1,220	1,160
16	1,100	2,280	2,130	2,950	2,600	4,470	3,690	3,710	2,760	1,600	1,220	1,310
17	1,110	2,230	2,130	2,820	2,550	4,420	3,980	3,980	2,670	1,580	1,220	1,280
18	1,110	2,260	1,940	2,710	2,620	4,360	4,440	4,250	2,580	1,570	1,240	1,210
19	1,090	5,160	1,840	2,640	2,750	4,000	4,530	4,180	2,600	1,540	1,220	1,200
20	1,100	2,970	1,840	2,580	2,870	3,730	4,140	4,160	2,640	1,510	1,210	1,170
21	1,100	2,100	2,010	2,480	3,080	3,490	3,790	4,230	2,690	1,450	1,200	1,150
22	1,160	1,800	2,210	3,870	3,100	3,490	3,550	3,980	2,640	1,390	1,180	1,160
23	1,130	1,740	2,550	4,360	2,890	3,390	3,510	3,750	2,510	1,390	1,200	1,160
24	1,100	1,760	3,630	5,300	3,100	3,290	3,870	3,490	2,480	1,390	1,170	1,160
25	1,090	2,700	3,460	5,410	3,550	3,140	4,530	3,430	2,320	1,360	1,200	1,150
26	1,080	2,960	4,480	4,420	3,310	3,020	4,940	3,590	2,230	1,380	1,180	1,130
27	1,100	4,290	7,170	4,000	5,590	3,120	4,440	3,870	2,180	1,400	1,160	1,130
28	1,190	8,340	23,300	3,730	6,190	3,350	4,140	3,810	2,130	1,350	1,170	1,130
29	1,200	5,620	21,200	3,550	-	3,730	4,080	3,570	2,130	1,330	1,220	1,130
30	1,430	3,560	12,200	3,230	-	3,450	3,790	3,410	2,040	1,350	1,210	1,150
31	1,420	-	8,580	3,000	-	3,210	-	3,390	-	1,320	1,210	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	34,550	1,430	1,020	1,115	68,530
November	70,550	8,340	1,160	2,352	139,900
December	144,110	23,300	1,840	4,649	285,800
Calendar year 1945	963,413	23,300	980	2,639	1,911,000
January	145,540	10,900	2,480	4,695	288,700
February	87,570	6,190	2,460	3,128	173,700
March	125,810	6,900	3,020	4,058	249,500
April	104,050	4,940	2,600	3,468	206,400
May	120,350	4,330	3,390	3,882	238,700
June	83,090	3,550	2,040	2,770	164,800
July	50,300	2,040	1,320	1,623	99,770
August	38,190	1,330	1,160	1,232	75,750
September	35,410	1,310	1,130	1,180	70,230
Water year 1945-46	1,039,520	23,300	1,020	2,848	2,062,000

Peak discharge.- Nov. 28 (2 p.m.) 9,590 sec.-ft.; Dec. 28 (8 p.m.) 31,800 sec.-ft.; Jan. 2 (4 p.m.) 10,600 sec.-ft.; Jan. 5 (8 a.m.) 12,400 sec.-ft.; Jan. 7 (about 12 m.) 9,790 sec.-ft.; Jan. 24 (5 p.m.) 7,700 sec.-ft.

a No gage-height record; discharge computed on basis of records for stations above Prospect and at Grants Pass.

Rogue River at Raygold, near Central Point, Oreg.

Location.- Water-stage recorder, lat. 42°26', long. 122°59', in sec. 18, T. 36 S., R. 2 W., at Raygold, just downstream from dam and powerhouse of The California Oregon Power Co., half a mile downstream from Bear Creek, and 6 miles northwest of Central Point. Datum of gage is 1,121.78 feet above mean sea level, datum of 1929.

Drainage area.- 2,020 square miles.

Records available.- August 1905 to September 1946.

Average discharge.- 41 years, 2,739 second-feet.

Extremes.- Maximum discharge during year, 48,000 second-feet Dec. 28 (gage height, 16.0 feet); minimum, 742 second-feet (regulated) Nov. 5 (gage height, 0.26 foot); minimum daily, 990 second-feet Oct. 5.
1905-46: Maximum discharge, 91,500 second-feet Feb. 21, 1927 (gage height, 24.8 feet, from floodmark), from rating curve extended above 36,000 second-feet; minimum not determined; minimum daily, 616 second-feet Sept. 6, 1931.

Remarks.- Records good except those for Dec. 28 to Jan. 3, which are fair. Many diversions above station for irrigation. Diurnal fluctuation caused by power plant just above station.

Cooperation.- Water-stage recorder inspected by employees of The California Oregon Power Co.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.6	990	3.0	4,000	8.0	16,500
1.0	1,330	4.0	5,900	10.0	23,500
1.5	1,850	5.0	8,060	12.0	31,100
2.0	2,460	6.0	10,500		
2.5	3,170	7.0	13,300		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,070	1,310	3,270	7,810	3,510	6,170	3,740	4,050	3,680	2,060	1,400	1,240
2	1,080	1,220	2,730	10,200	3,610	5,370	3,590	4,030	3,680	2,060	1,410	1,220
3	1,050	1,260	2,420	9,820	3,430	5,430	3,430	4,400	3,710	2,010	1,350	1,230
4	1,060	1,210	3,220	8,850	3,220	4,940	3,280	4,750	3,680	1,960	1,370	1,280
5	990	1,150	3,810	13,000	3,120	4,550	3,230	4,790	3,520	1,930	1,330	1,310
6	1,060	1,270	3,760	9,420	4,950	5,170	3,200	4,640	3,430	1,880	1,320	1,300
7	1,050	1,270	6,930	11,500	5,010	5,190	3,190	4,570	3,190	1,850	1,320	1,250
8	1,090	1,230	4,770	8,920	3,950	4,770	3,230	4,480	3,060	1,840	1,320	1,240
9	1,090	1,280	3,540	6,680	3,540	4,530	3,250	4,330	3,060	1,890	1,310	1,240
10	1,070	1,650	3,490	5,770	3,460	4,490	3,200	4,330	2,880	1,800	1,290	1,220
11	1,090	1,630	3,170	5,010	3,360	4,490	3,100	4,370	2,740	1,740	1,280	1,210
12	1,070	1,880	2,790	4,400	3,110	6,220	3,110	4,220	2,730	1,720	1,260	1,200
13	1,090	1,850	2,400	4,080	2,980	8,700	3,460	4,280	2,730	1,680	1,280	1,200
14	1,050	1,550	2,140	3,830	2,900	6,970	3,710	4,140	2,920	1,670	1,280	1,190
15	1,050	1,960	2,100	3,630	2,930	6,320	3,930	3,970	2,960	1,650	1,280	1,210
16	1,070	2,450	2,360	3,380	3,060	5,820	4,280	3,970	2,800	1,620	1,270	1,320
17	1,120	2,650	2,490	3,220	3,040	5,710	4,620	4,190	2,760	1,600	1,240	1,370
18	1,130	2,140	2,240	3,120	3,160	5,880	5,170	4,490	2,660	1,560	1,240	1,310
19	1,090	6,450	1,970	3,000	3,300	5,170	5,350	4,480	2,600	1,530	1,240	1,290
20	1,090	3,980	1,920	2,930	3,390	4,880	4,980	4,490	2,620	1,510	1,240	1,260
21	1,090	2,470	2,070	2,870	3,560	4,490	4,530	4,690	2,670	1,470	1,230	1,220
22	1,150	2,030	2,300	4,260	3,660	4,390	4,220	4,490	2,660	1,460	1,220	1,200
23	1,150	1,940	2,540	5,610	3,430	4,220	4,120	4,240	2,550	1,470	1,260	1,240
24	1,130	1,870	3,920	6,920	3,540	4,070	4,330	3,880	2,550	1,460	1,220	1,210
25	1,130	2,880	3,680	8,060	4,190	3,880	5,010	3,860	2,410	1,410	1,220	1,180
26	1,130	4,030	4,900	5,730	3,920	3,640	5,530	4,000	2,300	1,440	1,260	1,180
27	1,130	4,780	7,260	4,980	6,510	3,760	5,130	4,260	2,240	1,500	1,210	1,180
28	1,160	10,900	30,000	4,620	8,060	4,030	4,710	4,240	2,180	1,460	1,190	1,190
29	1,210	8,060	31,700	4,390	-	4,840	4,620	3,950	2,190	1,410	1,250	1,200
30	1,420	4,480	14,700	3,980	-	4,390	4,490	3,690	2,130	1,410	1,240	1,190
31	1,580	-	9,870	3,590	-	3,980	-	3,660	-	1,450	1,250	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	34,740	1,580	990	1,121	68,910
November	82,830	10,900	1,150	2,761	164,300
December	174,460	31,700	1,920	5,628	346,000
Calendar year 1945	1,109,426	31,700	990	3,040	2,201,000
January	183,580	13,000	2,870	5,922	364,100
February	105,880	8,060	2,900	3,781	210,000
March	156,460	8,700	3,640	5,047	310,300
April	121,740	5,530	3,100	4,058	241,500
May	131,930	4,790	3,660	4,256	261,700
June	85,290	3,710	2,130	2,843	169,200
July	51,500	2,060	1,410	1,661	102,100
August	39,580	1,410	1,190	1,277	78,510
September	37,080	1,370	1,180	1,236	73,550
Water year 1945-46	1,205,070	31,700	990	3,302	2,390,000

Peak discharge.- Nov. 28 (8 p.m.) 13,000 sec.-ft.; Dec. 28 (10:30 p.m.) 48,000 sec.-ft.; Jan. 2 (7:30 p.m.) 16,200 sec.-ft.; Jan. 5 (11 a.m.) 15,600 sec.-ft.; Jan. 7 (3 p.m.) 15,400 sec.-ft.; Jan. 24 (9 p.m.) 12,400 sec.-ft.

Rogue River at Grants Pass, Oreg.

Location.- Water-stage recorder, lat. 42°26', long. 123°19', in NW¼ sec. 20, T. 36 S., R. 5 W., at filter plant 0.6 mile east of Pacific Highway bridge at Grants Pass. Datum of gage is 888.28 feet above mean sea level, datum of 1929.

Records available.- January 1939 to September 1946.

Extremes.- Maximum discharge during year, 70,000 second-feet Dec. 29 (gage height, 23.16 feet), from rating curve extended above 23,000 second-feet; minimum, 672 second-feet (regulated) Oct. 9 (gage height, 0.46 foot); minimum daily, 896 second-feet Oct. 4.
1939-46: Maximum discharge, that of Dec. 29, 1945; minimum, 560 second-feet (regulated) Aug. 8, 1940 (gage height, 0.30 foot); minimum daily, 637 second-feet Aug. 8, 1940.
Maximum stages known, about 32 feet in February 1890 and about 28 feet Feb. 22, 1927, from floodmarks.

Remarks.- Records good. Many diversions from Rogue River and tributaries above station, the largest of which are at Savage Rapids Dam of Grants Pass Irrigation District, 5 miles upstream. Flow slightly regulated by Fish Lake and Emigrant Gap Reservoirs and by pools above dams at Raygold and Savage Rapids.

Cooperation.- Water-stage recorder inspected by employees of Grants Pass Water Department.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.8	950	3.5	4,480	9.0	16,600
1.2	1,340	4.6	6,580	11.0	22,100
1.8	2,030	5.8	9,080	14.0	31,700
2.6	3,060	7.0	11,800	17.0	42,700

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	950	1,440	3,880	9,180	3,990	7,610	4,010	3,800	3,190	1,840	1,210	1,050
2	a940	1,340	3,170	11,000	4,080	6,420	3,830	3,660	3,360	1,780	1,170	1,040
3	932	1,320	2,790	12,400	3,990	6,340	3,620	3,910	3,370	1,770	1,140	1,030
4	896	1,320	4,090	10,400	3,690	5,820	3,440	4,320	3,340	1,730	1,130	1,070
5	914	1,260	4,840	15,100	3,520	5,270	3,360	4,460	3,100	1,690	1,120	1,130
6	923	1,340	4,440	11,800	6,230	5,740	3,210	4,300	3,160	1,660	1,110	1,110
7	923	1,370	8,430	13,400	7,760	5,840	3,330	4,270	2,980	1,630	1,100	1,100
8	1,470	1,350	5,840	11,900	5,510	5,360	3,500	4,160	2,860	1,600	1,090	1,080
9	1,210	1,340	4,250	8,620	4,710	4,980	3,190	4,010	2,820	1,670	1,070	1,060
10	1,100	1,740	3,990	7,250	4,410	4,890	3,260	4,010	2,740	1,600	1,060	1,040
11	1,120	1,850	3,610	6,180	4,280	4,890	3,160	4,040	2,580	1,530	1,050	1,010
12	1,120	1,980	3,170	5,320	3,830	6,540	3,170	3,960	2,530	1,490	1,040	1,020
13	1,110	2,100	2,720	4,840	3,560	9,930	3,460	3,940	2,500	1,450	1,030	1,010
14	1,090	1,790	2,440	4,520	3,440	8,140	3,700	3,850	2,660	1,450	1,040	995
15	1,080	1,980	2,360	4,200	3,430	7,170	3,900	3,660	2,750	1,440	1,040	1,030
16	1,120	2,720	2,600	3,910	3,540	6,800	4,110	3,620	2,570	1,410	1,020	1,110
17	1,130	2,980	2,750	3,690	3,490	6,260	4,430	3,780	2,580	1,380	1,030	1,260
18	1,170	2,500	2,490	3,490	3,600	6,800	4,910	4,080	2,430	1,330	1,010	1,220
19	1,160	6,680	2,300	3,380	3,750	5,900	5,230	4,130	2,370	1,300	1,030	1,140
20	1,150	4,980	2,200	3,300	3,850	5,510	4,910	4,060	2,350	1,270	1,010	1,120
21	1,180	2,920	2,280	3,200	3,930	5,040	4,410	4,320	2,390	1,240	1,010	1,080
22	1,170	2,340	2,610	4,230	4,180	4,800	4,030	4,340	2,370	1,230	995	1,070
23	1,240	2,110	3,090	6,840	3,860	4,700	3,820	4,010	2,310	1,220	1,000	1,040
24	1,210	2,090	4,950	7,400	3,880	4,480	4,010	3,640	2,350	1,220	1,000	1,030
25	1,250	2,670	4,660	10,600	4,660	4,250	4,520	3,610	2,210	1,190	995	1,010
26	1,140	5,060	6,060	7,190	4,370	3,980	5,100	3,770	2,080	1,200	1,030	1,010
27	1,150	5,180	9,470	6,020	7,340	3,990	4,880	3,990	2,010	1,230	1,080	1,010
28	1,200	13,400	40,000	5,440	9,730	4,230	4,350	4,030	1,960	1,290	1,030	1,030
29	1,300	10,500	43,900	5,130	-	5,040	4,250	3,770	1,970	1,200	995	1,050
30	1,340	5,530	17,200	4,680	-	4,730	4,250	3,490	1,910	1,200	1,040	1,050
31	1,730	-	11,700	4,150	-	4,250	-	3,550	-	1,220	1,040	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	35,418	1,730	896	1,143	70,250
November	95,180	13,400	1,260	3,173	188,800
December	218,280	43,900	2,200	7,041	433,000
Calendar year 1945	1,194,430	43,900	854	3,272	2,369,000
January	218,760	15,100	3,200	7,057	433,900
February	126,610	9,730	3,430	4,522	251,100
March	175,700	9,930	3,980	5,668	348,500
April	119,350	5,230	3,160	3,978	236,700
May	122,540	4,460	3,490	3,953	243,100
June	77,800	3,370	1,910	2,593	154,300
July	44,460	1,840	1,190	1,434	88,190
August	32,715	1,210	995	1,055	64,890
September	32,005	1,260	995	1,067	63,480
Water year 1945-46	1,298,818	43,900	896	3,558	2,576,000

Peak discharge.- Nov. 28 (7 p.m.) 15,800 sec.-ft.; Dec. 29 (1 a.m.) 70,000 sec.-ft.; Jan. 2 (10:30 p.m.) 17,800 sec.-ft.; Jan. 5 (1:30 p.m.) 17,800 sec.-ft.; Jan. 7 (6 p.m.) 18,100 sec.-ft.; Jan. 24 (12 p.m.) 14,500 sec.-ft.
a No gage-height record; discharge interpolated.

Reservoirs in Rogue River Basin, Oreg.

Fish Lake Reservoir.- Staff gage, lat. 42°23', long. 122°21', in SW¼ sec. 3, T. 37 S., R. 4 E., at reservoir outlet, 18 miles east of Lake Creek. Datum of gage is at mean sea level (irrigation district datum). Drainage area, 17 square miles. Records available, December 1915 to September 1946. Maximum contents observed during year, 6,412 acre-feet June 12 (elevation, 4,823.19 feet); minimum observed, 444 acre-feet Oct. 3, 4 (elevation, 4,803.75 feet). Maximum contents observed during period 1915-46, 7,975 acre-feet June 20, 1938 (elevation, 4,827.09 feet); no usable contents at times.

Reservoir is formed by rock-faced earth dam, completed in fall of 1915; storage began in November 1915. Capacity, 7,527 acre-feet between elevations 4,799 feet (outlet tunnel) and 4,826 feet (spillway channel, incomplete). Water is diverted during summer from Fourmile Lake in Klamath River Basin through Cascade Canal into Fish Lake. Gage read once daily by employee of Medford Irrigation District.

Emigrant Gap Reservoir.- Staff gage, lat. 42°10', long. 122°36', in SE¼ sec. 20, T. 39 S., R. 2 E., at Emigrant Gap Dam of Talent Irrigation District on Emigrant Creek, 6 miles southeast of Ashland. Datum of gage is at mean sea level (levels by Talent Irrigation District). Records available, December 1924 to September 1946. Maximum contents observed during year, 8,318 acre-feet Mar. 18 (elevation, 2,173.4 feet); minimum observed, 40 acre-feet Sept. 4 (elevation, 2,082.0 feet). Maximum contents during period 1924-46, 8,748 acre-feet Feb. 20, 1927 (elevation, 2,175.2 feet); no usable contents at times.

Reservoir is formed by concrete arch dam, completed in 1924 by Talent Irrigation District; storage began in December 1924. Capacity, 8,342 acre-feet between elevations 2,070 feet (16-inch sluice pipe) and 2,173.5 feet (crest of spillway). Dead storage negligible. Water is used for irrigation of lands near Talent. Gage read once to seven times weekly by employee of Talent Irrigation District.

Revision.- Contents of Emigrant Gap Reservoir on Sept. 30, 1945, revised to 85 acre-feet, computed on basis of records of inflow and outflow of reservoir. Change in contents during September 1945 changed to -483 acre-feet. Change in contents during water year 1944-45 changed to +15 acre-feet.

Monthly gage height and contents, water year October 1945 to September 1946

Date	Fish Lake Reservoir			Emigrant Gap Reservoir		
	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	4,803.78	449	-	-	*85	-
Oct. 31	4,808.41	1,543	+1,094	-	a250	+165
Nov. 30	4,812.25	2,647	+1,104	-	b1,367	+1,117
Dec. 31	4,814.48	3,344	+697	2,172.0	7,994	+6,627
Calendar year 1945	-	-	+569	-	-	+7,257
Jan. 31	4,815.70	3,740	+396	2,170.6	7,679	-515
Feb. 28	4,816.27	3,928	+188	-	b7,193	-486
Mar. 31	4,817.05	4,192	+264	-	b8,282	+1,089
Apr. 30	4,819.04	4,882	+690	-	b8,168	-114
May 31	4,822.59	6,184	+1,302	2,168.4	7,200	-968
June 30	4,820.90	5,550	-634	-	b5,881	-1,319
July 31	4,813.85	3,142	-2,408	-	b2,493	-3,388
Aug. 31	4,806.05	942	-2,200	2,096.6	290	-2,203
Sept.30	4,804.09	508	-434	-	a90	-200
Water year 1945-46	-	-	+59	-	-	+5

* Revised.
a Computed on basis of records of inflow and outflow of reservoir.
b Interpolated.
Note.- Time of reading gages not known.

South Fork Rogue River above Imnaha Creek, near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°42', long. 122°23', in NE¼ sec. 18, T. 33 S., R. 4 E., 300 yards upstream from Imnaha Creek, 400 yards upstream from South Fork diversion dam, and 6 miles southeast of Prospect.

Drainage area.- 52 square miles.

Records available.- October 1931 to September 1946.

Average discharge.- 15 years, 124 second-feet.

Extremes.- Maximum discharge during year, 1,260 second-feet Dec. 28 (gage height, 4.88 feet), from rating curve extended above 200 second-feet; minimum, 51 second-feet Oct. 15, 16, 24-27.
1931-46: Maximum discharge, 2,170 second-feet Dec. 1, 1942 (gage height, 6.21 feet), from rating curve extended above 250 second-feet on basis of former curve well defined to 1,000 second-feet; minimum, 27 second-feet Oct. 1-21, 1931.

Remarks.- Records good except those above 250 second-feet, which are poor. No diversion or regulation above station.

Cooperation.- Water-stage recorder graph furnished by The California Oregon Power Co.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.3	44	2.4	230
1.4	55	2.8	320
1.6	83	3.3	455
1.8	116	3.8	650
2.1	171	4.3	895

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	55	93	315	136	138	138	268	298	145	96	77
2	54	55	86	282	134	134	136	302	300	143	94	77
3	54	54	83	254	130	129	134	350	302	139	93	77
4	53	53	83	295	127	125	132	372	295	136	91	78
5	53	54	80	305	123	125	134	358	282	132	89	77
6	53	55	85	256	121	154	138	358	262	130	89	77
7	52	53	108	248	118	158	141	360	244	127	89	76
8	52	53	94	226	114	167	143	345	242	125	89	74
9	52	85	88	206	113	180	141	332	236	123	88	74
10	52	71	86	194	109	190	138	350	216	120	88	71
11	52	62	86	180	108	220	141	350	208	116	86	71
12	52	60	78	169	102	234	154	348	208	114	86	71
13	52	60	76	162	101	212	171	340	216	113	83	71
14	52	63	76	156	99	186	186	315	226	113	83	71
15	51	70	76	148	99	177	210	308	214	109	83	71
16	52	65	77	143	99	169	234	328	228	108	83	82
17	53	64	72	138	96	163	266	362	216	106	83	76
18	53	70	71	129	96	160	315	380	204	102	82	72
19	53	102	88	125	96	152	332	370	206	101	82	71
20	53	77	70	123	93	145	295	365	214	99	80	70
21	53	70	83	123	93	143	272	390	212	97	80	70
22	54	68	86	160	93	145	260	345	204	97	80	70
23	53	67	86	180	93	143	266	315	196	97	80	68
24	51	70	88	192	96	141	315	285	188	97	78	67
25	51	72	89	196	96	139	370	278	171	96	78	67
26	51	71	99	175	94	139	390	310	163	99	78	67
27	51	109	160	165	134	143	355	365	160	99	77	67
28	55	180	744	158	143	145	338	338	158	96	77	67
29	53	134	795	150	-	145	330	305	154	96	77	65
30	70	108	518	143	-	143	288	288	147	96	77	64
31	58	-	382	138	-	139	-	295	-	96	77	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,652	70	51	53.3	1.02	1.18	3,280
November	2,210	180	53	73.7	1.42	1.58	4,380
December	4,766	795	68	154	2.96	3.41	9,450
Calendar year 1945	49,551	1,060	47	136	2.62	35.44	98,290
January	5,832	315	123	188	3.62	4.17	11,570
February	3,056	143	93	109	2.10	2.19	6,060
March	4,883	234	125	158	3.04	3.49	9,690
April	6,863	390	132	229	4.40	4.91	13,610
May	10,375	390	268	335	6.44	7.42	20,580
June	6,570	302	147	219	4.21	4.70	13,030
July	3,467	145	96	112	2.15	2.48	6,880
August	2,596	96	77	83.7	1.61	1.86	5,150
September	2,156	82	64	71.9	1.38	1.54	4,280
Water year 1945-46	54,428	795	51	149	2.87	38.93	108,000

Imnaha Creek near Prospect, Oreg.

Location.- Staff gage, lat. 42°42', long. 122°23', in NE¼ sec. 18, T. 33 S., R. 4 E., 400 yards upstream from mouth and 6 miles southeast of Prospect.

Drainage area.- 26 square miles.

Records available.- September 1931 to September 1946.

Average discharge.- 15 years, 41.7 second-feet.

Extremes.- Maximum daily discharge during year, 320 second-feet Dec. 29 (gage not read); minimum daily, 19 second-feet Oct. 24-27.
1931-46: Maximum daily discharge, 500 second-feet Feb. 13, 1945 (gage not read), computed on basis of records for South and Middle Forks Rogue River near Prospect; minimum observed, 11 second-feet Dec. 14, 1931 (gage height, 0.46 foot).

Remarks.- Records fair for days when gage was read, poor for other periods. Staff gage read once weekly; discharge for intervening days computed on basis of records for stations on South Fork Rogue River and power canal. No diversion or regulation above station.

Dischsrge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	h20	36	130	53	43	59	80	74	41	h27	21
2	20	20	33	115	53	42	58	h88	74	40	27	21
3	20	20	32	h106	52	41	57	100	75	40	27	21
4	h20	20	36	120	51	40	h56	105	71	h39	26	25
5	20	21	33	125	50	40	58	100	66	39	26	h23
6	20	22	h32	105	49	50	60	100	h63	38	25	23
7	20	21	50	98	h48	h52	61	100	62	38	25	23
8	20	h20	42	92	47	58	62	94	61	37	h25	23
9	20	24	40	87	46	64	61	h88	60	37	24	23
10	h20	26	41	h82	45	70	h59	90	55	36	24	22
11	h20	22	37	78	45	80	h57	90	52	h36	25	22
12	20	23	35	74	44	85	62	88	52	35	24	h22
13	20	22	h31	70	44	80	68	84	h54	34	23	21
14	20	23	29	66	h43	h74	70	78	55	34	22	21
15	20	h26	31	63	42	70	75	76	50	33	h23	21
16	20	24	31	61	42	66	80	h81	54	32	23	25
17	20	23	30	h59	41	64	85	91	49	32	23	24
18	h20	25	29	56	41	62	h91	96	46	h31	23	23
19	20	60	28	h54	41	60	95	94	h47	31	22	h22
20	20	35	h28	52	40	60	84	92	h50	31	22	22
21	20	27	39	51	h40	h62	76	98	51	31	22	22
22	20	h25	38	56	39	60	72	88	50	30	h22	21
23	20	24	39	58	37	59	76	h81	49	29	22	21
24	19	26	41	h61	41	58	90	75	48	29	22	21
25	h19	30	42	63	39	58	h107	72	46	h28	22	21
26	19	28	45	61	38	59	115	82	45	31	21	h21
27	19	40	h50	59	44	60	105	92	h44	29	21	21
28	20	70	300	57	h45	h60	100	85	43	27	21	21
29	20	h50	320	56	-	61	94	75	43	27	h21	21
30	25	41	200	55	-	61	85	h72	42	28	21	20
31	21	-	150	h54	-	60	-	74	-	28	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	622	25	19	20.1	0.773	0.89	1,230
November	858	70	20	28.6	1.10	1.23	1,700
December	1,948	320	28	62.8	2.42	2.79	3,860
Calendar year 1945	17,403	500	19	47.7	1.83	24.90	34,510
January	2,324	130	51	75.0	2.88	3.32	4,610
February	1,240	53	37	44.3	1.70	1.77	2,460
March	1,859	85	40	60.0	2.31	2.66	3,690
April	2,278	115	56	75.9	2.92	3.26	4,520
May	2,709	105	72	87.4	3.36	3.87	5,370
June	1,631	75	42	54.4	2.09	2.33	3,240
July	1,031	41	27	33.3	1.28	1.47	2,040
August	722	27	21	23.3	.896	1.03	1,430
September	658	25	20	21.9	.842	.94	1,310
Water year 1945-46	17,880	320	19	49.0	1.88	25.56	35,460

h Staff gage read on this day.

South Fork power canal near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°43', long. 122°24', in E½ sec. 12, T. 33 S., R. 3 E., 1 mile downstream from head gate at diversion dam and 5 miles southeast of Prospect; electrical-output meter in power plant in W½ sec. 1, T. 33 S., R. 3 E. Datum of gage is about 3,357 feet above mean sea level (levels by The California Oregon Power Co.).

Records available.- April 1932 to September 1946.

Average discharge.- 14 years, 103 second-feet.

Extremes.- Maximum daily discharge during year, 158 second-feet Jan. 10, 14, 17, 22; no flow at times.
1932-46: Maximum daily discharge, 170 second-feet June 18, 1933, Feb. 22, 1936, May 14, 1938, Apr. 4, 5, June 16, 1939; no flow at times.

Remarks.- Records good. Daily discharge computed on basis of electrical output of power plant below station, the relation between electrical output and discharge being based on discharge measurements. This canal, completed in March 1932, diverts water from South Fork Rogue River 200 feet below mouth of Imnaha Creek for use at power plant located in W½ sec. 1, T. 33 S., R. 3 E., from which water may be wasted into Middle Fork Rogue River or mingled with flow of other diversions in Main power canal.

Cooperation.- Water-stage recorder graph and record of electrical output furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	70	127	150	156	156	0	156	156	150	119	92
2	66	68	113	151	156	156	0	155	155	153	116	91
3	64	66	109	150	156	155	0	155	155	154	114	90
4	66	65	118	150	156	156	0	155	155	156	113	96
5	66	70	112	150	156	156	0	154	156	155	112	92
6	63	73	114	150	154	157	0	154	155	154	111	90
7	63	66	154	152	154	156	0	155	155	155	110	90
8	64	65	132	157	146	156	0	155	155	152	110	89
9	62	85	126	157	147	156	0	153	156	152	107	89
10	63	94	126	158	150	156	0	74	155	150	106	86
11	63	76	120	156	145	155	0	0	156	146	107	86
12	63	79	112	156	142	157	0	31	155	145	105	88
13	62	76	106	157	138	156	0	156	155	137	101	82
14	62	82	102	158	137	157	0	150	156	140	95	84
15	62	95	106	157	137	82	62	150	156	138	102	86
16	65	86	104	157	134	0	156	150	156	134	99	104
17	65	81	101	158	130	0	156	156	155	134	99	94
18	65	82	96	157	130	0	155	156	156	133	98	89
19	62	156	91	157	130	0	155	156	155	129	98	85
20	65	98	92	157	126	0	155	156	156	127	94	85
21	64	89	120	157	126	0	155	156	156	127	96	85
22	66	86	118	158	122	0	156	156	156	124	94	85
23	64	84	120	157	120	0	156	156	154	123	97	83
24	62	90	124	157	133	0	156	156	153	122	95	81
25	61	98	126	157	126	0	156	156	154	121	94	81
26	62	94	142	157	127	0	157	156	155	130	93	81
27	63	126	155	157	152	0	157	156	154	126	92	80
28	69	156	154	157	157	0	157	156	155	114	91	79
29	68	156	120	156	-	0	156	156	155	114	93	79
30	92	142	149	156	-	0	156	156	153	121	91	78
31	71	-	151	156	-	0	-	156	-	123	92	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,019	92	61	65.1	4,000
November	2,754	156	65	91.8	5,460
December	3,740	155	91	121	7,420
Calendar year 1945	43,456	158	61	119	86,180
January	4,820	158	150	155	9,560
February	3,943	157	120	141	7,820
March	2,267	157	0	73.1	4,500
April	2,401	157	0	80.0	4,760
May	4,443	156	0	143	8,810
June	4,654	156	153	155	9,230
July	4,239	156	114	137	8,410
August	3,144	119	91	101	6,240
September	2,600	104	78	86.7	5,160
Water year 1945-46	41,024	158	0	112	81,370

Middle Fork Rogue River near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°44', long. 122°24', in NE¼ sec. 1, T. 33 S., R. 3 E., 1,000 feet downstream from diversion dam and intake of Middle Fork power canal and 4½ miles southeast of Prospect. Altitude of gage, 2,620 feet (from river-profile map).

Drainage area.- 57 square miles.

Records available.- May 1925 to September 1946 (include flow of Middle Fork power canal).

Average discharge.- 21 years, 172 second-feet.

Extremes.- Maximum combined discharge of river and canal during year, 2,640 second-feet Dec. 28 (river gage height, 5.2 feet, from floodmark), from rating curve extended above 1,100 second-feet; minimum daily, 107 second-feet Oct. 15.

1925-46: Maximum discharge, 2,760 second-feet Nov. 29, 1942, from rating curve extended above 1,100 second-feet; maximum river gage height, 5.2 feet Nov. 29, 1942, Dec. 28, 1945; minimum discharge, 72 second-feet Aug. 24 to Sept. 5, 1931.

Remarks.- Records fair to Feb. 22, good thereafter. Rating curve for river only defined to 110 second-feet by measurements and to 1,100 second-feet by study of increments of discharge when flow in canal was changed. Flow in river controlled since Nov. 19, 1931, by head gates at diversion dam of power canal which diverts water around station; practically no storage above diversion dam. Figures of discharge include flow of Middle Fork power canal.

Cooperation.- Water-stage recorder graph furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	114	154	398	190	225	192	275	341	226	155	130
2	112	a116	156	364	187	223	189	295	350	232	153	129
3	112	a114	147	335	181	217	184	322	366	228	153	131
4	112	112	154	357	175	206	182	342	347	219	150	132
5	111	119	149	370	173	210	182	339	329	214	148	131
6	110	120	163	338	175	250	182	339	297	211	148	130
7	112	115	172	319	167	239	182	339	288	207	148	130
8	110	113	162	284	163	237	184	325	294	209	148	129
9	111	130	157	262	161	235	183	308	291	205	141	129
10	111	137	157	249	161	239	183	336	267	199	140	128
11	111	125	152	232	159	242	183	332	264	196	140	128
12	113	122	152	221	156	289	189	335	272	197	139	128
13	112	122	141	212	155	285	201	332	286	191	139	127
14	109	127	144	203	154	275	215	313	305	188	138	127
15	107	135	142	197	153	263	239	306	286	182	137	130
16	110	136	136	189	153	249	272	332	286	178	137	150
17	113	138	132	182	154	243	308	366	267	174	137	138
18	113	150	130	176	156	231	354	387	271	171	136	130
19	113	190	130	167	169	219	354	378	290	167	136	127
20	113	135	130	167	161	211	318	375	308	166	135	126
21	114	133	137	165	161	201	292	365	316	165	135	126
22	113	127	146	204	161	201	277	335	298	161	135	126
23	111	131	147	198	161	194	284	307	277	163	135	126
24	110	131	150	246	168	190	324	291	254	161	134	126
25	108	141	151	239	173	187	374	291	238	161	134	126
26	109	144	159	227	175	189	386	384	236	165	133	125
27	111	196	211	220	232	197	350	350	228	162	132	125
28	117	270	910	213	232	204	328	328	229	159	132	124
29	115	222	1,530	202	-	206	323	309	221	157	132	124
30	150	187	604	200	-	201	289	315	221	157	132	124
31	128	-	488	191	-	195	-	331	-	156	131	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	7,513	150	107	113	1.98	2.29	6,970
November	4,252	270	112	142	2.49	2.77	8,430
December	7,593	1,530	130	245	4.30	4.95	15,060
Calendar year 1945	17,388	1,530	105	196	3.44	46.57	141,600
January	7,527	398	165	243	4.26	4.91	14,930
February	4,766	232	153	170	2.98	3.11	9,450
March	6,953	289	187	224	3.93	4.54	13,790
April	7,703	386	182	257	4.51	5.03	15,280
May	10,282	387	275	332	5.82	6 71	20,390
June	8,523	366	221	284	4.98	5.56	16,910
July	5,727	232	156	185	3.25	3.74	11,360
August	4,323	155	131	139	2.44	2.82	8,570
September	3,862	150	124	129	2.26	2.52	7,660
Water year 1945-46	75,024	1,530	107	206	3.61	48.95	148,800

Note.- No river gage-height record Oct. 15-17, 26, 27, 29, Nov. 2, 3, Dec. 29, 30. Mar. 13, Aug. 1 to Sept. 18; discharge computed on basis of range in stage and records for Rogue River and Middle Fork power canal near Prospect.

Middle Fork power canal near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°44', long. 122°24', in NE¼ sec. 1, T. 33 S., R. 3 E., 1,000 feet downstream from head gate at diversion dam and 4½ miles southeast of Prospect. Datum of gage is about 2,632 feet above mean sea level (levels by The California Oregon Power Co.).

Records available.- November 1931 to September 1946.

Average discharge.- 15 years, 109 second-feet.

Extremes.- Maximum daily discharge during year, 158 second-feet Apr. 17, 18; minimum daily, 61 second-feet Nov. 29, 30.
1931-46: Maximum daily discharge, 191 second-feet Feb. 2, 1935; no flow at times.

Remarks.- Records excellent for period Feb. 23 to Sept. 30, good Oct. 1 to Feb. 22, except those for periods of no gage-height record, which are poor. This canal, completed in November 1931, diverts water from Middle Fork Rogue River into Main power canal to supplement flow of Rogue River above Prospect diversion dam.

Cooperation.- Water-stage recorder graph furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	h112	a80	h124	h122	122	156	155	139	a104	137	127
2	112	114	h139	h124	a121	122	156	155	139	105	136	126
3	112	h112	h141	h124	h120	122	155	155	139	87	136	128
4	111	109	a140	a120	a120	122	155	155	139	h104	136	129
5	110	h114	h132	a120	h121	122	155	155	139	a104	137	128
6	110	a115	h135	h124	h121	123	155	155	138	98	137	127
7	111	h112	h131	a123	h120	122	155	155	138	104	138	127
8	110	h110	a131	h123	h120	122	156	155	138	104	138	126
9	111	a124	h131	h122	a120	120	156	155	138	104	138	126
10	110	h131	h131	122	h120	122	156	155	137	104	137	125
11	107	a121	h131	122	a120	122	156	154	137	87	137	125
12	107	a118	a143	h122	h120	122	156	154	137	105	136	125
13	110	a119	h139	h122	h120	121	156	154	138	105	136	124
14	108	h123	h142	121	120	122	157	154	138	104	135	124
15	103	h124	a140	120	120	118	157	153	138	104	134	127
16	a106	h133	h135	120	120	117	157	154	138	110	134	136
17	110	h136	h131	120	h122	116	158	155	137	120	134	131
18	109	a134	h129	120	a124	118	158	154	136	124	133	126
19	109	a106	h129	120	139	118	155	154	137	124	133	125
20	h110	h101	h129	a120	h134	131	148	154	138	124	132	124
21	h112	h129	a135	h120	134	139	152	154	138	124	132	124
22	a111	h124	h143	h122	134	140	157	154	137	125	132	124
23	a110	h129	a130	h121	134	138	157	154	137	132	132	124
24	a109	h129	h123	h124	135	136	157	154	137	132	131	124
25	108	h138	h123	124	136	142	157	154	137	134	131	124
26	106	h140	h123	124	137	152	156	154	137	134	130	123
27	110	h145	h123	h123	129	155	154	154	136	134	129	125
28	h114	a156	a70	a123	122	156	153	153	95	134	129	122
29	a114	61	73	a122	-	156	156	148	104	138	129	122
30	a126	61	124	h122	-	156	154	137	104	139	129	122
31	h126	-	a124	h122	-	156	-	138	-	139	128	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,434	126	103	111	6,810
November	3,580	156	61	119	7,100
December	3,930	143	70	127	7,800
Calendar year 1945	42,651	156	.e	117	84,620
January	3,780	124	120	122	7,500
February	3,505	139	120	125	6,950
March	4,050	156	116	131	8,030
April	4,666	158	148	156	9,250
May	4,744	155	137	153	9,410
June	4,020	139	95	134	7,970
July	3,588	139	87	116	7,120
August	4,146	138	128	134	8,220
September	3,768	136	122	126	7,470
Water year 1945-46	47,211	158	61	129	93,630

a No gage-height record; discharge interpolated, or computed on basis of range in stage and records for Middle Fork Rogue near Prospect.
h Computed from staff-gage readings.

Red Blanket Creek near Prospect, Oreg.

Location.- Staff gage, lat. 42°47', long. 122°26', in NE¼ sec. 23, T. 32 S., R. 3 E., 3 miles northeast of Prospect.

Drainage area.- 40 square miles.

Records available.- May 1925 to September 1946. Prior to October 1928 in NE¼ sec. 34, T. 32 S., R. 3 E.

Average discharge.- 21 years, 104 second-feet.

Extremes.- Maximum discharge during year, 1,460 second-feet Dec. 28 (gage height, 4.40 feet, from floodmark), from rating curve extended above 200 second-feet; minimum daily, 56 second-feet Oct. 9-15.
1925-46: Maximum discharge observed, 1,880 second-feet Nov. 29, 1942 (gage height, 5.1 feet, from floodmark), from rating curve extended above 350 second-feet; minimum observed, 34 second-feet Sept. 3, 4, 25, Oct. 9, 16, 1931.

Remarks.- Records fair for days when gage was read and discharge was not over 250 second-feet, poor for other periods. Gage read only once weekly; discharge for intervening days computed on basis of records for South Fork Rogue River near Prospect and Red Blanket power canal. One diversion above station for irrigation.

Cooperation.- Gage readings furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	69	130	270	h126	h156	128	170	210	156	97	78
2	58	h68	120	240	124	140	124	190	215	155	h96	78
3	58	66	115	220	121	130	121	h215	220	150	95	78
4	58	64	115	h250	118	125	118	230	215	146	95	82
5	h57	67	110	260	115	125	h119	220	210	h143	94	78
6	57	68	120	220	113	140	123	220	205	141	94	h76
7	57	65	h148	210	110	145	126	220	h200	139	93	75
8	57	64	120	190	h107	h148	129	210	195	137	93	74
9	h56	h83	105	175	106	155	123	200	190	135	h92	73
10	56	86	100	165	103	170	119	h215	185	133	91	72
11	56	84	100	h154	102	190	h115	220	180	131	90	71
12	h56	81	96	145	100	210	h122	220	190	h129	88	70
13	56	79	94	140	100	190	125	210	210	127	88	h69
14	56	83	h92	135	99	170	130	195	h226	125	87	71
15	56	88	91	130	h98	h160	145	190	210	122	87	72
16	58	88	92	127	98	155	160	210	220	120	h86	87
17	60	82	88	124	98	150	180	h238	200	118	85	79
18	60	84	85	h122	98	150	210	250	h179	116	85	74
19	h60	110	82	120	98	145	h220	240	190	h114	84	72
20	60	94	84	h119	98	140	190	235	210	112	84	h71
21	61	86	h114	102	98	140	170	260	h210	111	83	72
22	62	83	115	150	h98	h148	165	240	205	110	83	72
23	60	h82	115	170	98	144	170	220	200	109	h82	71
24	59	86	120	185	102	140	200	h205	190	108	82	71
25	59	93	125	h186	101	137	240	200	180	107	82	71
26	h60	93	140	170	100	136	h250	220	170	h106	81	70
27	62	130	250	160	140	137	225	260	165	104	80	h69
28	67	180	h938	155	170	139	215	240	h164	102	79	69
29	65	160	1,000	145	-	h138	210	220	161	101	79	69
30	84	h145	600	135	-	136	185	200	159	100	h78	69
31	71		350	125	-	132	-	h210	-	99	78	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,860	84	56	60.0	1.50	1.73	3,690
November	2,711	180	64	90.4	2.26	2.52	5,380
December	5,954	1,000	82	192	4.80	5.54	11,810
Calendar year 1945	45,493	1,000	56	125	3.12	42.31	90,250
January	5,217	270	119	168	4.20	4.85	10,350
February	3,039	170	98	109	2.72	2.83	6,030
March	4,621	210	125	149	3.72	4.30	9,170
April	4,857	250	115	162	4.05	4.52	9,630
May	6,775	260	170	218	5.45	6.30	13,430
June	5,864	226	159	195	4.88	5.45	11,630
July	3,808	156	99	123	3.08	3.54	7,550
August	2,691	97	78	86.8	2.17	2.50	5,340
September	2,203	87	69	73.4	1.84	2.05	4,370
Water year 1945-46	49,596	1,000	56	136	3.40	46.13	98,380

h Staff gage read on this day.

Red Blanket power canal near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°45', long. 122°27', in SE¼ sec. 27, T. 32 S., R. 3 E., 200 yards downstream from head gate and diversion dam and 2 miles east of Prospect. Datum of gage is 2,612 feet above mean sea level (levels by The California Oregon Power Co.).

Records available.- November 1931 to September 1946.

Average discharge.- 14 years, 66.9 second-feet.

Extremes.- Maximum daily discharge during year, 99 second-feet July 4-10; minimum daily, 54 second-feet Oct. 14.
1931-46: Maximum daily discharge, 106 second-feet July 7-13, 1932; no flow for part of day Sept. 24, 25, 1932.

Remarks.- Records excellent. This canal, completed in October 1932, diverts water from Red Blanket Creek into Main power canal to supplement flow of Rogue River above Prospect diversion dam.

Cooperation.- Water-stage recorder graph furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	65	92	83	93	89	92	86	97	95	92	74
2	57	66	91	83	93	89	92	86	96	97	91	73
3	57	63	94	78	93	89	92	86	96	98	90	75
4	57	60	92	80	92	89	92	86	96	99	90	76
5	57	66	89	80	92	89	92	86	96	99	89	74
6	55	64	89	79	92	89	92	86	96	99	87	72
7	55	63	89	79	92	89	92	86	96	99	86	72
8	56	62	88	78	93	89	93	86	96	99	84	72
9	56	75	88	78	93	89	93	74	96	99	83	71
10	55	83	91	78	93	89	93	86	96	99	83	71
11	55	75	93	83	93	89	93	86	96	98	82	70
12	55	81	92	87	93	88	92	86	96	98	81	70
13	55	78	93	89	94	83	92	86	96	98	81	69
14	54	73	91	92	95	83	92	86	96	98	81	70
15	55	86	90	92	95	82	92	86	96	98	81	72
16	56	86	89	92	95	81	92	86	97	98	79	85
17	58	81	86	93	94	81	92	86	96	97	78	76
18	58	81	83	94	94	81	92	86	96	97	77	72
19	58	92	81	94	94	81	93	86	95	97	76	69
20	58	90	81	94	95	81	92	86	95	97	76	71
21	59	83	92	94	95	81	92	86	95	97	75	72
22	60	79	95	90	94	86	92	85	95	97	76	72
23	58	79	96	87	94	93	92	85	95	97	76	71
24	57	84	92	84	94	93	92	84	95	96	75	70
25	56	92	90	81	94	94	92	84	95	95	74	70
26	57	92	90	81	95	95	93	84	95	95	74	70
27	61	92	91	82	92	95	93	84	95	95	74	69
28	65	88	89	85	90	95	92	85	95	94	73	69
29	64	84	78	87	-	94	90	85	95	94	73	69
30	82	90	76	90	-	93	88	88	95	94	73	69
31	69	-	76	93	-	92	-	97	-	94	73	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,812	82	54	58.5	3,590
November	2,353	92	60	78.4	4,670
December	2,747	96	76	88.6	5,450
Calendar year 1945	28,848	96	10	79.0	57,220
January	2,660	94	78	85.8	5,280
February	2,616	95	90	93.4	5,190
March	2,731	95	81	88.1	5,420
April	2,761	93	88	92.0	5,480
May	2,655	97	74	85.6	5,270
June	2,870	97	95	95.7	5,690
July	3,007	99	94	97.0	5,960
August	2,483	92	73	80.1	4,920
September	2,155	85	69	71.8	4,270
Water year 1945-46	30,850	99	54	84.5	61,190

Main power canal below all feeders, near Prospect, Oreg.

Location.- Water-stage recorder, lat. 42°45', long. 122°28', in SW¼ sec. 28, T. 32 S., R. 3 E., 0.8 mile downstream from outlet of Red Blanket power canal, 1 mile east of Prospect, and 1.6 miles upstream from diversion dam on Rogue River. Datum of gage is 2,599.0 feet above mean sea level, datum of 1929.

Records available.- November 1931 to September 1946.

Average discharge.- 14 years (1932-46), 268 second-feet.

Extremes.- Maximum daily discharge during year, 375 second-feet Jan. 17-19; minimum daily, 130 second-feet. Nov. 29.
1931-46: Maximum daily discharge, 423 second-feet June 23-28, 1936; no flow at times.

Remarks.- Records good except those below 200 second-feet, which are fair. This canal, completed in November 1931, carries water diverted from South and Middle Forks Rogue River and Red Blanket Creek into Rogue River above Prospect diversion dam.

Cooperation.- Water-stage recorder graph furnished by The California Oregon Power Co.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	242	252	301	260	348	306	253	250	351	356	349	309
2	241	258	344	262	348	295	254	250	349	363	348	308
3	240	247	344	256	348	306	254	250	349	346	346	312
4	238	240	353	256	348	306	254	252	349	364	344	320
5	238	256	332	254	348	306	254	250	348	364	342	314
6	235	252	334	252	351	306	254	252	348	356	341	309
7	234	244	287	254	366	306	254	252	348	361	341	306
8	236	240	266	259	363	306	254	250	348	361	339	303
9	236	290	258	258	359	304	254	236	348	359	337	301
10	236	309	294	256	364	306	253	224	348	356	334	300
11	236	277	344	260	359	306	253	248	346	332	330	298
12	235	296	344	308	356	304	254	248	346	346	329	296
13	235	279	342	370	354	300	254	247	346	344	327	295
14	232	285	334	371	353	300	254	247	346	344	312	296
15	229	312	334	371	349	243	254	247	346	341	327	304
16	234	308	329	371	346	200	256	247	344	346	322	339
17	238	293	319	375	344	200	256	247	344	354	320	312
18	234	304	311	375	344	201	256	248	344	356	320	301
19	232	277	303	375	348	202	254	248	344	353	317	295
20	234	284	306	373	356	214	248	247	344	351	314	292
21	242	300	346	373	356	222	248	247	341	349	311	292
22	242	292	354	325	353	229	254	247	341	353	312	288
23	238	286	342	284	353	234	256	247	341	356	314	285
24	234	301	282	284	361	232	258	252	339	354	312	284
25	232	329	282	277	361	238	258	264	334	354	311	282
26	229	325	300	276	354	254	258	265	339	361	309	280
27	236	316	316	276	316	256	256	266	339	259	308	280
28	254	177	228	279	308	256	256	295	324	349	308	279
29	248	130	192	280	-	256	254	346	361	344	309	274
30	295	168	244	285	-	254	250	339	359	356	311	274
31	266	-	256	319	-	253	-	351	-	358	311	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,431	295	229	240	14,740
November	8,129	329	130	271	16,120
December	9,521	354	192	307	18,880
Calendar year 1945	99,594	385	36	273	197,500
January	9,375	375	252	302	18,600
February	9,814	366	308	350	19,470
March	8,201	306	200	265	16,270
April	7,625	258	248	254	15,120
May	8,059	351	224	260	15,980
June	10,354	361	324	345	20,540
July	10,946	364	332	353	21,710
August	10,055	349	308	324	19,940
September	8,928	339	274	298	17,710
Water year 1945-46	108,438	375	130	297	215,100

Big Butte Creek near McLeod, Oreg.

Location.- Staff gage, lat. 42°39', long. 122°41', in NW¼ sec. 3, T. 34 S., R. 1 E., at bridge on county road 1 mile upstream from mouth and 1 mile south of McLeod.

Records available.- October 1945 to September 1946.

Extremes.- Maximum discharge during year, 3,050 second-feet Dec. 28 (gage height, 7.2 feet, from graph based on gage readings); minimum, 77 second-feet Aug. 15-29, Sept. 7-10, 13, 14 (gage height, 1.46 feet).

Remarks.- Records good except those for periods of no gage-height record, which are fair. Slight regulation by fish hatchery 200 yards above station. Several diversions in vicinity of Butte Falls, the two largest being the city of Medford diversion and Eagle Point Irrigation District Canal.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

1.5	83	2.5	382	4.6	1,195
1.7	129	2.8	485	5.3	1,560
1.9	187	3.3	660	6.0	2,030
2.2	282	3.9	890	6.8	2,690

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a90	187	379	830	464	890	541	282	187	119	83	80
2	a90	166	335	1,230	450	874	524	275	172	119	83	80
3	a90	169	308	918	a436	822	510	262	175	119	83	80
4	a90	163	365	1,260	423	730	485	266	157	114	80	80
5	a90	169	332	1,530	409	720	471	262	157	112	80	80
6	a90	233	341	1,200	478	786	485	256	154	119	83	80
7	a130	.172	548	1,730	541	738	471	252	154	104	83	77
8	a160	175	443	1,100	419	709	454	246	143	104	80	77
9	a160	227	385	882	409	656	443	243	129	104	80	77
10	a160	286	423	790	406	642	423	233	129	104	80	77
11	160	239	430	678	382	625	416	223	129	100	80	80
12	160	312	392	597	358	1,060	389	217	129	100	80	80
13	160	243	292	534	328	1,230	382	217	129	96	80	77
14	160	208	292	527	318	1,020	406	208	140	96	80	77
15	157	298	279	478	348	1,040	392	202	129	91	77	91
16	169	332	322	450	358	830	385	193	151	91	77	96
17	166	338	325	416	348	798	382	187	129	96	77	96
18	163	279	285	409	368	774	396	184	129	96	77	91
19	163	790	269	382	382	738	379	a184	129	91	77	91
20	160	436	266	375	416	695	368	184	124	91	77	91
21	166	332	298	385	492	646	355	175	129	83	77	87
22	163	a280	328	586	485	639	341	249	a128	83	77	87
23	163	243	345	597	485	590	318	217	a127	87	77	87
24	160	243	389	874	541	590	318	211	a126	83	77	87
25	160	499	423	826	656	548	335	187	a125	87	77	87
26	160	457	678	681	625	524	318	193	a124	83	77	87
27	166	838	g810	628	1,090	516	315	199	a122	83	77	87
28	172	1,200	g2,760	664	1,010	576	315	249	a121	83	77	87
29	172	706	g2,350	636	-	639	335	266	a120	83	77	83
30	205	488	a1,500	516	-	608	308	199	119	83	80	83
31	205	-	1,060	488	-	552	-	187	-	83	80	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,660	205	90	150	9,240
November	10,688	1,200	163	356	21,200
December	17,952	2,760	266	579	35,610
Calendar year	-	-	-	-	-
January	23,177	1,730	365	748	45,970
February	13,425	1,090	318	479	26,830
March	22,805	1,230	516	736	45,230
April	11,960	541	308	399	23,720
May	6,908	282	175	223	13,700
June	4,116	187	119	137	8,160
July	2,987	119	83	96.4	5,920
August	2,450	83	77	79.0	4,860
September	2,520	96	77	84.0	5,000
Water year 1945-46	123,648	2,760	77	339	245,200

a No gage-height record; discharge computed on basis of records for Elk Creek near Trail and South Fork Big Butte Creek near Butte Falls.
g Computed from graph based on gage readings.

South Fork Big Butte Creek near Butte Falls, Oreg.

Location.- Water-stage recorder, lat. 42°32', long. 122°33', in SW¼ sec. 11, T. 35 S., R. 2 E., just downstream from Ginger Creek and 1 mile east of Butte Falls.

Records available.- September 1910 to October 1911, August to October 1915, October 1917 to September 1922, March 1925 to September 1946. August 1922 to March 1925 at site at Butte Falls.

Average discharge.- 30 years (1910-11, 1917-46), 156 second-feet.

Extremes.- Maximum discharge during year, 1,320 second-feet Dec. 28 (gage height, 2.89 feet); minimum, 70 second-feet Oct. 11 (gage height, 0.61 foot).
1910-11, 1915, 1917-46: Maximum discharge, 2,470 second-feet Feb. 20, 1927 (gage height, 4.05 feet), from rating curve extended above 1,600 second-feet; minimum, 39 second-feet Oct. 14, 1931 (gage height, 0.32 foot).

Remarks.- Records good except those for Nov. 28 to Dec. 28, June 5-24, which are fair. Diversions above station for irrigation, and since 1927 for Medford municipal supply. No regulation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 27)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
0.6	78	1.0	185	1.6	455	0.7	93	1.2	243	1.8	565
.7	101	1.2	257	1.9	640	.8	117	1.4	334	2.0	695
.8	126	1.4	347	2.2	840	1.0	172	1.6	445	2.3	900

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	78	185	404	220	428	252	205	140	105	87	82
2	76	78	163	439	220	399	239	195	135	105	87	82
3	74	78	148	416	205	382	232	198	130	103	87	82
4	76	78	163	493	198	339	224	198	127	103	87	85
5	74	83	154	650	188	324	220	198	127	100	85	85
6	74	87	160	523	198	371	216	195	130	95	82	82
7	a74	85	227	610	192	366	216	195	125	98	82	80
8	74	83	199	493	175	350	220	188	122	100	82	80
9	72	96	178	422	169	324	224	182	122	98	82	78
10	74	108	182	376	169	324	216	179	120	93	85	a78
11	74	106	170	320	163	320	205	179	112	93	85	a78
12	74	134	160	282	158	451	205	172	110	93	85	a78
13	74	114	146	260	155	565	228	169	110	91	85	a78
14	74	99	137	247	155	499	228	166	117	93	82	a78
15	72	118	140	232	158	475	228	163	112	93	85	a80
16	74	134	151	216	155	428	232	158	122	93	87	a89
17	76	143	140	205	152	422	235	155	122	93	87	89
18	74	132	129	192	163	393	252	152	112	93	87	87
19	74	282	126	185	175	371	256	149	110	93	87	87
20	74	182	126	179	198	355	243	146	112	91	82	85
21	76	143	137	172	228	324	235	188	112	91	80	85
22	76	124	137	256	232	324	224	172	107	91	82	85
23	76	114	148	282	228	305	220	169	110	91	82	82
24	74	114	151	329	264	305	220	158	112	91	85	82
25	74	129	160	360	329	282	228	155	112	89	85	82
26	74	157	205	320	320	264	235	155	110	93	82	82
27	76	232	265	300	439	264	228	166	110	91	82	82
28	78	342	865	282	469	286	220	166	107	87	82	85
29	76	286	900	269	-	310	228	158	107	89	82	82
30	94	219	591	243	-	286	216	149	107	89	82	80
31	83	-	481	228	-	264	-	143	-	89	85	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,341	94	72	75.5	4,640
November	4,158	342	78	139	8,250
December	7,225	900	126	233	14,330
Calendar year 1945	62,976	900	72	173	124,900
January	10,185	650	172	329	20,200
February	6,075	469	152	217	12,050
March	11,100	565	264	358	22,020
April	6,825	256	205	228	13,540
May	5,321	205	143	172	10,550
June	3,511	140	107	117	6,960
July	2,917	105	87	94.1	5,790
August	2,607	87	80	84.1	5,170
September	2,470	89	78	82.3	4,900
Water year 1945-46	64,735	900	72	177	128,400

a Nc gage-height record; discharge computed on basis of weather records and records for South Fork Little Butte Creek near Lake Creek.

Elk Creek near Trail, Oreg.

Location.- Staff gage, lat. 42°40', long. 122°45', in SW¼ sec. 30, T. 33 S., R. 1 E., 0.7 mile upstream from mouth and 3½ miles northeast of Trail. Prior to July 5, 1946, staff gage at site 2,000 feet upstream at different datum.

Drainage area.- 133 square miles.

Records available.- November 1945 to September 1946.

Extremes.- Maximum gage height during year, 13.5 feet Dec. 28, from floodmark (discharge not determined); minimum, 0.9 second-foot Aug. 29 (gage height, 0.38 foot).

Remarks.- Records fair. No regulation. Several diversions above station for irrigation.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	334		-	808	269	144	61	18	3.5	1.1
2		-	237		-	608	250	147	59	a16	3.8	1.2
3		-	192	1,070	-	592	226	161	55	a14	3.4	1.1
4		-	464		-	509	207	172	53	a12	3.0	2.2
5		-	592		-	468	199	167	53	a11	2.8	1.9
6		-	707		-	632	191	159	54	10	2.4	2.4
7		-	1,250		-	562	189	151	50	11	2.2	2.8
8		-	727		-	465	199	146	45	13	2.0	2.4
9		-	464		-	429	187	137	43	14	2.0	2.2
10		71	494		-	432	180	134	41	11	1.9	1.8
11		99	443		-	390	172	125	38	10	1.9	1.5
12		118	326		-	772	191	122	33	8.8	1.8	1.4
13		148	261		-	1,310	263	119	32	7.4	1.6	1.8
14		131	203		-	798	269	111	40	8.1	1.4	2.8
15		a350	174		-	628	276	105	38	7.0	1.3	4.0
16		a330	192		-	500	281	99	32	8.1	1.2	4.2
17		a450	214		-	497	285	100	31	7.0	1.4	4.2
18		a370	214		377	488	316	98	32	7.8	1.3	5.2
19		a900	192		335	443	283	94	28	7.0	1.2	3.4
20		a450	140		451	387	250	94	23	5.8	1.0	2.8
21		247	226		555	345	217	98	24	4.0	1.1	3.0
22		a230	261		530	330	191	88	21	3.5	1.0	3.2
23		214	373		457	309	195	81	23	4.2	1.1	3.4
24		237	702		516	288	209	72	30	3.8	1.2	3.4
25		261	985		580	258	250	72	22	3.8	1.3	3.0
26		446	1,340		497	247	245	82	22	3.5	1.1	2.8
27		1,040	-		1,430	290	211	87	21	5.8	1.2	3.2
28		1,400	-		1,080	316	189	83	21	5.2	1.4	3.4
29		887	2,670		-	372	185	78	21	4.8	.9	3.4
30		502	-		-	347	159	72	18	4.2	1.1	3.0
31		-	-		-	299	-	65	-	3.5	1.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	-	-	-	-	-	-	-
November 10-30	8,881	1,400	71	423	3.18	2.48	17,620
December	-	-	-	-	-	-	-
Calendar year	-	-	-	-	-	-	-
January	-	-	-	-	-	-	-
February 1-28	6,808	1,430	335	619	4.65	1.90	13,500
March	15,119	1,310	247	488	3.67	4.23	29,990
April	6,734	316	159	224	1.68	1.88	13,360
May	3,463	172	65	112	.842	.97	6,870
June	1,064	61	18	35.5	.267	.30	2,110
July	253.3	18	3.5	8.17	.061	.07	502
August	53.5	3.8	.9	1.73	.013	.01	106
September	82.2	5.2	1.1	2.74	.021	.02	163
Water year	-	-	-	-	-	-	-

a No gage-height record; discharge computed on basis of records for Big Butte Creek near McLeed.

South Fork Little Butte Creek near Lake Creek, Oreg.

Location.- Water-stage recorder, lat. 42°25', long. 122°36', in SE¼ sec. 29, T. 36 S., R. 2 E., a quarter of a mile upstream from intake of Rogue River Valley Canal and 1½ miles southeast of Lake Creek post office.

Records available.- April 1921 to September 1946. November 1910 to April 1913 at site in sec. 11, T. 37 S., R. 2 E., 5 miles above Lake Creek.

Average discharge.- 26 years (1911-12, 1921-46), 96.3 second-feet.

Extremes.- Maximum discharge during year, 1,620 second-feet Dec. 28 (gage height, 4.53 feet), from rating curve extended above 300 second-feet by logarithmic plotting; minimum, 12 second-feet Aug. 20 (gage height, 1.25 feet).
1910-13, 1921-46: Maximum discharge, 2,870 second-feet Jan. 21, 1943 (gage height, 5.77 feet, from floodmark), from rating curve extended above 400 second-feet by logarithmic plotting; minimum, 2 second-feet Aug. 10, 1931 (gage height, 0.97 foot).

Remarks.- Records good except those for Nov. 7 to Jan. 7, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	25	118	206	112	198	186	292	115	35	21	15
2	18	22	91	270	115	194	172	284	106	34	20	15
3	18	21	80	222	100	190	160	292	100	32	18	15
4	18	21	187	234	97	175	153	302	94	30	18	17
5	18	24	127	325	100	190	157	302	88	28	18	18
6	18	27	130	238	150	292	153	292	94	27	18	18
7	17	a27	179	320	136	270	160	292	83	27	19	18
8	16	a27	140	246	103	250	164	284	74	28	20	18
9	17	a33	105	194	97	238	157	274	70	30	18	16
10	18	a41	108	175	91	242	150	270	67	27	17	15
11	16	a40	88	136	83	230	153	262	62	26	17	15
12	17	a52	73	118	74	310	175	258	58	26	16	15
13	18	a43	59	106	70	459	198	250	56	25	15	15
14	17	a40	52	100	72	325	226	238	58	24	15	15
15	17	h47	54	91	76	320	254	222	58	24	15	16
16	17	a60	59	83	83	279	284	214	67	23	15	20
17	19	a65	54	79	86	302	330	210	60	24	15	19
18	18	a65	49	76	100	266	380	210	53	23	15	17
19	18	a250	45	72	112	250	395	202	50	21	14	16
20	18	a120	47	72	106	230	375	202	45	21	14	16
21	18	75	52	67	106	210	350	262	44	21	15	18
22	19	70	73	118	97	222	320	226	43	21	15	17
23	19	64	91	153	91	195	315	206	45	20	16	16
24	18	70	80	268	109	190	325	179	45	20	15	15
25	18	124	86	270	139	172	355	164	44	20	15	15
26	18	111	121	198	128	186	375	175	42	23	16	15
27	18	212	195	175	238	218	355	175	39	24	16	15
28	19	336	1,040	157	242	234	335	160	38	23	15	16
29	19	266	699	146	-	254	340	146	38	22	15	15
30	40	161	375	128	-	218	315	128	36	24	15	15
31	30	-	262	112	-	194	-	118	-	25	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	587	40	16	18.9	1,180
November	2,539	336	21	84.8	5,040
December	4,919	1,040	45	159	9,760
Calendar year 1945	46,534	1,040	14	127	92,300
January	5,155	325	67	166	10,220
February	3,113	242	70	111	6,170
March	7,506	459	172	242	14,890
April	7,767	395	150	259	15,410
May	7,091	502	118	229	14,080
June	1,870	115	36	62.3	3,710
July	778	35	20	25.1	1,540
August	506	21	14	16.3	1,000
September	484	20	15	16.1	960
Water year 1945-46	42,315	1,040	14	116	83,920

a Nc gage-height record; discharge computed on basis of records for North Fork Little Butte Creek near Lake Creek and South Fork Big Butte Creek near Butte Falls.
h Computed from staff-gage reading.

Little Butte Creek below Eagle Point, Oreg.

Location.- Staff gage, lat. 42°27'45", long. 122°48'45", in SW¼ sec. 3, T. 36 S., R. 1 W., 300 feet upstream from State Highway 62, 1 mile southwest of Eagle Point, and 3½ miles upstream from mouth.

Records available.- May 1924 to September 1926 (irrigation season only), October 1945 to September 1946. July 1907 to April 1916 at site 2½ miles upstream.

Extremes.- Maximum gage height during year, 8.5 feet, from floodmark (discharge not determined); minimum discharge observed, 10 second-feet (regulated) July 5, 22.
1907-16, 1924-26, 1945-46: Maximum discharge observed, 5,280 second-feet Feb. 17, 1912 (gage height, 9.4 feet, site and datum then in use), probably higher Dec. 28, 1945; minimum observed, 5.1 second-feet Sept. 18, 1924.

Remarks.- Records good except those for periods of no gage-height record, those for Mar. 12 to May 17, and those above 1,500 second-feet, which are poor. Gage read once daily July 1 to Sept. 30; twice daily Oct. 26 to May 17. Flow regulated by Fish Lake Reservoir. Diversions above station for irrigation. Since September 1923 water has been diverted by Cascade Canal from Fourmile Lake, in Klamath River Basin, into Fish Lake Basin.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	66	a210	424	254	408	328	282		17	20	18
2	-	64	a180	1,080	289	365	336	276		14	14	a17
3	-	64	a170	686	241		309	263		14	11	18
4	-	56	319	546	223		289	251		11	a12	21
5	-	51	220	1,030	212		266	260		10	13	22
6	-	74	189	515	575		254	276		11	14	21
7	-	71	408	1,250	447	a430	223	292		a12	16	18
8	-	66	350	600	292		229	273		13	16	a18
9	-	88	214	416	260		238	220		18	16	19
10	-	115	254	379	232		232	220		19	15	14
11	-	128	195	302	229		223	209		13	a14	14
12	-	273	154	254	192	700	228	206		15	14	14
13	-	128	128	226	176	956	260	195		12	14	16
14	-	90	112	209	176	455	295	197		a12	13	17
15	-	138	110	195	197	700	319	168		12	17	a21
16	-	132	178	178	217	503	350	151		11	18	25
17	-	212	156	173	212	967	383	134		14	14	22
18	-	134	123	159	244	641	427	-		13	a14	24
19	-	659	110	154	244	528	435	-		14	14	21
20	-	276	110	154	238	491	416	-	15	16	12	17
21	45	173	121	147	232	401	375	-		a13	12	17
22	-	145	d135	559	229	431	350	-		10	14	a18
23	-	132	151	435	206	375	333	-		14	20	19
24	-	117	159	1,070	229	368	309	-		16	17	19
25	-	356	166	731	306	319	312	-		15	a16	17
26	54	381	354	420	276	299	316	-		15	15	15
27	54	758	475	368	880	316	333	-		26	13	17
28	53	1,020	3,550	350	628	408	350	-		21	16	20
29	54	605	1,280	338	-	580	323	-		20	13	a19
30	93	495	650	309	-	439	309	-		16	18	18
31	66	-	515	263	-	350	-	-		25	20	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-	-	-	-
November	7,047	1,020	51	235	13,980
December	11,446	3,550	110	389	22,700
Calendar year	-	-	-	-	-
January	13,918	1,250	147	449	27,610
February	8,136	880	176	291	18,140
March	14,850	967	299	479	29,450
April	9,346	435	223	312	18,540
May 1-17	3,873	292	134	228	7,680
June	-	-	-	-	-
July	462	26	10	14.9	916
August	465	20	11	15.0	922
September	556	25	14	18.5	1,100
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of records for South Fork Little Butte Creek near Lake Creek and North Fork Little Butte Creek near Lake Creek.
d Doubtful gage-height record; discharge computed as explained in footnote a.

North Fork Little Butte Creek at Fish Lake, near Lake Creek, Oreg.

Location.- Water-stage recorder, lat. 42°23', long. 122°21', in S½ sec. 4, T. 37 S., R. 4 E., half a mile downstream from outlet of Fish Lake and 18 miles east of Lake Creek post office.

Drainage area.- 18 square miles.

Records available.- October 1914 to September 1946.

Average discharge.- 31 years (1915-46), 32.7 second-feet.

Extremes (regulated).- Maximum discharge during year, 149 second-feet July 4 (gage height, 1.70 feet); minimum, 0.5 second-foot Oct. 11-22.
1914-46: Maximum discharge, 158 second-feet July 10, 1930; no flow at times.

Remarks.- Records good except those for Oct. 29 to July 31, which are fair, and those for Oct. 10-28, which are poor. Flow regulated by Fish Lake Reservoir. Since September 1923 water has been diverted by Cascade Canal from Fourmile Lake, in Klamath River Basin, into Fish Lake Basin. No diversion from creek above station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 5 to Aug. 9)

0.0	0.7	0.5	7.2	1.1	50
.1	1.5	.6	11	1.3	77
.2	2.4	.7	15	1.5	110
.3	3.5	.8	21		
.4	5.0	.9	29		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	2.0	7.5	13	15	15	17	34	41	90	120	87
2	35	2.0	8.0	13	15	15	17	35	40	91	118	83
3	33	2.5	8.0	13	15	15	17	37	40	93	116	82
4	32	2.5	8.0	13	15	15	17	38	39	98	114	80
5	33	3.0	8.0	13	15	a15	18	38	39	98	116	80
6	33	3.0	8.5	13	15	a15	18	39	38	102	118	79
7	33	3.0	9.0	13	15	15	18	39	38	103	116	76
8	18	3.0	9.0	13	15	15	19	39	38	103	116	73
9	1.5	3.5	9.0	13	15	15	a19	39	38	102	118	70
10	a1.0	3.5	9.5	14	15	16	a19	39	39	102	120	a68
11	h.5	4.0	9.5	14	15	16	a19	40	38	102	121	66
12	a.5	4.0	9.5	14	15	16	a19	40	51	102	121	64
13	a.5	4.0	9.5	a14	15	a16	19	41	62	102	118	62
14	a.5	4.5	9.5	14	15	16	19	41	62	102	118	59
15	a.5	4.5	9.5	14	15	16	19	41	63	102	118	56
16	a.5	4.5	a10	14	15	16	20	41	56	103	118	55
17	a.5	5.0	10	14	15	16	21	41	53	108	114	54
18	h.5	5.0	10	14	15	16	23	42	54	110	116	53
19	a.5	5.5	11	14	15	16	23	42	63	110	116	51
20	a.5	5.5	11	14	15	16	23	42	80	110	116	50
21	a.5	5.5	11	14	15	16	23	43	83	112	116	48
22	h.5	6.0	11	14	15	16	24	43	85	116	116	47
23	a1.0	6.0	12	15	15	16	25	42	87	116	a113	46
24	h1.0	6.5	12	15	15	17	27	42	a86	116	a110	44
25	a1.0	7.0	12	a15	15	17	28	42	a84	116	a106	43
26	a1.0	7.0	12	15	15	17	29	42	83	116	103	43
27	a1.5	7.0	12	15	15	a17	30	42	85	116	100	43
28	a1.5	7.0	12	15	15	17	31	42	88	116	96	42
29	1.5	7.5	a12	15	-	17	33	41	88	114	95	41
30	2.0	7.5	a13	15	-	17	33	41	90	116	91	40
31	2.0	-	13	15	-	17	-	41	-	116	90	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	274.0	36	0.5	8.84	543
November	141.5	7.5	2.0	4.72	281
December	316.0	13	7.5	10.2	627
Calendar year 1945	13,211.4	135	.5	36.2	28,210
January	434	15	13	14.0	861
February	420	15	15	15.0	833
March	495	17	15	16.0	982
April	667	33	17	22.2	1,320
May	1,249	43	34	40.3	2,480
June	1,831	90	38	61.0	3,630
July	3,303	116	90	107	6,550
August	3,484	121	90	112	6,910
September	1,785	87	40	59.5	3,540
Water year 1945-46	14,399.5	121	.5	39.5	28,560

a No gage-height record; discharge interpolated.
h Computed from staff-gage reading.

North Fork Little Butte Creek near Lake Creek, Oreg.

Location.- Water-stage recorder, lat. 42°24', long. 122°32', in SW¼ sec. 25, T. 36 S., R. 2 E., a quarter of a mile upstream from point of diversion of Hanley South Canal and 4½ miles east of Lake Creek post office. Datum of gage is 2,125.01 feet above mean sea level, datum of 1929.

Records available.- September 1911 to March 1913 (incomplete), May 1922 to September 1928 (incomplete), and October 1931 to September 1946 in reports of Geological Survey. September 1911 to March 1913 and May 1922 to September 1936 in reports of State engineer.

Average discharge.- 20 years (1911-12, 1922-23, 1928-46), 66.4 second-feet.

Extremes.- Maximum discharge during year, 215 second-feet Mar. 13 (gage height, 2.28 feet); minimum, 20 second-feet Oct. 13-16, 24-27 (gage height, 1.47 feet).
1911-13, 1922-28, 1931-46: Maximum discharge, 680 second-feet Dec. 30, 1924 (gage height, 3.30 feet), from rating curve extended above 170 second-feet; minimum, 11 second-feet (computed on basis of records for station at Fish Lake, near Lake Creek) Oct. 29 to Nov. 8, 1931.

Remarks.- Records good except those for period of no gage-height record, which are fair. Flow regulated by Fish Lake Reservoir. Small diversions above station for irrigation; some water diverted into Fish Lake from Fourmile Lake, in Klamath River Basin, since September 1923.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 28 to Dec. 27, Mar. 13 to Apr. 11, June 22)

Oct. 1 to June 22				June 23 to Sept. 30			
1.5	22	1.9	77	1.8	51	2.1	116
1.6	30	2.0	103	1.9	68	2.2	148
1.7	41	2.1	134	2.0	89	2.3	186
1.8	56						

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	23	41	54	52	69	66	75	68	122	163	108
2	53	23	39	62	52	66	64	75	66	129	159	105
3	53	23	39	60	50	75	62	77	66	129	156	102
4	52	23	47	69	48	75	60	77	86	135	145	100
5	50	27	42	93	48	82	58	80	66	138	152	100
6	48	25	47	69	52	98	58	80	66	142	145	94
7	48	25	58	80	50	87	58	80	66	138	156	92
8	41	25	52	64	48	80	58	80	64	142	156	89
9	22	29	48	58	48	77	58	80	64	142	156	87
10	21	32	48	56	48	77	58	82	62	142	156	85
11	21	31	47	52	47	77	56	82	60	142	156	81
12	21	40	44	50	46	112	60	82	73	132	152	78
13	21	31	42	50	46	141	64	82	90	135	145	76
14	20	29	41	50	47	100	62	80	90	138	145	74
15	20	30	42	48	50	109	62	80	90	142	145	72
16	21	33	44	47	48	95	84	77	85	145	145	74
17	22	33	41	46	50	100	66	77	80	156	142	70
18	21	53	41	46	53	93	66	75	77	159	152	68
19	21	a60	41	46	56	90	66	75	87	163	142	66
20	21	a50	41	46	56	87	68	77	112	159	142	65
21	21	37	42	44	58	82	66	90	115	159	145	63
22	21	36	46	60	56	82	66	77	114	171	145	61
23	21	34	46	58	56	77	66	75	119	171	142	60
24	21	36	46	77	62	77	66	73	116	171	138	58
25	20	41	48	75	64	75	69	73	113	167	135	58
26	20	40	53	66	62	73	69	73	113	167	135	58
27	21	54	60	62	82	71	71	73	113	163	129	56
28	22	64	122	60	75	73	73	71	116	167	126	56
29	22	56	82	56	-	75	77	71	122	163	119	56
30	27	46	66	54	-	71	75	69	119	175	113	54
31	23	-	60	53	-	69	-	69	-	167	111	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	889	53	20	28.7	1,760
November	1,089	64	23	36.3	2,160
December	1,556	122	39	50.2	3,090
Calendar year 1945	26,308	164	20	72.1	52,180
January	1,811	93	44	58.4	3,590
February	1,510	82	46	53.9	3,000
March	2,615	141	66	84.4	5,190
April	1,930	77	56	64.3	3,830
May	2,387	90	69	77.0	4,730
June	2,656	122	60	88.5	5,270
July	4,671	175	122	151	9,260
August	4,448	163	111	143	8,820
September	2,266	108	54	75.5	4,490
Water year 1945-46	27,828	175	20	76.2	55,190

a No gage-height record; discharge computed on basis of records for South Fork Big Butte Creek near Butte Falls.

Diversions from Little Butte Creek near Lake Creek, Oreg.

The following canals divert water from Little Butte Creek and its tributaries near Lake Creek post office:

Hanley South and Hanley North Canals, from North Fork in SW¼ sec. 26, T. 36 S., R. 2 E. Water used for irrigation of land on both sides of Little Butte Creek near Lake Creek.

Rogue River Valley Canal, from South Fork in SE¼ sec. 29, T. 36 S., R. 2 E., and from North Fork in NE¼ sec. 20, T. 36 S., R. 2 E. Water used for irrigation of about 15,000 acres of land, chiefly in Bear Creek Basin, on both sides of that creek below Phoenix.

Eagle Point Canal, from main stream in SE¼ sec. 31, T. 35 S., R. 1 E. Water used for irrigation of lands near Eagle Point.

Records for Hanley South and North Canals and Eagle Point Canal are partly estimated.

Records for these canals, published as a group, are available from April 1929 to September 1946; records of some of the canals published separately prior to 1929.

Many smaller canals divert from Little Butte Creek and its tributaries.

Diversions, in acre-feet, water year October 1945 to September 1946

Month	Hanley South Canal	Hanley North Canal	Rogue River Valley Canal below junction of intakes	Eagle Point Canal
October	a87	b207	c1,050	b359
November	-	-	-	-
December	-	-	-	-
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	-	d293	e3,100	f456
May	g206	536	7,610	1,210
June	413	493	7,250	1,030
July	388	598	8,070	1,010
August	375	615	7,580	964
September	362	592	4,300	928
Water year	-	-	-	-

a Oct. 1-8.
b Oct. 1-15.
c Oct. 1-22.
d Apr. 16-30.
e Apr. 5-30.
f Apr. 12-30.
g May 18-31.

Emigrant Creek near Ashland, Oreg.

Location.- Water-stage recorder, lat. 42°10', long. 122°36', in sec. 20, T. 39 S., R. 2 E., 500 feet downstream from Emigrant Gap Reservoir Dam and 6 miles southeast of Ashland.

Records available.- January 1920 to September 1946.

Average discharge.- 13 years (1924-28, 1929-30, 1933-35, 1940-46), 21.3 second-feet.

Extremes.- Maximum discharge during year, 312 second-feet Jan. 2-4 (gage height, 2.59 feet); practically no flow at times.
1920-46: Maximum discharge, 5,260 second-feet Feb. 20, 1927, by computation of flow over dam; no flow at times.

Remarks.- Records good except those below 10 second-feet and those for Apr. 26, Sept. 3, 4, which are poor. Flow regulated since December 1924 by Emigrant Gap Reservoir. Diversions above station for irrigation; principal canals are Ashland lateral and East lateral. Water diverted by Keene Creek Canal from Klamath River Basin into Emigrant Creek above station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 29						Apr. 30 to Sept. 30					
0.6	3.8	1.1	24	1.8	109	0.1	0.2	0.5	2.9	0.9	15
.7	6.0	1.2	32	2.0	151	.2	.5	.6	4.5	1.0	21
.8	8.9	1.5	41	2.2	200	.3	1.0	.7	7.0	1.2	36
.9	13	1.4	51	2.5	285	.4	1.8	.8	10.5		
1.0	18	1.8	75								

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				194	59	71	77	3.1	1.6	7.7	26	24
2				291	81	72	72	3.2	1.8	6.8	26	23
3				312	62	72	87	3.2	1.6	10	28	22
4				309	62	72	63	3.5	1.6	20	26	8.0
5				308	62	72	62	3.4	1.8	20	25	0
6				304	68	72	82	h3.5	1.6	21	26	0
7				303	80	72	62	3.5	1.6	20	27	0
8				300	78	72	49	3.5	1.6	20	27	0
9				198	77	72	33	3.4	1.6	20	30	0
10				74	77	72	31	3.4	1.6	23	30	0
11				70	80	72	36	3.2	1.6	28	30	0
12				67	81	72	45	3.1	1.5	30	30	0
13				66	80	72	52	3.1	1.5	33	30	0
14				65	77	72	56	3.1	1.5	55	29	0
15				36	75	71	68	2.8	1.4	53	26	0
16	0.1	0.2	0.5	11	75	71	74	2.6	1.5	34	19	0
17				10	74	75	81	2.5	1.5	35	14	0
18				8.9	74	88	91	2.2	1.4	35	12	0
19				8.8	72	95	86	2.2	1.4	35	12	0
20				8.3	71	98	68	2.0	1.4	35	8.2	0
21				7.7	71	96	59	2.0	1.3	34	.4	0
22				7.4	71	95	46	2.0	1.3	34	.3	0
23				6.9	70	93	35	1.9	1.5	33	.2	0
24				6.9	70	88	32	1.7	1.2	40	.1	0
25				29	70	81	30	1.7	1.2	32	.1	0
26				44	70	75	15	1.6	1.3	30	.1	0
27				44	70	74	3.5	1.8	1.2	30	15	0
28				49	71	86	3.0	1.8	2.1	30	32	0
29			2.4	59	-	107	h2.9	1.6	4.0	30	30	0
30			12	59	-	95	3.0	1.6	4.0	27	28	0
31			50	59	-	86	-	1.6	-	27	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3.1	-	-	0.10	6.1
November	6.0	-	-	.20	12
December	72.8	50	-	2.35	144
Calendar year 1945	5,522.6	313	0	15.1	10,960
January	3,313.7	312	6.9	107	6,570
February	2,008	81	59	71.7	3,960
March	2,479	107	71	80.0	4,920
April	1,482.4	91	2.9	48.7	2,900
May	79.2	3.5	1.6	2.55	157
June	49.6	4.0	1.2	1.65	98
July	846.5	40	6.8	27.3	1,680
August	612.4	32	.1	19.8	1,210
September	77.0	24	0	2.57	153
Water year 1945-46	11,009.7	312	0	30.2	21,830

h Computed from staff-gage reading.

Note.- No gage-height record Oct. 1 to Dec. 28, Jan. 6, Apr. 28-28, Apr. 30 to May 5, Sept. 3, 4; discharge interpolated or computed on basis of reservoir leakage, notes of reservoir operation, and records for Emigrant Creek below Walker Creek, near Ashland, and Bear Creek at Medford.

Emigrant Creek below Walker Creek, near Ashland, Oreg.

Location.- Water-stage recorder, lat. 42°12', long. 122°39', in NE¼SW¼ sec. 12, T. 39 S., R. 1 E., 40 feet downstream from Walker Creek and 2 miles east of Ashland.

Records available.- October 1945 to September 1946 in reports of Geological Survey. October 1943 to September 1945 in files of State engineer.

Extremes.- Maximum discharge during year, 496 second-feet (regulated) Jan. 5 (gage height, 2.41 feet); minimum, 1 second-foot (estimated) Aug. 23-26.
1943-46: Maximum discharge, that of Jan. 5, 1946; minimum, 0.3 second-foot Sept. 18 to Oct. 10, 1944.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Flow partly regulated by Emigrant Gap Reservoir. Diversions above station for irrigation.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11			240	80	130	152	39	9.0	9.8	27	28
2	11			343	80	126	148	34	8.2	9.8	27	28
3	11			306	85	126	134	32	7.8	13	27	28
4	11			313	87	115	130	31	7.3	21	27	28
5	11			399	87	134	130	31	7.3	20	26	9.0
6	11			320	95	180	126	28	6.8	20	27	
7	10			335	104	145	126	26	6.8	20	28	
8	10			313	101	137	112	25	6.8	21	28	
9	10			210	98	134	93	25	6.8	21	30	
10	10			87	98	137	90	24	6.8	24	30	
11	10		20	83	98	126	93	22	6.8	28	30	
12	10			78	101	171	98	21	6.8	29	29	
13	10			76	101	194	104	20	6.8	31	31	
14	10			78	98	157	107	19	6.8	31	32	
15	10	18.7		57	107	161	109	16	6.4	31	31	
18	10			29	107	148	109	15	7.8	31	24	
17	11			28	115	171	109	14	7.8	31	20	
18	11			26	134	180	109	14	7.3	32	16	2
19	10			26	141	180	107	14	7.3	34	16	
20	11			25	130	176	104	14	7.3	32	15	
21	11		h13	25	134	171	101	20	7.3	34	7.3	
22	11		18	41	122	171	98	14	7.3	35	2	
23	11		25	57	122	161	87	13	7.3	35	1	
24	10		25	85	148	148	83	12	7.3	41	1	
25	10		24	93	137	145	78	12	6.8	32	1	
26	10		28	85	122	148	72	11	7.3	32	1	
27	10		38	80	190	152	63	12	7.3	31	10	
28	10		190	80	157	171	54	11	7.3	31	25	
29	10		137	85	-	222	48	11	7.8	30	28	
30	18		101	78	-	185	44	11	7.8	29	28	
31	23		134	78	-	166	-	11	-	28	28	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	343	23	10	11.1	680
November	560	-	-	18.7	1,110
December	1,133	190	-	36.5	2,250
Calendar year 1945	12,936.2	343	1.3	35.4	25,860
January	4,159	343	25	134	8,250
February	3,179	190	80	114	6,310
March	4,868	222	115	157	9,660
April	3,018	152	44	101	5,990
May	602	39	11	19.4	1,190
June	218.2	9.0	6.4	7.27	433
July	847.6	41	9.8	27.3	1,880
August	653.3	32	1	21.1	1,300
September	171.0	28	-	5.70	339
Water year 1945-46	19,752.1	343	-	54.1	39,190

h Computed from staff-gage readings.

Note.- No gage-height record Oct. 30 to Dec. 20, Dec. 22-25, July 21 to Aug. 11, Aug. 22-27, Sept. 6-30; discharge computed on basis of records for Emigrant Creek near Ashland and Bear Creek at Medford.

Bear Creek at Medford, Oreg.

Location.- Water-stage recorder, lat. 42°19', long. 122°52', in NW¼ sec. 30, T. 37 S., R. 1 W., just upstream from Main Street Bridge in Medford. Datum of gage is 1,343.47 feet (corrected) above mean sea level, datum of 1929. Datum of gage was lowered 0.42 foot Sept. 10, 1943.

Records available.- March 1915 to September 1946 (incomplete prior to April 1927).

Average discharge.- 25 years (1920-26, 1927-46), 79.2 second-feet.

Extremes.- Maximum discharge during year, 1,060 second-feet Dec. 28 (gage height, 2.73 feet); minimum, 6.4 second-feet sometime during period Oct. 13 to Nov. 2 (gage height, 0.23 foot).

1915-46: Maximum discharge, 10,200 second-feet Feb. 20, 1927 (gage height, 10.57 feet, present datum), from rating curve extended above 1,600 second-feet; practically no flow at times.

Remarks.- Records excellent except those above 800 second-feet and those for July 27 to Sept. 30, which are good, and those for periods of doubtful or no gage-height record, which are poor. Diversions above station for irrigation. Flow partly regulated since December 1924 by Emigrant Gap Reservoir.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 27 to Sept. 30)

0.3	12	1.1	160
.4	22	1.3	225
.5	37	1.6	355
.7	72	1.9	510
.9	113	2.2	695

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		a35	88	283	175	253	208	105	78	30	15	12
2		25	76	512	184	245	204	100	67	31	14	11
3		24	67	494	169	233	190	90	67	27	16	11
4		24	234	455	166	222	181	84	68	25	18	14
5	a9.0	27	163	606	163	218	178	78	74	22	21	13
6		34	115	477	246	274	178	78	67	18	19	15
7		31	131	708	245	245	172	68	61	20	18	14
8		30	105	528	204	222	166	68	54	22	17	13
9		33	90	415	194	214	150	59	51	21	15	13
10	18	40	102	249	197	218	140	61	52	19	15	12
11	18	37	90	211	190	208	142	58	d40	17	17	10
12	10	47	78	194	181	249	150	56	d35	17	18	9.3
13		51	67	184	178	301	166	63	d30	16	19	8.6
14		39	61	181	175	265	169	63	44	17	18	9.3
15		52	65	166	175	265	181	61	46	18	18	9.3
16		56	68	128	184	261	204	59	59	19	21	12
17		65	65	122	187	306	222	51	59	17	17	16
18		46	59	120	211	328	241	52	49	17	13	16
19		92	56	115	225	306	245	56	a30	19	14	14
20	a15	90	52	115	204	296	222	58	20	16	11	13
21		67	58	111	214	270	200	131	28	14	10	12
22		63	68	135	208	270	184	131	24	12	9.3	12
23		61	86	172	200	257	152	122	30	12	9.3	13
24		56	82	415	222	241	133	124	39	11	9.3	13
25		74	80	360	229	222	126	160	33	14	9.3	10
26		72	98	249	208	214	117	163	28	17	11	11
27		112	107	214	314	222	94	160	28	15	8.6	9.3
28		245	612	204	306	237	98	135	25	12	11	11
29	a20	181	497	200	-	292	115	111	24	16	10	10
30	a45	115	241	181	-	257	117	100	27	14	10	9.3
31	a60	-	208	172	-	225	-	96	-	14	10	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	492.0	-	-	15.9	976
November	1,924	245	24	64.1	3,820
December	3,967	612	52	128	7,870
Calendar year 1945	31,893.8	879	-	87.4	63,270
January	8,676	708	111	280	17,210
February	5,754	314	163	206	11,410
March	7,836	328	208	253	15,540
April	5,045	245	94	168	10,010
May	2,801	163	51	90.4	5,560
June	1,337	78	20	44.6	2,650
July	559	31	11	18.0	1,110
August	441.8	21	8.6	14.3	876
September	356.1	16	8.6	11.9	706
Water year 1945-46	39,188.9	708	-	107	77,740

a No gage-height record; discharge computed on basis of unpublished records for station near Central Point.

d Doubtful gage-height record; discharge computed on basis of unpublished records for station near Central Point.

Bear Creek near Central Point, Oreg.

Location.- Staff gage, lat. 42°24', long. 122°55', in SE¼ sec. 34, T. 36 S., R. 2 W., at county road bridge 1.3 miles north of Central Point and 4½ miles upstream from mouth.

Records available.- October 1945 to September 1946 in reports of Geological Survey. March 1923 to July 1926 (irrigation season only) at site 1 mile upstream, in reports of State engineer.

Extremes.- Maximum discharge observed during year, 1,400 second-feet Dec, 28 (gage height, 6.16 feet), from rating curve extended above 510 second-feet; minimum observed, 2 second-feet Sept, 12, 13.
1923-26, 1946: Maximum discharge observed, that of Dec, 28, 1945; no flow at times in 1924.

Remarks.- Records poor. Many diversions above station. Flow regulated by Emigrant Gap Reservoir.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	57	152	313	227	290	243	138	84	17	7	7
2	-	45	118	443	243	261	235	130	67	25	5	a7
3	-	34	104	520	218	253	227	97	65	25	4	7
4	-	34	362	506	201	246	222	113	67	22	4	6
5	-	32	230	734	199	238	217	104	73	14	4	5
6	-	40	150	534	266	287	207	86	65	8	4	4
7	-	47	188	1,010	272	277	201	75	53	6	4	4
8	-	38	145	572	240	261	194	69	42	19	4	4
9	-	57	140	592	220	251	186	51	42	17	5	4
10	-	63	145	511	238	240	181	55	47	12	7	4
11	-	71	122	285	246	243	175	53	30	10	7	4
12	30	63	108	266	209	264	186	51	24	13	11	2
13	-	67	90	248	204	326	217	49	20	17	7	2
14	-	56	75	240	212	308	217	59	40	19	5	3
15	-	92	63	227	207	285	217	53	36	16	4	4
16	-	84	73	186	214	259	222	45	38	16	7	4
17	-	101	88	170	222	290	235	51	47	14	9	12
18	-	84	75	155	233	343	259	53	49	13	11	42
19	-	135	67	135	248	333	286	48	29	10	9	61
20	-	118	89	165	233	311	246	53	18	8	7	42
21	-	99	75	148	235	298	230	92	18	7	7	42
22	53	90	120	173	225	279	214	84	6	5	7	40
23	51	82	120	209	233	277	199	69	14	7	5	32
24	47	89	122	279	243	292	173	135	38	4	5	29
25	43	77	150	337	253	282	142	212	38	4	4	13
26	34	94	138	277	240	248	132	220	16	3	4	9
27	32	122	162	243	364	235	122	188	13	4	4	7
28	99	470	g1,010	247	353	259	115	155	12	4	4	4
29	87	256	g824	227	-	321	138	125	11	6	6	4
30	63	186	316	188	-	290	140	106	12	5	7	6
31	84	-	274	175	-	272	-	92	-	9	7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-	-	-	-
November	2,852	470	32	95.1	5,660
December	5,855	1,010	63	182	11,220
Calendar year	-	-	-	-	-
January	9,915	1,010	135	320	19,670
February	8,690	364	199	239	13,270
March	8,619	343	235	278	17,100
April	5,958	266	115	199	11,820
May	2,905	220	42	93.7	5,760
June	1,106	84	6	36.9	2,190
July	358	25	3	11.5	710
August	184	11	4	5.9	365
September	412	61	2	13.7	817
The period	-	-	-	-	88,580

a No gage-height record; discharge computed on basis of records for Bear Creek at Medford.
g Computed from graph based on gage readings.

Diversions in Bear Creek Basin, Oreg.

The following canals divert from streams in Bear Creek Basin:

Ashland lateral of Talent Irrigation District, from Sampson Creek in SW¼ sec. 26, T. 39 S., R. 2 E. Water used to irrigate lands near Ashland. Most of flow is received from Keene Creek, in Klamath River Basin, through Keene Creek Canal.

East lateral of Talent Irrigation District, from Emigrant Gap Reservoir in SE¼ sec. 20, T. 39 S., R. 2 E. Water used to irrigate lands mostly on east side of Bear Creek above Medford.

Talent lateral of Talent Irrigation District, from Bear Creek in SW¼ sec. 33, T. 38 S., R. 1 E. Water used to irrigate lands near Talent.

Phoenix Canal, from Bear Creek in NW¼ sec. 23, T. 38 S., R. 1 W. Water supplements flow of Medford Irrigation District Canal, used to irrigate lands west of Bear Creek.

Bear Creek Canal, from Bear Creek at Medford. Water used to irrigate lands west of Bear Creek near Central Point.

Records of these canals, published as a group, are available from April 1929 to September 1946; records for some of the canals published separately prior to 1929.

Many smaller canals also divert from Bear Creek and its tributaries.

Diversions, in acre-feet, water year October 1945 to September 1946

Month	Ashland lateral	East lateral	Talent lateral	Phoenix Canal	Bear Creek Canal
October	-	0	a64	b128	c271
November	-	0	-	-	-
December	-	0	-	-	-
January	-	0	-	-	-
February	-	0	-	-	-
March	-	0	-	-	-
April	d22	943	e451	635	e56
May	145	2,840	2,260	1,190	1,060
June	540	2,800	1,750	1,080	960
July	1,080	4,170	2,410	901	822
August	809	2,440	1,370	562	764
September	119	0	227	639	611
Water year 1945-46	-	15,190	-	-	-

a Oct. 1-17.
b Oct. 1-10.
c Oct. 1-18.
d Apr. 27-30.
e Apr. 10-30.

Applegate River near Copper, Oreg.

Location.- Water-stage recorder, lat. 42°03', long. 123°07', in SE¼ sec. 25, T. 40 S., R. 4 W., a quarter of a mile downstream from French Gulch, 1½ miles downstream from Squaw Creek, and 3 miles northeast of Copper store. Datum of gage is 1,759.66 feet above mean sea level, datum of 1929.

Drainage area.- 220 square miles (revised).

Records available.- December 1938 to September 1946.

Extremes.- Maximum discharge during year, 12,000 second-feet Dec. 28 (gage height, 16.7 feet, from floodmark), from rating curve extended above 6,300 second-feet by logarithmic plotting; minimum daily, 29 second-feet Oct. 2, 7, 8.
1938-46: Maximum discharge, that of Dec. 28, 1945; minimum, 20 second-feet Sept. 23-25, 1939.

Remarks.- Records good except those for periods of no gage-height record, which are poor. About 11 second-feet diverted for irrigation of 482 acres above station in Applegate River Basin; Grand Applegate ditch diverts about 3.3 second-feet around station on left bank. About 21 second-feet for irrigation and 8 second-feet for mining use are diverted at times into Thompson Creek Basin. Several hundred acre-feet normally stored each winter in Squaw Lake for irrigation the following summer.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 29 to Sept. 30					
1.0	32	2.5	304	6.4	2,600	1.2	34	2.2	187	4.0	835
1.2	51	2.9	440	7.8	3,680	1.4	55	2.5	258	4.8	1,310
1.4	74	3.4	625	9.3	4,880	1.6	82	2.9	376	5.8	2,010
1.6	101	4.0	920	11.0	6,330	1.9	130	3.4	560		
1.9	150	4.6	1,300	13.0	8,110						
2.2	218	5.4	1,850								

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a30	84	585	a1,400	512	722	452	770	580	181	74	48
2	a29	67	478	2,010	520	668	434	880	600	175	71	45
3	h31	58	510	1,630	473	609	420	1,080	568	167	68	44
4	a30	53	1,430	1,590	448	564	407	1,130	532	165	64	54
5	30	52	1,050	1,500	448	552	410	1,040	496	159	63	48
6	30	60	938	1,310	676	580	417	995	452	156	60	45
7	29	60	1,140	1,430	672	560	431	984	420	148	58	44
8	29	59	795	1,300	584	556	434	918	410	144	60	43
9	32	80	645	1,100	540	560	417	934	393	135	58	42
10	35	139	585	956	512	592	403	973	376	127	55	40
11	35	98	517	845	473	572	410	951	363	127	53	39
12	34	116	461	755	448	622	456	929	360	123	53	37
13	34	104	419	699	428	681	520	896	363	118	52	38
14	33	98	380	650	414	596	600	795	369	111	52	39
15	33	231	356	604	403	572	717	790	363	110	52	41
16	33	231	330	568	390	536	875	850	400	110	53	55
17	41	184	307	540	379	560	1,010	962	346	110	52	51
18	39	228	288	512	383	532	1,210	962	324	105	51	44
19	37	461	273	492	393	516	1,080	890	318	99	48	41
20	38	282	273	462	386	496	865	870	312	91	47	39
21	38	184	353	445	410	473	775	825	306	86	46	38
22	38	154	a400	609	390	473	740	899	292	86	45	37
23	38	177	a700	672	383	456	795	636	276	84	45	37
24	38	244	a750	1,010	431	442	1,040	632	250	81	43	36
25	37	444	a650	1,020	452	428	1,280	668	231	79	42	36
26	37	565	a800	825	438	452	1,180	785	219	94	43	36
27	36	1,310	a1,500	730	882	520	1,000	668	209	88	41	36
28	49	3,510	a8,500	672	835	552	962	609	207	81	41	35
29	74	1,470	a5,500	618	-	532	940	584	205	76	42	34
30	168	810	a2,700	572	-	500	805	560	189	76	46	33
31	127	-	a1,800	536	-	473	-	568	-	76	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,342	168	29	43.3	2,660
November	11,613	3,510	52	387	23,030
December	35,413	8,500	273	1,142	70,240
Calendar year 1945	154,268	8,500	29	423	306,000
January	28,062	2,010	445	905	55,660
February	13,703	882	379	489	27,180
March	16,947	722	428	547	33,610
April	21,485	1,280	403	716	42,610
May	25,833	1,130	560	833	51,240
June	10,729	600	189	358	21,280
July	3,568	181	76	115	7,080
August	1,826	74	41	52.5	3,230
September	1,235	55	33	41.2	2,450
Water year 1945-46	171,556	8,500	29	470	340,300

Peak discharge.- Nov. 28 (10:30 a.m.) 5,220 sec.-ft.; Dec. 28 (about 6 p.m.) 12,000 sec.-ft.
a No gage-height record; discharge computed on basis of records for stations at Applegate and at Ruch.
h Computed from staff-gage reading.

Applegate River near Ruch, Oreg.

Location.- Water-stage recorder, lat. 42°11', long. 123°03', in sec. 15, T. 39 S., R. 3 W., at Cameron Bridge, 1½ miles upstream from Little Applegate River and 4½ miles south of Ruch. Datum of gage is 1,475.09 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).
Drainage area.- 297 square miles (revised).
Records available.- June 1911 to September 1914, September 1925 to September 1946.
Average discharge.- 23 years (1911-14, 1925-26, 1927-46), 347 second-feet.
Extremes.- Maximum discharge during year, 16,100 second-feet Dec. 28 (gage height, 12.2 feet, from floodmark), from rating curve extended above 5,200 second-feet by logarithmic plotting; minimum, 25 second-feet Oct. 7.
1911-14, 1925-46: Maximum discharge, 20,000 second-feet Feb. 20, 1927 (gage height, 16.0 feet), from rating curve extended above 8,000 second-feet; minimum, 7 second-feet Sept. 2, 1929 (gage height, 0.26 foot).
Remarks.- Records good except those for periods of doubtful or no gage-height record and those above 7,000 second-feet, which are fair. Diversions above station for irrigation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 28						Dec. 28 to Sept. 30					
-0.1	34	0.8	232	2.6	1,200	-0.3	38	0.7	246	3.0	1,690
0	46	1.1	345	3.0	1,520	-.2	47	1.0	355	3.5	2,140
.1	61	1.4	485	3.5	1,930	-.1	60	1.3	485	4.0	2,640
.3	99	1.8	690	4.0	2,380	0	76	1.6	640	5.0	3,770
.5	145	2.2	920	5.0	3,420	.2	114	2.0	900	6.0	5,090
						.4	159	2.5	1,280		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	101	615	1,530	535	802	472	795	570	172	a62	42
2	36	74	500	2,150	545	730	454	907	596	164	60	40
3	38	66	505	1,880	505	670	a440	1,130	570	159	54	41
4	a33	80	1,300	1,840	472	612	418	1,200	525	157	51	54
5	29	58	1,100	1,750	462	585	422	1,080	495	150	52	54
6	26	63	878	1,460	762	618	426	1,030	444	150	50	48
7	28	65	1,120	1,820	802	602	444	1,030	408	148	51	48
8	27	61	824	1,580	682	590	444	963	395	145	52	45
9	31	70	679	1,300	618	590	426	956	383	143	51	43
10	34	155	625	1,110	585	624	404	998	363	136	48	42
11	35	114	550	956	535	602	404	977	347	132	50	41
12	40	123	495	865	505	640	449	956	344	127	51	39
13	39	126	445	774	480	736	510	928	344	125	50	38
14	36	103	d410	718	462	629	596	816	347	a120	50	38
15	34	242	d380	684	449	607	724	795	332	a115	50	40
16	34	253	d350	612	440	565	907	865	383	a110	50	48
17	39	229	d320	580	426	590	1,030	970	325	a105	48	48
18	39	280	d300	550	422	565	1,280	998	310	96	50	43
19	39	495	d290	525	422	550	1,160	921	303	92	52	42
20	39	313	d280	500	422	525	914	900	299	89	47	42
21	39	216	d360	476	449	500	816	858	295	83	42	41
22	38	180	455	618	431	500	767	712	278	a82	42	37
23	39	191	745	700	418	476	802	646	256	a80	41	37
24	41	236	784	1,060	454	467	1,040	640	236	a76	41	36
25	41	450	696	1,120	480	449	1,360	664	220	a72	41	36
26	41	570	862	893	462	467	1,290	802	205	a80	42	36
27	40	1,170	1,620	788	1,190	545	1,050	688	202	a75	41	37
28	49	3,530	10,000	718	942	575	991	618	197	a70	37	37
29	75	1,420	6,250	658	-	560	991	585	188	a65	38	37
30	174	818	2,820	602	-	525	844	565	177	a64	38	39
31	153	-	1,950	580	-	495	-	565	-	a64	42	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,422	174	26	45.9	2,820
November	11,758	3,530	58	392	23,320
December	38,508	10,000	280	1,242	76,380
Calendar year 1945	158,304	10,000	26	434	314,000
January	31,357	2,150	476	1,012	62,200
February	15,357	1,190	418	548	30,460
March	17,991	802	449	580	35,680
April	22,275	1,360	404	742	44,180
May	26,558	1,200	565	857	52,680
June	10,337	596	177	345	20,500
July	3,446	172	64	111	6,840
August	1,474	62	37	47.5	2,920
September	1,249	54	36	41.6	2,480
Water year 1945-46	181,732	10,000	26	498	360,500

Peak discharge.- Nov. 28 (12 m.) 5,570 sec.-ft.; Dec. 4 (11:30 a.m.) 1,560 sec.-ft.; Dec. 28 (about 7 p.m.) 16,100 sec.-ft.; Jan. 2 (3:30 p.m.) 2,510 sec.-ft.; Jan. 7 (11 a.m.) 2,110 sec.-ft.
a No gage-height record; discharge computed on basis of records for stations near Copper and near Applegate.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Applegate River near Applegate, Oreg.

Location.- Water-stage recorder, lat. 42°14', long. 123°08', in NE¼ sec. 26, T. 38 S., R. 4 W., 0.9 mile downstream from Keeler Creek and 2 miles southeast of Applegate. Datum of gage is 1,285.33 feet above mean sea level, datum of 1929.

Drainage area.- 480 square miles (revised).

Records available.- October 1938 to September 1946.

Extremes.- Maximum discharge during year, 16,800 second-feet Dec. 28 (gage height, 12.5 feet), from rating curve extended above 4,300 second-feet by logarithmic plotting; minimum, 14 second-feet Aug. 30 (gage height, 0.54 foot).
1938-46: Maximum discharge, that of Dec. 28, 1945; minimum, 7 second-feet Sept. 18, 1945 (gage height, 0.30 foot).

Remarks.- Records good. Many diversions above station for irrigation of about 4,000 acres in Applegate River Basin. About 10 second-feet is diverted through Wagner Gap to Bear Creek Basin for several months each year; Fowler-Keeler and Berryman ditches may divert 4.3 and 13.6 second-feet, respectively, around station.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

0.7	21	1.6	140	3.0	745	5.5	3,250
.9	37	1.9	216	3.5	1,100	6.5	4,600
1.1	58	2.2	322	4.0	1,530	7.8	6,530
1.3	86	2.6	510	4.7	2,280	9.3	9,350

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	115	662	1,770	650	965	587	894	668	158	46	18
2	22	88	521	2,360	656	880	560	988	706	147	46	18
3	24	77	495	2,180	609	817	543	1,230	668	136	36	20
4	22	70	1,520	2,080	570	752	510	1,340	620	138	33	22
5	20	70	1,320	2,030	554	719	510	1,210	587	128	32	25
6	19	74	936	1,730	845	758	516	1,160	532	124	32	22
7	18	77	1,300	2,140	988	732	526	1,140	532	124	32	24
8	18	72	936	2,020	831	712	532	1,070	450	120	28	26
9	20	76	745	1,600	758	712	521	1,070	445	113	25	28
10	22	149	674	1,350	719	752	495	1,110	415	99	25	27
11	23	124	592	1,180	662	732	490	1,100	392	92	25	27
12	24	118	521	1,040	620	758	526	1,070	378	91	27	27
13	27	132	460	950	582	887	604	1,060	378	88	24	27
14	31	107	420	880	560	778	700	929	378	88	22	25
15	31	232	396	817	543	745	824	901	365	82	22	25
16	30	251	365	758	521	693	1,010	950	445	82	22	31
17	33	258	339	700	510	726	1,160	1,070	378	80	22	36
18	40	194	314	662	510	712	1,460	1,130	352	76	24	32
19	39	510	299	632	516	693	1,340	1,030	326	67	27	28
20	39	365	283	598	516	668	1,090	1,000	314	63	26	28
21	39	241	335	565	543	626	950	1,020	318	63	22	26
22	38	199	415	700	521	626	894	880	295	62	21	23
23	39	202	726	824	505	598	915	790	279	59	20	26
24	40	235	831	1,130	548	587	1,160	764	265	54	18	28
25	40	470	706	1,320	592	560	1,520	784	232	50	16	24
26	40	592	866	1,070	565	565	1,470	936	208	55	16	22
27	47	1,150	1,660	950	1,010	656	1,190	831	196	63	18	23
28	58	4,040	9,520	866	1,110	700	1,130	752	188	51	18	26
29	83	1,710	7,050	804	-	686	1,130	712	180	50	18	25
30	180	922	3,390	732	-	644	980	674	166	45	16	26
31	170	-	2,310	680	-	614	-	668	-	48	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,299	180	18	41.9	2,580
November	12,920	4,040	70	431	25,630
December	40,907	9,520	283	1,320	81,140
Calendar year 1945	176,424	9,520	7	483	349,900
January	37,118	2,360	565	1,197	73,620
February	18,114	1,110	505	647	35,930
March	22,053	965	560	711	43,740
April	25,843	1,520	490	861	51,260
May	30,263	1,340	668	976	60,030
June	11,656	706	166	389	23,120
July	2,696	158	45	87.0	5,350
August	776	46	16	25.0	1,540
September	765	36	18	25.5	1,520
Water year 1945-46	204,410	9,520	16	560	405,500

Peak discharge.- Nov. 28 (1 p.m.) 5,990 sec.-ft.; Dec. 4 (2 p.m.) 2,000 sec.-ft.; Dec. 28 (9 p.m.) 16,800 sec.-ft.; Jan. 2 (6 p.m.) 2,800 sec.-ft.; Jan. 7 (1 p.m.) 2,620 sec.-ft.

Applegate River near Wilderville, Oreg.

Location.- Staff gage, lat. 42°21', long. 123°24', in W½ sec. 15, T. 37 S., R. 6 W., 800 feet downstream from Jackson Creek and 4 miles southeast of Wilderville. Datum of gage is 949.54 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, War Department).

Drainage area.- 767 square miles (revised).

Records available.- October 1938 to September 1946.

Extremes.- Maximum discharge during year, 22,800 second-feet Dec. 28 (gage height, 18.3 feet, from floodmark), from rating curve extended above 9,500 second-feet by logarithmic plotting; minimum observed, 6 second-feet Aug. 26-28.
1938-46: Maximum discharge observed, that of Dec. 28, 1945; minimum observed, 3.0 second-feet Sept. 12-15, 18-25, 1939.

Remarks.- Records good. Gage read once daily Oct. 1-31, Apr. 1 to Sept. 30, twice daily Nov. 1 to Mar. 31. Many diversions above station for irrigation and mining. Two irrigation ditches on left bank divert about 17 second-feet around station.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 27						Dec. 28 to Sept. 30					
1.2	17	2.3	167	4.0	1,050	0.9	7	2.3	172	5.3	2,200
1.4	30	2.6	260	4.6	1,520	1.1	12	2.6	275	6.3	3,290
1.6	47	2.9	389	5.4	2,290	1.3	23	2.9	415	7.8	4,900
1.8	71	3.2	550			1.5	38	3.3	635	8.0	7,300
2.0	103	3.6	785			1.7	60	3.8	945	11.0	11,000
						2.0	106	4.5	1,480		

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	200	1,210	2,620	997	1,680	860	1,040	803	178	33	8
2	17	148	967	3,340	1,010	1,520	880	1,080	815	170	24	7
3	16	116	837	3,390	984	1,380	803	1,280	755	143	21	8
4	14	112	2,800	3,220	932	1,230	737	1,390	731	134	19	10
5	17	105	2,490	3,390	893	1,140	755	1,330	895	125	16	11
6	16	114	1,660	2,950	1,700	1,160	743	1,240	647	119	18	24
7	30	112	2,560	4,100	2,000	1,120	755	1,220	599	114	19	25
8	29	114	1,740	3,580	1,580	1,090	767	1,180	564	106	17	29
9	29	120	1,350	2,640	1,360	1,060	749	1,140	520	103	13	12
10	33	191	1,210	2,220	1,280	1,080	731	1,150	470	99	14	11
11	32	253	1,070	1,940	1,150	1,070	707	1,160	450	83	12	10
12	32	228	941	1,680	1,040	1,110	743	1,140	435	86	11	9
13	35	256	824	1,510	984	1,860	815	1,120	445	89	11	10
14	36	213	d760	1,360	919	1,440	919	1,040	435	80	10	12
15	36	384	701	1,250	926	1,400	1,020	1,070	420	74	9	17
16	43	572	653	1,170	886	1,300	1,210	1,050	509	83	12	22
17	47	641	588	1,080	848	1,240	1,330	1,080	455	86	9	32
18	55	446	561	1,010	841	1,210	1,620	1,150	435	71	8	38
19	66	1,030	522	952	867	1,140	1,570	1,120	360	60	7	38
20	68	e24	528	919	867	1,090	1,310	1,080	338	49	8	36
21	74	550	528	874	919	1,040	1,150	1,210	347	45	7	36
22	80	430	588	990	886	1,020	1,070	1,090	316	38	9	38
23	77	380	1,040	1,240	828	984	1,090	1,010	302	42	8	35
24	80	404	1,430	1,640	854	971	1,270	984	311	38	8	43
25	82	713	1,180	2,320	984	906	1,610	997	271	31	10	44
26	78	1,080	1,410	1,810	932	893	1,580	1,220	235	29	6	30
27	76	1,610	2,490	1,560	1,610	958	1,340	1,040	221	28	6	29
28	88	5,500	12,000	1,400	2,040	1,020	1,270	971	208	31	6	27
29	89	3,410	12,600	1,270	-	1,040	1,250	945	201	32	7	28
30	122	1,740	4,900	1,150	-	984	1,090	867	189	24	8	17
31	283	-	3,440	1,070	-	919	-	822	-	27	9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,810	283	14	58.4	3,590
November	21,996	5,500	105	733	43,630
December	65,378	12,600	522	2,109	129,700
Calendar year 1945	261,682	12,600	5	717	519,100
January	59,645	4,100	874	1,924	118,300
February	31,117	2,040	828	1,111	61,720
March	36,035	1,860	893	1,162	71,470
April	31,744	1,620	707	1,058	62,960
May	34,216	1,390	822	1,104	67,870
June	13,482	815	189	449	26,740
July	2,417	178	24	78.0	4,790
August	375	33	6	12.1	744
September	694	44	7	23.1	1,380
Water year 1945-46	298,909	12,600	6	819	592,900

d Doubtful gage-height record; discharge computed on basis of records for station near Applegate.

East Fork Williams Creek near Williams, Oreg.

Location.- Staff gage, lat. 42°11', long. 123°16', in NW¼ sec. 14, T. 39 S., R. 5 W., a quarter of a mile downstream from Rocky Creek (also known as Rock Creek and Clapboard Gulch) and 4 miles south of Williams.

Drainage area.- 11.8 square miles.

Records available.- August and September 1946.

Extremes (not including diversion).- Maximum discharge observed during period, 5.2 second-feet Sept. 16 (gage height, 0.91 foot); minimum observed, 0.7 second-foot Sept. 26, 27.

Remarks.- Records fair. Staff gage read twice daily. Several small diversions above station for irrigation; Eastside Canal diverts on right bank around station.

Discharge, in second-feet, August and September 1946

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	1.5	7	-	1.7	13	-	1.4	19	1.7	1.4	25	1.7	1.0
2	-	1.4	8	-	1.4	14	-	1.4	20	1.7	1.0	26	1.5	.7
3	-	1.9	9	-	1.4	15	-	1.4	21	1.7	1.4	27	1.4	.8
4	-	1.9	10	-	1.4	16	1.9	4.8	22	1.7	1.4	28	1.4	2.2
5	-	1.9	11	-	1.4	17	1.7	4.8	23	1.7	1.4	29	1.4	2.2
6	-	1.9	12	-	1.4	18	1.7	2.7	24	1.7	1.4	30	1.5	2.7
												31	1.4	-

Month	Creek only				Creek and Eastside Canal			
	Maximum	Minimum	Mean	Runoff in acre-feet	Maximum	Minimum	Mean	Runoff in acre-feet
August 16-31.....	1.9	1.4	1.61	51	3.1	2.6	2.87	91
September.....	4.8	.7	1.78	106	7.1	1.6	3.21	191

West Fork Williams Creek near Williams, Oreg.

Location.- Staff gage, lat. 42°11', long. 123°20', in NW¼ sec. 18, T. 39 S., R. 5 W., three-quarters of a mile upstream from Lone Creek and 5½ miles southwest of Williams.

Drainage area.- 12.8 square miles.

Records available.- August and September 1946.

Extremes.- Maximum discharge observed during period, 6.4 second-feet Sept. 16 (gage height, 1.28 feet); minimum observed, 4.2 second-feet Sept. 7, 10-15, 27-30.

Remarks.- Records good. Gage read once daily. One diversion above station for irrigation.

Discharge, in second-feet, August and September 1946

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	4.8	7	-	4.2	13	-	4.2	19	4.9	5.0	25	4.4	4.3
2	-	4.4	8	-	4.4	14	-	4.2	20	4.8	4.4	26	4.4	4.3
3	-	4.4	9	-	4.4	15	-	4.2	21	4.6	4.4	27	4.3	4.2
4	-	4.4	10	-	4.2	16	5.0	6.4	22	4.4	4.4	28	4.3	4.2
5	-	4.8	11	-	4.2	17	5.0	6.1	23	4.4	4.3	29	4.4	4.2
6	-	4.4	12	-	4.2	18	4.9	6.1	24	4.4	4.3	30	4.4	4.2
												31	4.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
August 16-31.....	73.4	5.0	4.3	4.59	146
September.....	136.2	6.4	4.2	4.54	270

Mungers Creek near Williams, Oreg.

Location.- Staff gage, lat. 42°13', long. 123°20', in NW¼ sec. 6, T. 39 S., R. 5 W., 75 feet downstream from Swamp Creek and 4 miles southwest of Williams.

Drainage area.- 6.8 square miles.

Records available.- August and September 1946.

Extremes.- Maximum discharge observed during period, 2.0 second-feet Sept. 16, 17 (gage height, 1.08 feet); minimum observed, 0.8 second-foot Aug. 24, 25.

Remarks.- Records good. Gage read once daily. No known diversion above station.

Discharge, in second-feet, August and September 1946

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	1.1	6	-	1.1	11	-	1.1	16	1.1	2.0	21	1.0	1.5	26	0.9	1.5
2	-	1.1	7	-	1.1	12	-	1.1	17	1.1	2.0	22	1.0	1.5	27	.9	1.8
3	-	1.0	8	-	1.1	13	-	1.1	18	1.1	1.8	23	.9	1.5	28	.9	1.5
4	-	1.1	9	-	1.1	14	-	1.1	19	1.0	1.8	24	.8	1.5	29	1.0	1.5
5	-	1.1	10	-	1.1	15	-	1.3	20	1.0	1.7	25	.8	1.5	30	1.0	1.5
															31	1.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
August 16-31.....	15.5	1.1	0.8	0.97	0.143	0.08	31
September.....	41.2	2.0	1.0	1.37	.201	.23	82

Slate Creek at Wonder, Oreg.

Location.- Staff gage, lat. 42°22', long. 123°31', in SW¼ sec. 10, T. 37 S., R. 7 W., half a mile upstream from Elliott Creek and 0.4 mile east of Wonder.

Drainage area.- 30.9 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. October 1943 to September 1945 in files of State engineer.

Extremes.- Maximum gage height during year, 9.0 feet Dec. 28, from floodmark (discharge not determined); minimum discharge observed, 0.6 second-foot Sept. 3, 10 (gage height, 0.27 foot).
1943-46: Maximum gage height, that of Dec. 28, 1945; minimum discharge observed, 0.3 second-foot July 16, 17, 1944.

Remarks.- Records good except those above 1,000 second-feet, which are fair. Several small diversions above station for irrigation. No regulation.

Discharge, in second-feet, water year October, 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.1	9.1	138	190	80	210	48	19	8.2	3.5	1.5	0.8
2	1.6	7.0	108	425	117	215	46	18	8.8	3.5	1.5	.7
3	1.6	6.2	157	358	108	141	44	17	8.8	3.5	1.5	.6
4	1.4	5.4	565	283	100	117	42	17	7.9	3.5	1.4	.8
5	1.1	6.0	461	413	121	108	41	15	8.5	3.3	1.4	.7
6	.8	8.8	469	277	565	97	38	15	11	3.1	1.4	.7
7	.7	8.2	365	545	413	89	38	14	8.8	2.4	1.2	.8
8	1.8	9.7	259	373	265	82	43	14	8.5	2.6	1.4	.9
9	1.9	31	181	241	185	77	42	15	7.6	2.9	1.5	1.1
10	2.2	73	141	181	161	75	42	13	7.6	2.6	1.4	.6
11	2.6	36	114	145	127	69	40	13	7.3	2.6	1.2	.7
12	2.6	57	97	121	111	330	39	12	6.7	2.6	.8	.7
13	2.2	41	82	105	100	365	39	12	7.3	1.9	1.1	.7
14	2.4	29	73	97	92	225	38	13	7.9	2.1	.8	.7
15	2.6	141	69	87	87	190	37	13	6.5	2.1	.8	1.1
16	9.4	235	63	80	82	157	34	12	6.7	1.9	.8	2.2
17	6.0	190	58	72	80	149	32	12	6.5	1.9	.9	2.1
18	4.9	365	52	65	82	134	30	10	6.2	1.8	.8	2.4
19	4.4	330	49	63	82	121	31	9.4	5.7	1.6	.7	2.1
20	4.9	141	48	59	87	105	28	10	5.4	1.6	.7	1.4
21	4.8	87	51	55	105	89	25	21	4.7	1.4	.7	1.1
22	4.4	65	355	83	97	84	24	15	5.2	1.4	.7	1.1
23	4.4	55	330	145	100	80	24	12	4.7	1.5	.7	.9
24	4.2	80	365	469	131	73	24	12	5.7	1.4	.8	1.1
25	4.0	405	241	289	134	67	23	13	5.4	1.4	.7	1.4
26	4.2	539	589	220	127	66	22	15	4.7	1.4	.8	1.4
27	4.2	920	805	145	437	65	21	13	4.4	1.4	.9	1.4
28	4.2	1,280	2,070	124	295	62	21	12	4.4	1.2	.9	1.4
29	9.1	485	1,130	108	-	60	22	11	4.2	1.4	.8	1.2
30	16	195	405	89	-	56	21	10	3.7	1.5	.9	1.2
31	12	-	265	83	-	52	-	9.4	-	1.5	.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	128.8	16	0.7	4.15	0.134	0.16	255
November	5,840.4	1,280	5.4	195	6.31	7.03	11,580
December	10,155	2,070	48	328	10.6	12.22	20,140
Calendar year 1945	35,473.0	2,070	.7	97.2	3.15	42.69	70,340
January	5,970	545	55	193	6.25	7.19	11,840
February	4,471	565	80	160	5.18	5.38	8,870
March	3,810	365	52	123	3.98	4.59	7,560
April	999	48	21	33.3	1.07	1.20	1,980
May	416.8	21	9.4	13.4	.434	.50	827
June	199.0	11	3.7	6.63	.215	.24	395
July	66.5	3.5	1.2	2.15	.070	.08	132
August	31.6	1.5	.7	1.02	.033	.04	63
September	34.0	2.4	.6	1.13	.037	.04	67
Water year 1945-46	32,122.1	2,070	.6	88.0	2.85	38.67	63,710

Grave Creek at Pease Bridge, near Placer, Oreg.

Location.- Water-stage recorder, lat. 42°39', long. 123°12', in NW¼SW¼ sec. 5, T. 34 S., R. 4 W., at bridge 5½ miles northeast of Placer.

Drainage area.- 28 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. April 1940 to September 1945 in files of State engineer.

Extremes.- Maximum discharge not determined, probably occurred Dec. 28; minimum discharge, 0.3 second-foot Aug. 16-27.
1940-46: Maximum discharge recorded, 2,000 second-feet Dec. 20, 1942 (gage height, 6.10 feet), computed on basis of unpublished records for station near Grants Pass; minimum, 0.3 second-foot Sept. 13, 1944, Aug. 16-27, 1946.

Remarks.- Records good except those for period of no gage-height record, which are poor. Columbia Urban ditch diverts water about 2 miles above station. No regulation.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	7.8	120		58	187	56	20	11	3.4	1.6	0.5
2	1.6	6.0	90		54	152	52	20	10	2.9	1.5	.5
3	1.4	5.2	81	265	50	134	47	24	9.1	2.8	1.4	.5
4	1.4	4.6			42	117	42	24	8.4	2.8	1.3	.6
5	1.4	4.1		h452	39	111	41	24	8.1	2.8	1.3	.8
6	1.4	5.4			131	111	41	20	9.1	2.4	1.2	.7
7	1.4	6.5			127	111	40	19	8.4	2.3	1.2	.7
8	1.4	6.0			96	113	37	18	7.7	2.3	1.2	.6
9	1.4	15			79	117	34	18	7.3	2.6	1.2	.5
10	1.4	36			70	117	30	16	7.0	2.6	1.2	.4
11	1.3	24			64	111	35	15	6.3	2.4	1.1	.4
12	1.3	46			54	184	35	15	5.9	2.3	1.2	.4
13	1.3	43		145	50	273	39	15	5.9	2.3	1.3	.4
14	1.3	24			47	178	40	13	4.7	2.2	1.2	.4
15	1.3	54			47	148	47	13	4.9	2.0	.8	.6
16	1.7	72			47	125	47	13	5.4	2.0	.3	.9
17	3.3	68	205		47	117	48	14	5.9	1.8	.3	1.2
18	2.6	88			48	107	52	13	5.7	1.8	.3	1.4
19	2.3	282			58	96	52	12	4.9	1.6	.3	1.0
20	2.5	142			59	85	47	12	4.9	1.2	.3	1.0
21	2.7	86		41	70	76	39	14	4.5	1.2	.3	1.0
22	2.9	63		138	70	74	34	15	4.2	1.3	.3	1.0
23	2.9	62		181	70	72	29	14	4.7	1.3	.3	.9
24	2.7	74		198	101	67	31	13	4.9	1.4	.3	.8
25	2.5	131		204	123	84	36	13	4.9	1.4	.3	.8
26	2.5	159		180	119	62	34	21	3.4	1.6	.3	.8
27	2.5	269		123	289	62	26	16	2.9	1.7	.3	.8
28	3.5	428		105	242	62	27	15	3.4	1.6	.4	.8
29	4.8	370		90	-	64	27	13	3.4	1.6	.4	.8
30	13	167		72	-	62	24	12	3.4	1.7	.5	.8
31	12	-		66	-	62	-	11	-	1.6	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	85.1	13	1.3	2.75	169
November	2,659.6	428	4.1	88.7	5,280
December	6,031	-	-	195	11,960
Calendar year 1945	21,554.3	-	.8	59.1	42,750
January	5,055	-	-	163	10,030
February	2,381	289	39	84.0	4,680
March	3,418	273	62	110	6,780
April	1,175	58	24	39.2	2,330
May	495	24	11	16.0	982
June	180.3	11	2.9	6.01	358
July	62.9	3.4	1.2	2.03	125
August	24.1	1.6	.3	.78	48
September	22.0	1.4	.4	.73	44
Water year 1945-46	21,559.0	-	.3	59.1	42,770

h Computed from staff-gage readings.
Note.- No gage-height record Dec. 5 to Jan. 4, Jan. 6-20; discharge computed on basis of unpublished records for station downstream, near Placer.

East Fork Illinois River near Takilma, Oreg.

Location.- Staff gage, lat. 42°01', long. 123°38', in SE¼ sec. 10, T. 41 S., R. 8 W., 30 feet upstream from county road bridge, a quarter of a mile upstream from Long Gulch, and 3 miles south of Takilma.

Drainage area.- 43 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. April 1926 to April 1932 in reports of State engineer. November 1940 to September 1945 in files of State engineer.

Extremes.- Maximum gage height during year, 9.4 feet Dec. 28, from floodmark (discharge not determined); minimum discharge, 12 second-feet Sept. 21-30.
1926-32, 1940-46: Maximum gage height, that of Dec. 28, 1945; minimum discharge, 5.2 second-feet Sept. 24-29, 1944.

Remarks.- Records fair except those for periods of shifting control and doubtful or no gage-height record, which are poor. Staff gage read once daily. No regulation. Esterly Upper Canal and Osgood Canal diverted water above station in periods of heavy runoff to 1942, not since used.

Cooperation.- Most of field data furnished by Bureau of Reclamation prior to July 1, 1946.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-29, July 18 to Sept. 30)

4.3	21	4.9	157	6.2	1,040
4.4	34	5.1	232	6.7	1,520
4.5	52	5.3	330	7.4	2,280
4.6	73	5.5	450	8.2	3,240
4.7	98	5.8	680	9.0	4,250

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	34	330	506	138	418	142	185	98	34	17	13
2	18	31	232	d960	142	387	132	185	98	34	17	14
3	18	29	416	860	126	378	123	174	86	34	17	14
4	18	21	2,340	d725	112	288	116	174	86	34	17	17
5	18	21	d1,840	d1,520	192	278	126	174	73	34	17	17
6	18	29	d905	905	656	273	126	174	73	34	17	14
7	18	34	1,080	995	d400	260	126	174	62	34	17	14
8	18	73	544	600	232	255	132	174	62	34	17	14
9	18	157	330	418	204	241	138	174	52	d31	17	14
10	18	d250	d264	387	192	232	145	174	52	d29	17	14
11	18	192	d192	304	16e	232	151	174	52	d26	15	14
12	18	358	192	250	142	485	157	126	52	d24	15	14
13	18	192	164	241	126	520	172	126	52	d23	15	14
14	18	126	157	192	126	464	418	126	52	21	15	17
15	18	387	142	157	112	418	381	126	52	21	15	19
16	18	560	126	148	126	330	400	142	52	21	15	d18
17	18	304	120	142	132	347	400	154	52	21	15	d15
18	18	192	112	138	145	255	400	192	52	20	15	15
19	18	770	98	126	160	224	299	157	56	20	15	15
20	18	d470	106	126	157	192	204	164	56	20	15	13
21	18	d300	278	123	255	151	188	154	52	20	15	12
22	18	171	450	860	255	174	157	126	52	20	15	12
23	18	171	640	680	269	174	204	120	52	20	15	12
24	18	192	478	d900	278	157	299	98	43	20	15	12
25	18	418	387	520	309	157	288	109	43	19	15	12
26	18	680	560	412	232	185	204	104	34	19	13	12
27	24	2,120	1,900	d300	1,570	192	232	104	34	19	13	12
28	29	a3,000	a4,600	192	640	232	232	98	34	17	13	12
29	41	1,900	3,000	157	-	232	212	98	34	17	13	12
30	62	520	1,320	174	-	241	192	98	34	17	13	12
31	52	-	860	148	-	192	-	98	-	17	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	676	62	18	21.8	0.512	0.59	1,340
November	13,702	3,000	21	457	10.7	11.96	27,180
December	24,085	4,500	98	776	18.2	21.01	47,730
Calendar year 1945	92,788	4,500	17	254	5.96	81.00	184,000
January	14,166	1,520	123	457	10.7	12.37	28,100
February	7,596	1,570	112	271	6.36	6.63	15,070
March	8,562	520	157	276	6.48	7.47	16,980
April	6,500	418	116	217	5.09	5.67	12,890
May	4,456	185	98	144	3.38	3.89	8,840
June	1,682	98	34	56.1	1.32	1.47	3,340
July	754	34	17	24.3	.570	.66	1,500
August	473	17	13	15.3	.359	.41	938
September	417	19	12	13.9	.326	.36	827
Water year 1945-46	83,049	4,500	12	228	5.35	72.49	164,700

a No gage-height record; discharge computed on basis of records for West Fork Illinois River near O'Brien and Illinois River at Kerby.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Illinois River at Kerby, Oreg.

Location.- Water-stage recorder, lat. 42°13', long. 123°39', in NW¼ sec. 4, T. 39 S., R. 8 W., 1 mile northwest of Kerby. Altitude of gage, 1,218 feet (from river-profile map).

Drainage area.- 367 square miles.

Records available.- March 1926 to September 1946.

Average discharge.-20 years, 1,080 second-feet.

Extremes.- Maximum discharge during year, 35,600 second-feet Dec. 28 (gage height, 23.3 feet, from floodmark); minimum daily, 28 second-feet Sept. 13.
1926-46: Maximum discharge, 50,000 second-feet Feb. 20, 1927 (gage height, 19.6 feet, site and datum then in use), from rating curve extended above 26,000 second-feet; minimum, 13 second-feet Sept. 10-15, 1934.

Remarks.- Records good except those for Mar. 18 to Apr. 7, May 4-23, which are fair, and those for periods of no gage-height record, which are poor. Diversions above station for irrigation.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-23)

Oct. 1 to Dec. 24				Dec. 25 to Sept. 30					
-0.4	38	0.8	305	-0.5	32	1.2	415	6.0	3,850
-.2	63	1.1	405	-.4	42	1.6	570	8.0	6,120
0	98	1.4	510	-.2	66	2.0	745	10.0	8,850
.2	141	1.8	670	0	96	2.5	1,000	12.0	12,000
.5	217	2.2	845	.2	131	3.0	1,280	14.0	15,500
Note.- Same as following table above 2.2 feet.				.5	197	4.0	1,980	16.0	19,200
				.8	281	5.0	2,850	19.0	25,400

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	h37	263	2,510	3,740	1,250	3,390	1,100	875	520	151	52	h32
2	37	182	h1,950	6,060	1,500	2,790	1,030	875	h530	145	51	31
3	36	141	1,900	5,040	1,380	2,610	967	984	520	137	h51	32
4	36	123	6,500	5,390	1,250	2,220	915	1,030	480	129	50	40
5	35	115	6,000	7,820	1,300	1,980	890	956	460	122	49	38
6	35	143	4,500	4,740	5,440	1,950	860	905	420	120	48	34
7	34	188	6,000	5,630	4,440	1,810	845	860	390	117	47	31
8	h34	180	h4,240	4,770	2,890	1,650	895	790	390	114	45	h30
9	34	400	3,500	3,520	2,210	1,550	1,080	770	h380	111	44	30
10	35	1,320	3,000	2,790	1,980	1,590	1,150	775	360	108	43	29
11	35	1,040	2,400	2,310	1,720	1,610	1,140	760	350	105	h42	29
12	35	1,750	2,000	1,970	1,510	3,200	1,200	745	350	102	41	29
13	35	1,310	1,600	1,720	1,380	6,100	1,220	740	350	99	39	28
14	36	870	1,400	1,550	1,290	3,560	1,220	691	350	h96	38	h29
15	h36	2,350	1,300	1,410	1,240	3,350	1,240	668	350	94	37	30
16	36	3,270	h1,180	1,290	1,200	2,940	1,310	664	420	91	35	35
17	45	3,170	1,150	1,200	1,180	2,730	1,370	709	h345	89	h34	35
18	50	3,270	1,100	1,140	1,360	2,410	1,470	750	310	87	h38	32
19	49	6,120	1,050	1,100	1,460	2,080	1,390	682	269	85	38	31
20	48	3,200	1,050	1,090	1,450	1,800	1,220	673	252	82	39	31
21	48	1,760	1,200	1,040	1,880	1,610	1,090	775	249	h80	39	30
22	h47	1,270	1,600	4,130	1,990	1,560	1,010	696	238	76	39	h29
23	h48	1,120	4,000	3,610	1,690	1,510	984	650	230	72	39	29
24	52	1,240	h4,520	4,610	2,350	1,500	1,120	620	221	68	40	29
25	52	4,060	3,500	4,490	2,850	1,430	1,300	628	210	65	h40	29
26	52	5,910	4,500	3,050	2,250	1,390	1,270	h765	190	61	39	30
27	52	9,040	10,000	2,360	6,290	1,460	1,120	640	185	57	38	31
28	70	18,200	26,000	2,000	4,920	1,450	1,030	560	173	h53	37	h32
29	130	6,850	12,000	1,780	-	1,410	1,020	530	162	53	35	32
30	272	3,670	7,000	1,560	-	1,260	950	510	158	52	34	33
31	360	-	4,880	1,380	-	1,160	-	510	-	52	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,941	360	34	62.6	3,850
November	82,525	18,200	115	2,751	163,700
December	133,530	26,000	1,050	4,307	264,900
Calendar year 1945	535,885	26,000	27	1,468	1,063,000
January	94,290	7,820	1,040	3,042	187,000
February	61,650	6,290	1,180	2,202	122,300
March	67,060	6,100	1,160	2,163	133,000
April	33,406	1,470	845	1,114	66,260
May	22,786	1,030	510	735	45,200
June	9,812	530	158	327	19,460
July	2,873	151	52	92.7	5,700
August	1,274	52	33	41.1	2,530
September	940	40	28	31.3	1,860
Water year 1945-46	512,087	26,000	28	1,403	1,016,000

h Computed from staff-gage reading.
Note.- No gage-height record except occasional gage readings Oct. 1-29, Dec. 2-30, May 24, May 26 to June 16, July 7 to Sept. 30; discharge computed on basis of records for Applegate River near Ruch.

Althouse Creek near Holland, Oreg.

Location.- Water-stage recorder, lat. 42°05', long. 123°31', in NW¼ sec. 22, T. 40 S., R. 7 W., 2 miles upstream from Carter Gulch and 4 miles south of Holland. Prior to Dec. 20, 1945, staff gage at same site and datum.

Drainage area.- 17.8 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. July 1945 to September 1946 in files of State engineer.

Extremes.- Maximum gage height, 4.85 feet Dec. 28 (discharge not determined); minimum discharge, 4.1 second-feet Oct. 1-9, 15, 16 (gage height, 0.48 foot).
1945-46: Maximum daily discharge, 900 second-feet Dec. 28, 1945; minimum, 4.1 second-feet Aug. 30 to Sept. 19, Sept. 23 to Oct. 9, Oct. 15, 16, 1945.

Remarks.- Records poor. Slight regulation from mining operations above station. Water used for placer mining is returned to creek above station.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a4.1	9.2	d150	292	94	96	52	h98	64	16	8.7	6.7
2	a4.1	7.9	111	440	94	91	51	a110	63	16	8.7	6.7
3	a4.1	6.1	138	425	89	87	42	a120	60	16	8.2	6.8
4	a4.1	6.1	446	413	85	87	42	h143	57	16	8.4	6.9
5	a4.1	6.1	193	449	78	83	42	h143	57	16	8.2	6.8
6	4.1	6.1	162	374	116	94	45	h119	51	13	8.2	6.8
7	4.1	6.1	193	434	98	100	49	h119	50	15	8.2	6.7
8	4.1	5.2	138	348	89	65	52	h119	a45	14	7.7	6.6
9	4.1	d15	120	253	89	80	52	h124	a40	14	7.5	6.5
10	4.3	38	98	185	80	94	a50	h119	a40	13	7.7	6.5
11	4.3	23	98	132	74	94	50	124	a35	13	7.7	6.5
12	4.3	60	89	109	70	129	53	117	a35	13	7.5	6.5
13	4.3	35	76	94	64	162	60	119	a35	13	7.7	6.4
14	4.3	32	72	87	74	89	67	113	a30	13	7.5	6.5
15	4.1	98	d65	78	76	122	78	108	a30	13	7.2	7.5
16	4.1	76	56	74	78	113	102	98	a30	13	7.2	8.9
17	4.3	76	d52	70	83	102	119	102	a25	12	7.2	7.5
18	4.3	89	d47	70	87	91	dh180	104	a25	12	7.2	6.9
19	4.3	143	d42	66	91	83	h143	104	24	11	7.0	6.8
20	4.3	98	38	62	94	80	h119	104	24	10	6.9	6.6
21	4.3	94	60	60	105	80	h80	102	23	9.9	6.9	6.6
22	4.3	89	116	76	98	74	h80	96	23	9.9	6.8	6.6
23	4.3	76	148	89	91	66	dh119	87	23	9.4	6.7	6.4
24	4.3	116	138	129	105	72	h140	85	22	9.4	6.8	6.4
25	4.3	193	125	132	98	70	h170	89	22	8.9	6.8	6.4
26	4.3	209	190	118	96	74	h198	100	20	a9	6.8	6.4
27	4.3	a350	313	109	155	70	dh170	89	20	a9	6.8	6.4
28	4.3	669	900	102	111	62	h143	74	20	a9	6.6	6.4
29	6.6	a400	791	100	-	52	h120	67	19	a9	6.6	6.3
30	38	a210	476	98	-	51	h98	66	18	9.9	6.8	6.3
31	12	-	356	98	-	56	-	64	-	9.2	6.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	174.8	38	4.1	5.64	0.317	0.37	347
November	3,241.8	669	5.2	108	6.07	6.77	6,430
December	5,997	900	38	193	10.8	12.53	11,890
Calendar year	-	-	-	-	-	-	-
January	5,566	449	60	180	10.1	11.63	11,040
February	2,562	155	64	91.5	5.14	5.35	5,080
March	2,689	162	51	86.7	4.87	5.62	5,330
April	2,766	198	42	92.2	5.18	5.78	5,490
May	3,226	143	64	104	5.84	6.74	6,400
June	1,030	64	18	34.3	1.93	2.15	2,040
July	376.6	18	9	12.1	.680	.79	747
August	229.0	8.7	6.6	7.39	.415	.48	454
September	201.3	8.9	6.3	6.71	.377	.42	399
Water year 1945-46	28,059.5	900	4.1	76.9	4.32	58.63	55,650

a No gage-height record; discharge computed on basis of records for Sucker Creek near Holland and East Fork Illinois River near Takilma.
d Doubtful gage-height record; discharge computed on basis of records for Sucker Creek near Holland and East Fork Illinois River near Takilma.
h Computed from staff-gage reading.

Sucker Creek near Holland, Oreg.

Location.- Staff gage, lat. 42°09', long. 123°28', in NE¼ sec. 25, T. 39 S., R. 7 W., 1 mile downstream from Grayback Creek and 4.3 miles northeast of Holland.

Drainage area.- 76 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. April 1940 to August 1941 at site half a mile upstream, September 1941 to September 1945 in files of State engineer.

Extremes.- Maximum discharge during year, 3,590 second-feet Dec. 28 (gage height, 6.6 feet, from graph based on gage readings), from rating curve extended above 720 second-feet; minimum, 23 second-feet Oct. 2, 3, 5-15.

Remarks.- Records good except those above 1,000 second-feet and those for periods of doubtful gage-height record, which are poor. Gage read once daily, oftener during periods of high water. No regulation. Grayback Canal diverts water from Grayback Creek above station for domestic use and irrigation of lands at and below station.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Rating table, water year 1945-46 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Oct. 1-29)

0.1	30	1.0	167	2.7	755
.3	48	1.3	235	3.4	1,090
.5	75	1.7	370	4.2	1,580
.7	111	2.1	510	5.3	2,430

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	44	235	665	222	422	210	300	241	86	36	27
2	23	36	187	732	253	370	205	405	225	75	35	27
3	23	32	235	625	210	321	196	426	220	72	35	28
4	24	30	890	665	d190	279	196	433	205	69	35	29
5	23	30	625	405	198	300	192	384	201	69	35	29
6	23	38	545	625	352	314	187	370	187	69	33	29
7	23	35	565	d750	300	304	187	363	175	66	33	27
8	23	36	370	585	282	279	187	370	167	69	32	27
9	23	53	293	510	235	265	187	370	152	66	30	27
10	23	58	259	475	220	293	187	370	144	63	30	27
11	23	60	230	370	d200	293	187	363	140	60	30	26
12	23	125	205	335	187	370	205	356	140	58	30	26
13	23	82	183	300	175	625	210	356	148	55	30	26
14	23	69	167	265	175	405	225	349	144	55	30	26
15	23	265	d160	250	175	398	253	349	140	53	30	30
16	26	122	152	235	179	356	286	391	137	50	30	36
17	27	118	144	210	179	363	384	426	133	48	30	32
18	26	122	137	198	179	335	405	384	129	46	29	30
19	26	279	133	198	187	314	405	363	125	44	29	29
20	24	159	129	187	201	286	398	370	122	44	29	27
21	24	122	156	d170	210	259	349	335	118	42	29	27
22	27	118	159	d250	235	282	286	293	115	42	28	26
23	26	111	475	300	314	259	335	265	111	40	27	26
24	26	144	328	475	335	247	363	253	107	40	27	26
25	24	300	293	d440	335	225	440	247	100	40	26	26
26	24	300	475	405	d300	247	349	335	97	46	26	26
27	24	698	674	d350	625	265	363	265	89	40	26	26
28	24	1,580	2,460	300	528	293	363	253	107	40	26	26
29	40	710	1,650	265	-	253	349	247	86	40	26	26
30	118	335	940	250	-	235	335	235	82	40	27	26
31	72	-	710	232	-	230	-	230	-	38	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	907	118	23	29.3	0.386	0.44	1,800
November	6,211	1,580	30	207	2.72	3.04	12,320
December	14,164	2,460	129	457	6.01	6.93	28,090
Calendar year 1945	74,254	2,700	23	203	2.67	36.34	147,300
January	12,022	750	170	388	5.11	5.88	23,850
February	7,181	625	175	256	3.37	3.51	14,240
March	9,687	625	225	312	4.11	4.74	19,210
April	8,424	440	187	281	3.70	4.12	16,710
May	10,456	433	230	337	4.43	5.12	20,740
June	4,287	241	82	143	1.88	2.10	8,500
July	1,665	86	38	53.7	.707	.81	3,300
August	926	36	26	29.9	.393	.45	1,840
September	826	36	26	27.5	.362	.40	1,640
Water year 1945-46	76,756	2,460	23	210	2.76	37.54	152,200

d Doubtful gage-height record; discharge computed on basis of records for Grayback Creek near Holland and Deer Creek near Dryden.

West Fork Illinois River near O'Brien, Oreg.

Location.- Staff gage, lat. 42°04', long. 123°44', in NE¼SW¼ sec. 26, T. 40 S., R. 9 W., 1½ miles southwest of O'Brien and 2 miles downstream from Elk Creek.

Drainage area.- 46.6 square miles.

Records available.- October 1945 to September 1946 in reports of Geological Survey. February to November 1930, February 1943 to September 1945 in files of State engineer.

Extremes.- Maximum gage height, 7.1 feet Dec. 28, from floodmark (discharge not determined); minimum, 3.5 second-feet Aug. 23-26 (gage height, -0.02 foot).
1930, 1943-46: Maximum gage height, that of Dec. 28, 1945; minimum discharge, 2.1 second-feet Sept. 16, 17, 1945.

Remarks.- Records fair except those for periods of doubtful or no gage-height record, which are poor. Staff gage read once daily.

Rating tables, water year 1945-46 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 7 to Sept. 30)

Oct. 1 to Jan. 1						Jan. 2 to Sept. 30					
0.5	12	1.1	89	2.3	545	0.1	7.4	0.6	62	1.7	415
.6	20	1.3	135	2.7	783	.2	12	.8	105	2.0	595
.7	29	1.5	192	3.1	1,035	.3	19	1.0	155	2.3	805
.8	40	1.7	262	3.8	1,520	.4	28	1.2	212	2.7	1,120
.9	54	2.0	388	4.7	2,170	.5	43	1.4	280	3.1	1,480

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	27	437	a800	212	763	114	75	28	16		5.8
2	7.2	24	300	1,500	228	488	112	70	27	15		5.8
3	6.6	20	490	d1,100	209	459	110	66	27	15		6.6
4	6.0	18	1,240	d1,200	180	437	107	62	26	15		6.6
5	6.6	18	1,100	d1,400	209	405	105	62	25	11		5.8
6	6.6	31	845	735	1,680	320	d110	60	31	9.2		5.8
7	6.6	51	1,200	1,120	905	273	d110	58	25	9.2		5.8
8	7.2	54	721	880	470	225	136	54	24	10	a5	5.8
9	7.8	192	479	595	320	206	183	51	24	11		5.8
10	10	412	388	530	280	365	228	49	24	9.7		5.8
11	9.6	270	334	365	244	385	206	43	24	9.7		5.1
12	9.6	845	270	d320	212	562	183	42	24	9.7		5.1
13	9.6	329	226	d280	198	1,340	d170	42	22	10		5.1
14	9.6	270	199	d240	142	992	d165	38	27	9.7		5.1
15	9.0	913	195	d210	144	512	d155	37	25	9.2	6.2	10
16	10	715	192	d190	150	530	d150	36	23	8.8	5.8	13
17	11	771	189	d170	183	530	d140	32	22	8.8	5.1	12
18	11	814	180	d160	225	454	133	31	22	8.3	5.1	10
19	11	1,440	165	d150	238	338	123	31	22	8.3	4.7	10
20	12	661	159	d140	228	251	116	30	17	7.4	4.7	9.2
21	11	388	437	d135	470	225	112	47	18	6.2	4.7	8.3
22	10	244	490	1,040	442	280	103	42	16	5.8	4.3	8.3
23	9.6	177	1,200	595	432	222	96	40	18	5.1	3.5	7.4
24	9.0	189	1,050	1,480	850	228	90	38	18	4.7	3.5	7.4
25	8.4	721	657	880	470	222	85	37	18	5.8	3.5	7.4
26	8.4	1,420	1,200	470	700	206	87	52	16	5.4	3.5	7.4
27	9.0	1,520	1,990	d380	1,580	198	79	40	17	5.4	4.3	7.4
28	11	2,250	a5,000	d330	1,190	206	77	36	18	5.4	4.3	7.4
29	14	1,240	a3,000	d280	-	222	79	34	17	5.1	4.3	6.6
30	20	545	a1,500	d240	-	161	77	31	15	7.0	5.1	7.4
31	23	-	a1,000	d230	-	116	-	30	-	4.7	5.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	308.8	23	6.0	9.96	0.214	0.25	612
November	16,367	2,250	18	546	11.7	13.06	32,460
December	26,813	5,000	159	865	18.6	21.40	53,180
Calendar year 1945	98,192.0	5,000	2.1	269	5.77	78.36	194,800
January	18,145	1,500	135	585	12.6	14.48	35,990
February	12,691	1,680	142	453	9.72	10.13	25,170
March	12,121	1,340	116	391	8.39	9.67	24,040
April	3,741	228	77	125	2.68	2.99	7,420
May	1,396	75	30	45.0	.966	1.11	2,770
June	660	31	15	22.0	.472	.53	1,310
July	271.6	16	4.7	8.76	.188	.22	539
August	148.4	-	3.5	4.79	.103	.12	294
September	219.2	13	5.1	7.31	.157	.17	435
Watsr year 1945-46	92,882.0	5,000	3.5	254	5.45	74.13	184,200

a No gage-height record; discharge computed on basis of records for East Fork Illinois River near Takilma and Illinois River at Kerby.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Deer Creek near Dryden, Oreg.

Location.- Water-stage recorder, lat. 42°16', long. 123°27', near center of sec. 18, T. 38 S., R. 6 W., 500 feet downstream from confluence of North and South Forks and 5 miles east of Dryden. Prior to Sept. 12, 1946, staff gage at same site and at 1.26 feet higher datum.

Drainage area.- 23 square miles.

Records available.- October 1945 to September 1946 in reports of Geologcial Survey. November 1941 to September 1945 in files of State engineer.

Extremes.- Maximum discharge during year, 2,750 second-feet Dec. 28 (gage height, 6.8 feet, from graph based on gage readings); minimum, 1.2 second-feet Aug. 26 to Sept. 5, Sept. 7-13 (gage height, 0.04 foot).

1941-46: Maximum discharge, that of Dec. 28, 1945; minimum observed, 1 second-foot Sept. 3-7, 22-27, Oct. 2-7, 9, 1942.

Remarks.- Records fair. No regulation. One small diversion above station for irrigation.

Cooperation.- Prior to July 1, 1946, most of field data furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	3.7	136	230	62	178	57	40	14	6.1	2.1	1.2
2	1.6	3.4	105	476	62	142	53	44	13	6.1	2.1	1.2
3	1.6	3.0	99	294	55	123	46	50	13	5.5	2.1	1.2
4	1.3	3.0	258	395	48	103	44	50	12	5.5	1.9	1.2
5	1.3	3.4	286	316	62	105	44	46	11	5.5	1.9	1.2
6	1.3	6.0	g594	239	263	111	42	44	13	4.9	1.9	1.3
7	1.3	4.7	g650	399	193	107	42	42	12	4.9	1.9	1.2
8	2.3	4.7	217	244	136	100	48	40	11	4.9	1.9	1.2
9	2.1	6.0	176	178	111	97	46	37	11	4.9	1.9	1.2
10	1.8	8.9	151	142	94	91	44	36	10	4.3	1.9	1.2
11	1.6	28	122	114	83	83	48	34	10	4.3	1.9	1.2
12	1.6	55	99	97	75	371	70	33	9.5	4.3	1.7	1.2
13	1.3	18	85	83	67	263	94	30	9.5	3.9	1.7	1.2
14	a1.4	20	73	70	55	174	97	28	9.5	3.9	1.7	1.3
15	a1.5	136	62	65	60	153	103	27	9.5	3.9	1.7	1.6
16	a4.8	180	57	60	60	142	108	25	9.5	3.9	1.7	4.0
17	a3.4	184	52	57	62	136	114	25	8.8	3.4	1.6	2.1
18	a3.0	232	48	55	70	117	108	24	8.8	3.4	1.6	1.7
19	a2.5	450	43	53	78	103	91	24	8.8	3.0	1.6	1.5
20	a2.7	106	43	50	78	91	75	22	8.0	3.0	1.3	1.5
21	a2.7	65	48	50	83	80	65	22	8.0	3.0	1.3	1.5
22	a2.5	55	76	70	80	78	53	24	7.3	2.5	1.3	1.5
23	a2.5	52	87	146	73	75	57	20	7.3	2.5	1.3	1.4
24	a2.3	68	108	321	126	70	75	19	6.7	2.5	1.3	1.4
25	2.3	286	184	201	120	70	70	19	6.7	2.5	1.3	1.4
26	2.3	298	348	153	103	67	67	22	6.7	2.5	1.2	1.4
27	2.3	g780	g555	126	399	67	60	21	6.7	2.5	1.2	1.4
28	4.7	g1,430	g1,900	108	289	65	48	19	8.1	2.1	1.2	1.4
29	4.1	g520	g842	86	-	67	50	17	6.1	2.1	1.2	1.3
30	4.1	205	382	78	-	67	46	16	6.1	2.1	1.2	1.3
31	3.7	-	279	67	-	62	-	15	-	2.1	1.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	73.2	4.7	1.3	2.36	0.103	0.12	145
November	5,214.8	1,430	3.0	174	7.57	8.43	10,340
December	8,165	1,900	43	263	11.4	13.20	16,200
Calendar year 1945	30,502.9	1,900	1.3	83.6	3.63	49.31	60,500
January	5,027	476	50	162	7.04	8.13	9,970
February	3,047	399	48	109	4.74	4.93	6,040
March	3,558	371	62	115	5.00	5.75	7,060
April	1,965	114	42	65.5	2.85	3.18	3,900
May	915	50	15	29.5	1.28	1.48	1,810
June	279.6	14	6.1	9.32	.405	.45	555
July	116.0	6.1	2.1	3.74	.163	.19	230
August	49.8	2.1	1.2	1.61	.070	.08	99
September	43.4	4.0	1.2	1.45	.063	.07	86
Water year 1945-46	28,453.8	1,900	1.2	78.0	3.39	46.01	56,430

a Ne gage-height record; discharge computed on basis of records for Slate Creek at Wonder and Sucker Creek near Holland.
g Computed from graph based on gage readings.

Springs in the Walla Walla River Basin, Oreg.-Wash.

Ground-water overflow through many springs on the alluvial fan of the Walla Walla River near Milton and Freewater, Oreg., amounts to about 50,000 acre-feet a year. During the irrigation season practically all the overflow is used to water crops on land not served by diversion from the river. A survey made in 1933 listed 57 springs or spring groups in the area, arranged in "inner," intermediate, "outer" zones concentric about the apex of the alluvial fan.[1]

The inner zone is 3 to 3½ miles downstream from Freewater and extends from the vicinity of Nicholas Spring, which is about half a mile east of the Walla Walla River at McCoy Bridge, to springs in the vicinity of Dugger Creek. Within this zone are fully three-fourths of the springs in the Walla Walla Basin. The intermediate and outer zones, each of which contains only a few springs, are about 2 miles and 4 miles, respectively, beyond the inner zone.

In order to bring about a more effective use of the available water supply through a better understanding of the relation between surface- and ground-water supplies in the basin, discharge measurements of each of the principal springs and measurements of ground-water levels in representative wells have been made and the results published periodically since 1932.

Discharge measurements, in second-feet, of springs in Walla Walla River Basin, Oreg.-Wash., during water year October 1945 to September 1946 †

Springs of the inner zone

Date	Spring	Locality	Discharge (sec.-ft.)
Dec. 6	Nicholas Spring, Oreg.	NE¼NE¼ sec. 24, T. 6 N., R. 35 E., 150 feet above confluence of spring channel and Walla Walla River.	1.05
Mar. 16	....do	....do	1.54
June 27	....do	....do	.95
Sept.21	....do	....do	.97
Dec. 6	Big Spring Branch (west prong), Oreg.	SE¼NW¼ sec. 24, T. 6 N., R. 35 E., at Ballou residence, 75 feet above bridge on county road.	5.83
Mar. 14	....do	....do	4.04
June 27	....do	....do	13.56
Sept.21	....do	....do	7.06
Dec. 6	Big Spring Branch (east prong), Oreg.	NE¼SW¼ sec. 24, T. 6 N., R. 35 E., above flow line of small reservoir supplying two diversion pumps.	2.72
Mar. 14	....do	....do	3.02
June 27	....do	....do	3.81
Sept.21	....do	....do	2.22
Dec. 6	Engle Spring, Oreg.	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., total flow at diversion dam.	2.72
Mar. 16	....do	....do	2.48
June 29	....do	....do	3.27
Sept.24	....do	....do	2.99
Dec. 4	Downing Spring, Oreg.	SE¼SW¼ sec. 23, T. 6 N., R. 35 E., at weir, 200 feet below spring orifice.	dry
Mar. 16	....do	....do	.85
June 26	....do	....do	2.75
Sept.21	....do	....do	1.92
Dec. 4	Haun Spring, Oreg.	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., at Haun farm, 50 feet above highway crossing.	.89
Mar. 14	....do	....do	.67
June 26	....do	....do	2.01
Sept.21	....do	....do	1.44

Springs of the intermediate and outer zones

Dec. 4	McEvoy Spring, Wash.	SE¼NW¼ sec. 10, T. 6 N., R. 35 E., at McEvoy farm, 200 feet above Walla Walla Valley Railway.	2.92
Mar 14	....do	....do	1.52
June 26	....do	....do	4.19
Sept.21	....do	....do	3.95
Dec. 4	Lewis Spring, Oreg.	NW¼NW¼ sec. 23, T. 6 N., R. 35 E., below road crossing.	1.51
Mar. 14	....do	....do	1.33
June 29	....do	....do	2.47
Sept.21	....do	....do	2.25
Dec. 4	Unnamed spring, Wash.	NW¼NE¼ sec. 16, T. 6 N., R. 35 E., at e small diversion structure.	1.70
Mar. 14	....do	....do	.67
June 26	....do	....do	2.68
Sept.21	....do	....do	2.85
Dec. 5	East Mud Creek (west prong), Oreg.	SW¼SW¼ sec. 22, T. 6 N., R. 35 E., at two weirs.	1.29
Mar. 16	....do	....do	1.65
June 29	....do	....do	3.14
Sept.22	....do	....do	2.47
Dec. 5	East Mud Creek (east prong), Oreg.	SE¼SW¼ sec. 22, T. 6 N., R. 35 E., in diversion ditch, 150 feet below diversion dam.	.45

† Measurements by Umatilla County deputy watermaster

[1] Piper, A. M., Robinson, T. W., and Thomas, H. E., Ground water in the Walla Walla Basin, Oreg.-Wash.: Supreme Court of the United States, October term 1935, State of Washington vs. State of Oregon, transcript of record, p. 132 A, October 14, 1935.

Discharge measurements, in second-feet, of springs in Walla Walla River Basin, Oreg.-Wash., during water year October 1945 to September 1946†--Continued

Springs of the intermediate and outer zones--Continued

Date	Spring	Locality	Discharge (sec.-ft.)
Mar. 16	East Mud Creek (east Prong), Oreg.	SE¼SW¼ sec. 22, T. 6 N., R. 35 E., in diversion ditch, 150 feet below diversion dam.	0.70
June 29	....do	....do	1.70
Sept.22	....do	....do	1.39
Dec. 4	East Mud Creek (branch of), Oreg.	SW¼SW¼ sec. 16, T. 6 N., R. 35 E., near Lockwood dwelling.	2.86
Mar. 14	....do	....do	2.45
June 29	....do	....do	5.08
Sept.21	....do	....do	2.60
Dec. 6	South Mud Creek, Oreg	SE¼NW¼ sec. 28, T. 6 N., R. 35 E., at Von der Ahe farm.	3.26
Mar. 16	....do	....do	1.86
July 1	....do	....do	3.69
Sept.23	....do	....do	2.39
Dec. 6	Johnson Creek, Oreg	SE¼NW¼ sec. 29, T. 6 N., R. 35 E., at two weirs	3.92
Mar. 16	....do	....do	2.50
June 29	....do	....do	3.39
Sept.22	....do	....do	3.32
Dec. 5	Dugger Creek, Oreg	NW¼NW¼ sec. 32, T. 6 N., R. 35 E., at two weirs	11.53
Mar. 16	....do	....do	7.85
June 29	....do	....do	16.32
Sept.22	....do	....do	9.75
Dec. 5	Schwartz Spring Branch (south prong), Oreg.	SW¼SE¼ sec. 23, T. 6 N., R. 34 E., at weirs	4.85
Mar. 14	....do	....do	6.20
July 1	....do	....do	7.63
Sept.23	....do	....do	3.45
Dec. 5	Schwartz Spring Branch (north prong), Oreg.	NE¼SW¼ sec. 23, T. 6 N., R. 34 E., in ditch diverting from spring.	2.80
Mar. 14	....do	....do	3.12
July 1	....do	....do	6.51
Sept.23	....do	....do	4.15
Dec. 5	South Mud Creek, Oreg	SW¼SE¼ sec. 13, T. 6 N., R. 34 E., at Krumbaugh farm.	6.22
Mar. 14	....do	....do	5.39
July 1	....do	....do	6.89
Sept.23	....do	....do	5.67

† Measurements by Umatilla County deputy watermaster.

Measurements of stream flow in the Pacific slope basins in Oregon and lower Columbia River Basin made at points other than gaging stations are given in the following table:

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River Basin during water year October 1945 to September 1946

Walla Walla River Basin, Wash.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Oct. 12	Touchet River...	Walla Walla River	On line between secs. 7 and 8, T. 9 N., R. 37 E., at road bridge 1/8 mile south of Bolles.	39.2
Dec. 4	....do.....	....do.....	....do.....	167
Jan. 30	....do.....	....do.....	....do.....	366
Apr. 3	....do.....	....do.....	....do.....	381
May 9	....do.....	....do.....	....do.....	370
June 20	....do.....	....do.....	....do.....	99.8
Aug. 18	....do.....	....do.....	....do.....	26.1
Oct. 15	Wolf Creek.....	East Fork Touchet River.	SW¼ sec. 23, T. 9 N., R. 39 E., 500 feet below Robinson Creek, near Dayton.	20.6
Dec. 5	....do.....	....do.....	....do.....	43.2
Feb. 5	....do.....	....do.....	....do.....	57.2
Apr. 4	....do.....	....do.....	....do.....	88.2
May 14	....do.....	....do.....	....do.....	86.9
June 19	....do.....	....do.....	....do.....	42.9
Aug. 15	....do.....	....do.....	....do.....	22.1
Oct. 15	South Fork Touchet River.	Touchet River....	Sec. 32, T. 10 N., R. 39 E., just above mouth, near Dayton.	2.35
Dec. 5	....do.....	....do.....	....do.....	35.9
Feb. 5	....do.....	....do.....	....do.....	47.1
Apr. 4	....do.....	....do.....	....do.....	68.3
May 14	....do.....	....do.....	....do.....	52.6
June 19	....do.....	....do.....	....do.....	20.6
Aug. 16	....do.....	....do.....	....do.....	1.90
Oct. 12	Patit Creek.....	....do.....	Sec. 30, T. 10 N., R. 39 E., 400 feet above mouth, at Dayton.	*.02
Dec. 5	....do.....	....do.....	....do.....	3.59
Feb. 5	....do.....	....do.....	....do.....	25.6
Apr. 3	....do.....	....do.....	....do.....	42.8
May 9	....do.....	....do.....	....do.....	21.6
June 19	....do.....	....do.....	....do.....	1.97
Aug. 15	....do.....	....do.....	....do.....	*.10

* Estimated.

John Day River Basin, Oreg.

Oct. 18	John Day River..	Columbia River...	Riverside School, below Reynolds Creek, 6 miles southeast of Prarie City.	45.3
Jan. 14	....do.....	....do.....	....do.....	71.6
Mar. 16	....do.....	....do.....	....do.....	85.9
June 14	....do.....	....do.....	....do.....	90.4
Oct. 18	Irrigation canal	John Day River...	Above Reynolds Creek, 6 miles southeast of Prairie City.	*1.5
Jan. 14	....do.....	....do.....	....do.....	0
Mar. 16	....do.....	....do.....	....do.....	0

* Estimated.

Deschutes River Basin, Oreg.

Oct. 3	Davis Creek.....	Deschutes River..	Sec. 5 or 8, T. 22 S., R. 8 E., above unnamed tributary, 14½ miles west of Lapine.	163
Sept.23	....do.....	....do.....	....do.....	209
Nov. 1	....do.....	....do.....	SW¼ sec. 4, T. 22 S., R. 8 E., below unnamed tributary, 14 miles west of Lapine.	179
Oct. 3	Unnamed stream..	Davis Creek.....	Mouth, S½ sec. 5, T. 22 S., R. 8 E.....	15.6
Sept.23	....do.....	....do.....	....do.....	17.1
Apr. 16	Brown Creek.....	Deschutes River..	SE¼NE¼ sec. 30, T. 21 S., R. 8 E., 16 miles west of Lapine.	32.7
May 5	....do.....	....do.....	....do.....	34.1
27	....do.....	....do.....	....do.....	34.1
July 9	....do.....	....do.....	....do.....	39.4
Aug. 5	....do.....	....do.....	....do.....	45.7
Sept.16	....do.....	....do.....	....do.....	47.0
Oct. 2	....do.....	....do.....	SE¼ sec. 29, T. 21 S., R. 8 E., 15 miles west of Lapine.	29.6
Nov. 1	....do.....	....do.....	....do.....	28.4
Apr. 5	Lost River (distributary)	....do.....	NW¼NW¼ sec. 27, T. 18 S., R. 11 E., 500 yards above Arnold Canal intake and 6 miles southeast of Bend.	*2.0
27	....do.....	....do.....	....do.....	1.39
May 17	....do.....	....do.....	....do.....	4.79
June 7	....do.....	....do.....	....do.....	4.51
Aug. 23	....do.....	....do.....	....do.....	*2.5
Sept.18	....do.....	....do.....	....do.....	*2.0
19	Spring Creek....	Metolius River...	Camp Sherman, 400 feet above mouth.....	86.3
Mar. 19	Clear Creek.....	White River.....	Outlet of Clear Lake, 8 miles southeast of Government Camp.	3.28
May 22	....do.....	....do.....	....do.....	56.5
June 27	....do.....	....do.....	....do.....	17.2
Aug. 15	....do.....	....do.....	....do.....	3.02
30	....do.....	....do.....	....do.....	3.14
15	....do.....	....do.....	0.3 mile below Clear Lake outlet.....	5.77
15	....do.....	....do.....	Skyline Road, 0.7 mile below Clear Lake outlet.	6.02

* Estimated.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River Basin during water year October 1945 to September 1946--Continued

Fifteenmile Creek Basin, Oreg.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Apr. 3	Fifteenmile Creek	Columbia River..	Sec. 3, T. 1 S., R. 14 E., 3 miles southwest of Wrentham.	51.3
2	Eightmile Creek..	Fifteenmile Creek.	SE¼ sec. 31, T. 1 N., R. 14 E., 2½ miles northwest of Boyd.	28.5

Klickitat River Basin, Wash.

Jan. 23	Big Muddy Creek..	Klickitat River.	W½ sec. 27, T. 8 N., R. 12 E., at gaging station 9½ miles north of Glenwood.	32.9
Mar. 5	....do.....	....do.....	....do.....	47.2
Apr. 24	....do.....	....do.....	....do.....	165
May 21	....do.....	....do.....	....do.....	263
June 14	....do.....	....do.....	....do.....	266
Aug. 9	....do.....	....do.....	....do.....	142
Oct. 8	Indian Fork Spring No. 1.	....do.....	NW¼NE¼ sec. 4, T. 6 N., R. 13 E., 5½ miles northeast of Glenwood.	13.7
Jan. 20	....do.....	....do.....	....do.....	15.7
Mar. 7	....do.....	....do.....	....do.....	19.1
30	....do.....	....do.....	....do.....	20.9
May 23	....do.....	....do.....	....do.....	15.8
June 21	....do.....	....do.....	....do.....	21.6
Aug. 11	....do.....	....do.....	....do.....	22.0
Sept.24	....do.....	....do.....	....do.....	16.5
Oct. 8	Indian Ford Spring No. 2.	....do.....	N½NE¼ sec. 4, T. 6 N., R. 13 E., 5½ miles northeast of Glenwood.	1.11
Jan. 20	....do.....	....do.....	....do.....	2.26
Mar. 7	....do.....	....do.....	....do.....	3.35
30	....do.....	....do.....	....do.....	3.70
May 23	....do.....	....do.....	....do.....	4.22
June 21	....do.....	....do.....	....do.....	3.28
Aug. 11	....do.....	....do.....	....do.....	2.80
Oct. 8	Wonder Spring No. 1.	....do.....	....do.....	3.67
8	Wonder Spring No. 2.	....do.....	....do.....	2.63
8	Wonder Spring No. 3.	....do.....	SE¼NE¼ sec. 4, T. 6 N., R. 13 E., 5½ milea northeast of Glenwood.	.18
8	Wonder Spring No. 4.	....do.....	....do.....	4.97
7	Cascade Spring...	....do.....	SE¼SE¼ sec. 10, T. 6 N., R. 13 E., at mouth, 6½ miles east of Glenwood.	*40.0
7	Outlet Creek.....	....do.....	SW¼SW¼ sec. 8, T. 6 N., R. 13 E., 4 miles east of Glenwood.	*.05
7	....do.....	....do.....	NW¼NW¼ sec. 14, T. 6 N., R. 13 E., at mouth, 6½ miles east of Glenwood.	63.4

* Estimated.

Little White Salmon River Basin, Wash.

May 24	Cabbage Creek....	Little White Salmon River.	SW¼ sec. 15, T. 4 N., R. 9 E., at mouth, 3 miles northwest of Willard.	11.4
Dec. 30	Broughton Lumber Co. diversion.	....do.....	SW¼ sec. 36, T. 4 N., R. 9 E., at Willard..	9.23
Jan. 11	....do.....	....do.....	....do.....	8.71
Feb. 11	....do.....	....do.....	....do.....	0
Apr. 1	....do.....	....do.....	....do.....	4.96
May 17	....do.....	....do.....	....do.....	23.2
June 19	....do.....	....do.....	....do.....	17.7
Aug. 13	....do.....	....do.....	....do.....	17.8
Sept.25	....do.....	....do.....	....do.....	23.7
May 24	Lava Creek.....	....do.....	NW¼ sec. 1, T. 3 N., R. 9 E., at road crossing at Willard.	200

Kalama River Basin, Wash.

Aug. 21	Kalama River.....	Columbia River..	NE¼SW¼ sec. 33, T. 7 N., R. 1 W., below Italian Creek, 2½ miles northeast of Kalama.	350

Willamette River Basin, Oreg.

Oct. 12	Mill ditch.....	Middle Fork Willamette River.	Second St. Bridge, at Springfield.....	178
May 9	Anderson Creek...	McKenzie River..	Mouth, 5 miles north of Belknap Springs.	a26
June 20	....do.....	....do.....	....do.....	19.3
July 31	....do.....	....do.....	....do.....	a18.3
June 6	Olallie Creek....	....do.....	....do.....	a140
20	....do.....	....do.....	....do.....	142
July 31	....do.....	....do.....	....do.....	a143
Nov. 28	Horse Creek.....	....do.....	Sec. 24, T. 16 S., R. 5 E., 1.3 miles south of McKenzie Bridge.	1,340
Dec. 20	....do.....	....do.....	....do.....	347
30	....do.....	....do.....	....do.....	b2,200
31	....do.....	....do.....	....do.....	b1,580
Jan. 17	....do.....	....do.....	....do.....	518
Mar. 6	....do.....	....do.....	....do.....	700
14	....do.....	....do.....	....do.....	749
Apr. 25	....do.....	....do.....	....do.....	829
June 10	....do.....	....do.....	....do.....	672
Aug. 7	....do.....	....do.....	....do.....	341

a By engineers of Eugene Water Board.
b By Corps of Engineers, War Department.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River Basin during water year October 1945 to September 1946--Continued

Willamette River Basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Dec. 20	South Fork McKenzie River	McKenzie River..	NW¼ sec. 31, T. 16 S., R. 5 E., above Cougar Creek.	488
31	....do.....	....do.....	....do.....	b3,360
Jan. 1	....do.....	....do.....	....do.....	b2,470
18	....do.....	....do.....	....do.....	779
Mar. 7	....do.....	....do.....	....do.....	1,230
14	....do.....	....do.....	....do.....	1,550
Apr. 26	....do.....	....do.....	....do.....	2,040
June 10	....do.....	....do.....	....do.....	824
Aug. 7	....do.....	....do.....	....do.....	274
Nov. 30	Gate Creek.....	....do.....	Highway bridge at Vida.....	b620
Dec. 30	....do.....	....do.....	....do.....	b1,370
Jan. 1	....do.....	....do.....	....do.....	b555
18	....do.....	....do.....	....do.....	b226
Aug. 8	....do.....	....do.....	....do.....	24.8
Oct. 9	Irrigation diversion.	....do.....	Intake, 2 miles southeast of Coburg.....	40.3
Nov. 15	Calapooya River.	Willamette River	Mouth, below power canal at Albany.....	878
May 28	....do.....	....do.....	....do.....	225
Apr. 23	Tumble Creek....	Breitenbush River.	Trail crossing, 1½ miles west of Detroit.	b48.7
24	....do.....	....do.....	0.1 mile above mouth, 1 mile west of Detroit.	55.2
July 24	....do.....	....do.....	Mouth, 1 mile west of Detroit.....	c3.6
Aug. 15	....do.....	....do.....	....do.....	1.70
May 22	Albany power canal.	South Santian River.	Above power plant at Albany.....	265
Sept.20	....do.....	....do.....	....do.....	140
24	Little Luckiamute River.	Luckiamute River	Bridge 1½ miles above mouth, near Suver.....	b13.8
Feb. 27	....do.....	....do.....	Bridge 0.5 mile above mouth, near Suver.....	207
Mar. 14	....do.....	....do.....	....do.....	554
Sept.25	....do.....	....do.....	....do.....	13.8
Nov. 29	South Yamhill River.	Yamhill River...	Above Rock Creek, at Grande Ronde.....	1,210
Feb. 6	....do.....	....do.....	....do.....	3,010
Apr. 3	....do.....	....do.....	....do.....	193
Oct. 3	....do.....	....do.....	Below Rock Creek, at Grande Ronde.....	26.2
Nov. 29	Rock Creek.....	South Yamhill River.	Mouth, at Grande Ronde.....	794
Feb. 6	....do.....	....do.....	....do.....	1,540
Apr. 3	....do.....	....do.....	....do.....	98.2
Oct. 3	Cosper Creek....	....do.....	Mouth, 1½ miles east of Grande Ronde.....	.65
Nov. 29	....do.....	....do.....	....do.....	149
Feb. 6	....do.....	....do.....	....do.....	304
Apr. 3	....do.....	....do.....	....do.....	25.9
Nov. 7	Turner Creek....	North Yamhill River.	Mouth, 4 miles northwest of Yamhill.....	3.03
Feb. 6	....do.....	....do.....	....do.....	398
Apr. 1	....do.....	....do.....	....do.....	42.4
June 9	....do.....	....do.....	....do.....	5.86
May 22	Mill Creek.....	Pudding River...	Mouth, at Aurora.....	14.7
July 18	....do.....	....do.....	....do.....	9.71
Sept.18	....do.....	....do.....	....do.....	10.3

b By Corps of Engineers, War Department.
c Float measurement.

Cowlitz River Basin, Wash.

Sept.10	Cowlitz River...	Columbia River..	SE¼ sec. 1, T. 12 N., R. 2 E., at Harmony bridge, 1 mile north of Mossyrock.	1,500
6	Hall Creek.....	Cowlitz River...	NE¼NW¼ sec. 33, T. 13 N., R. 9 E., ¼ mile above mouth, 2 miles southwest of Packwood.	14.2
6	Johnson Creek...	....do.....	NE¼ sec. 32, T. 13 N., R. 9 E., 500 feet above mouth, 2¾ miles southwest of Packwood.	50.3

Umpqua River Basin, Oreg.

Oct. 3	North Umpqua River.	Umpqua River....	Former gaging station above Rock Creek, near Glide.	774
5	Fish Creek.....	North Umpqua....	NE¼ sec. 15, T. 27 S., R. 3 E., ½ mile above Camas Creek.	39.5

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