Surface Water Supply of the United States 1952

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

Prepared under the direction of J. V. B. WELLS, *Chief, Surface Water Branch*

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Oregon and Washington and with other agencies, by personnel of the Water Resources Division, C. G. Paulsen, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Annual Reports Section.

The data were prepared under supervision of district engineers, Surface Water Branch, as follows:

K. N. Phillips----------Portland, Oreg.
F. M. Veatch----------Tacoma, Wash.

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ILLUSTRATIONS

SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN OREGON AND LOWER COLUMBIA RIVER BASIN, 1952

SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1952. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 12,600 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1952, the Geological Survey and cooperating organizations were maintaining 6,700 gaging stations, including those in Alaska and Hawaii. Miscellaneous discharge measurements were made at many other points in the 1952 water year.

COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Oregon: State of Oregon, C. E. Stricklin, State engineer, and B. R. Chandler, chairman, Oregon State Highway Commission; Fish Commission of Oregon, A. J. Suomela, State Fisheries Director; and the cities of Corvallis, Eugene, McMinnville, Portland, and Coos Bay-North Bend.

Washington: State Department of Conservation and Development, W. A. Galbraith, director, and C. J. Bartholet, Supervisor of Hydraulics; State Department of Fisheries, R. J. Schoettler, director; Walla Walla County; city of Tacoma; and Lewis and Skamania County Public Utility Districts.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 45 gaging stations in Oregon and 8 in Washington.

Assistance was also furnished by the Forest Service, United States Department of Agriculture and the Bureau of Reclamation and Bonneville Power Administration, United States Department of the Interior.

The following organizations aided in collecting records:

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

Washington: Pacific Power & Light Co.

DIVISION OF WORK

The stream gaging was done by the Water Resources Division of the Geological Survey, Carl G. Paulsen, chief hydraulic engineer, under the direction of Joseph V. B. Wells, chief of the Surface Water Branch. The data for stations in the several States were collected and prepared for publication under the supervision of the district engineers at the

offices listed below. The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, chief, Annual Reports Section.

State	District office	Address
Oregon a/	Portland	606 Post Office Building.
Washington	Tacoma	207 Federal Building.

a/ The work was done in collaboration with C. E. Stricklin, State engineer.

Information of a more detailed nature than that published for most of the gaging stations given in this report i on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging station records may usually be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

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

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

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

Runoff in inches 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. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

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 relation to storage for irrigation.

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

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

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

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

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

DOWNSTREAM ORDER OF LISTING GAGING STATIONS

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream

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

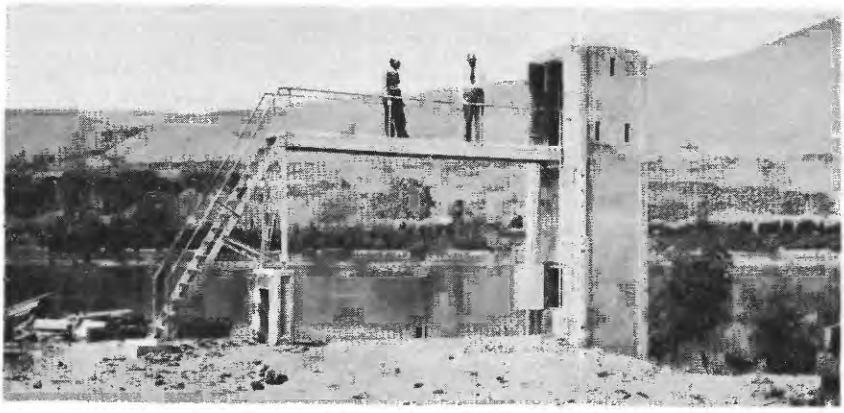
The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

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

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite for determining the slope or fall is obtained by means



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

B, WILLAMETTE RIVER AT ALBANY, OREG.

FIGURE 1.—GAGING-STATION STRUCTURES.

of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. If so, 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, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types of gages, locations, and datums of previous gages for which discharge records are generally equivalent to those at the present site. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (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, a crest-stage indicator, or a non-recording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the report

number, "W" means water-supply paper. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff, in inches, are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff, in inches, resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such 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 corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the values for the maximum day and the minimum day for each month are underlined. If the value is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily values; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Run ff for the month may be expressed in cubic feet per second per square mile (line headed (Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Values for cubic feet per second per square mile and runoff, in inches, are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

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

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

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

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

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

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

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and runoff, in inches, are not published unless storage or diversion records are included to indicate 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 it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

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 actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:
- A, North Atlantic slope basins, Maine to Connecticut.
- B, North Atlantic slope basins, New York to York River.

2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
- A, South Atlantic slope basins, James River to Savannah River.
- B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.

3. Ohio River basin, in two volumes:
- A, Ohio River basin except Cumberland and Tennessee River basins.
- B, Cumberland and Tennessee River basins.

4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
- A, Missouri River basin above Sioux City, Iowa.
- B, Missouri River basin below Sioux City, Iowa.

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 purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

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 Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

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.

Streamflow 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.

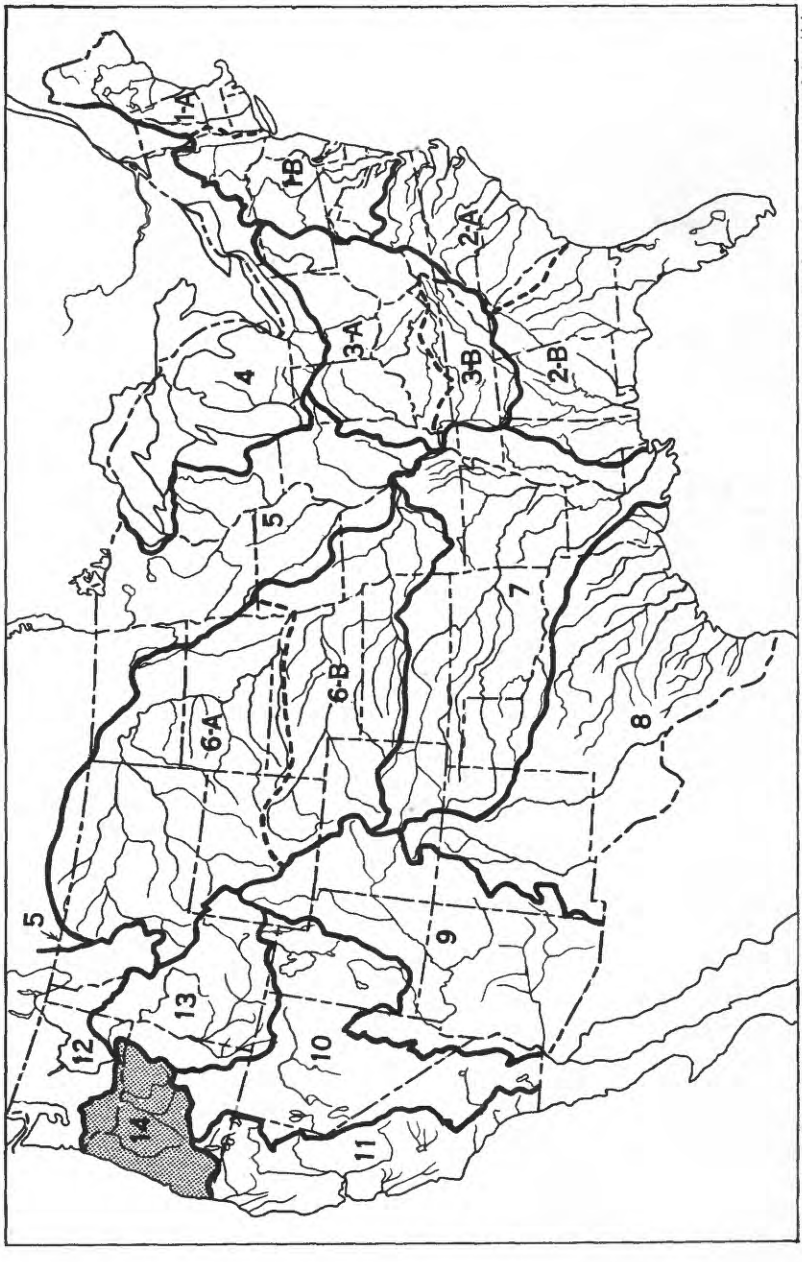


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

Streamflow data for the years 1884-1901, in reports of the Geological Survey--Continued

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

Report	Character of data	Year
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.

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in Pacific slope basins in Oregon and lower Columbia River basin, 1899-1952

Year	W.S.P.	Year	W.S.P.	Year	W.S.P.	Year	W.S.P.	Year	W.S.P.
1899	38	1911	312	1923	574	1933	754	1943	984
1900	51	1912	332-C	1924	594	1934	769	1944	1014
1901	66, 75	1913	362-C	1925	614	1935	794	1945	1044
1902	85	1914	394	1926	634	1936	814	1946	1064
1903	100	1915	414	1927	654	1937	834	1947	1094
1904	135	1916	444	1928	674	1938	864	1948	1124
1905	a177, 178	1917	464	1929	694	1939	884	1949	1154
1906	214	1918	484	1930	709	1940	904	1950	1184
1907-8	252	1919-20	514	1931	724	1941	934	1951	1218
1909	272	1921	534	1932	739	1942	964	1952	1248
1910	292	1922	554						

a Rogue, Umpqua, and Siletz Rivers only.

The records at most of the stations discussed in these reports extend over many 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 are listed in the same order as the streams and gaging stations in the body of the re ort. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

Each of the reports on the surface-water supply for the year 1939 (Water-Supply Paper 884 for the Pacific slope basins in Oregon and lower Columbia River basin) contains, for the area included in that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record had been collected. These summaries were reprinted separately.

Reports also 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 may have been revised), as well as some records not contained in the annual series of water-supply papers. The following table lists reports of this type for the Pacific slope basins in Oregon and lower Columbia River basin.

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

Water-Supply Paper	Period	Report
370.....	1878-1910	Surface water supply of Oregon.
492.....	1878-1919	Summary of hydrometric data in Washington.
870.....	1919-35	Summary of records of surface waters of Washington.

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 pre-

viously published in its water-supply papers. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
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.
Do.....	1936-41	Bull. 10, Water resources of the State of Oregon.	Do.
Washington....	1878-1933	Bull. 5, Monthly and yearly summaries of hydrometric data.	Department of Conservation and Development.

Note.--In addition to the records contained in the reports listed above, the States of Oregon and Washington have issued annual or biennial reports in which are contained records of discharge.

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 notable floods. The following list gives the numbers and titles of these reports:

Water-Supply Paper	Title
96.....	Destructive floods in the United States in 1903.
771.....	Floods in the United States, magnitude and frequency.
1080.....	Floods of May-June 1948 in Columbia River basin.
1137-E.....	Floods of 1950 in Southwestern Oregon and Northwestern California.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1951 to September 1952 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by
Amazon Creek.....	At 19th Street, in Eugene, Oreg.	1950-52	Corps of Engineers.
Big Butte Creek, North Fork.	SW¼ sec. 2, T. 35 S., R. 2 E., 1 mile north of Butte Falls, Oreg.	1928-52	Oregon State engineer.
Big Butte Springs.....	Sec. 17, T. 35 S., R. 3 E., 4 miles east of Butte Falls, Oreg.	1930-52	Do.
Big Marsh Creek.....	NE¼ sec. 20, T. 24 S., R. 7 E., at Hoey Ranch, near Crescent, Oreg.	1924, 1928-52*	Do.
Deschutes River:.....	N½ sec. 7, T. 20 S., R. 11 E., ½ mile below Little Deschutes River, at Peters Ranch, near Lapine, Oreg.	1944-52	Do.
Do.....	SW¼ sec. 31, T. 19 S., R. 11 E., ½ mile below Spring River, near Lapine, Oreg.	1906-9, 1914, 1931-32, 1944-52*	Do.
Do.....	SW¼ sec. 9, T. 19 S., R. 11 E., below Benham Falls, near Bend, Oreg.	1943-52	Do.
Do.....	SW¼ sec. 4, T. 19 S., R. 11 E., ½ mile above Dillon Falls, at Ryan Ranch, near Bend, Oreg.	1943-52	Do.
Do.....	SW¼ sec. 27, T. 18 S., R. 11 E., above Lava Island, near Bend, Oreg.	1943-52	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
Deschutes River.....	Near center sec. 7, T. 18 S., R. 12 E., ½ mile above head of millpond, near Bend, Oreg.	1943-52	Oregon State engineer.
Evans Creek.....	Sec. 29 (revised), T. 34 S., R. 2 W., 3½ miles (revised) above West Fork, 7½ miles north of Sams Valley, Oreg.	1942-52	Do.
Do.....	SW¼ sec. 26, T. 34 S., R. 3 W., near Bybee Springs, 7 miles northwest of Sams Valley, Oreg.	1940-52	Do.
Fish Lake Dam, tunnel at.	SW¼ sec. 3, T. 37 S., R. 4 E., 14 miles east of Lake Creek, Oreg.	1929-52	Do.
Fivemile Creek.....	SW¼ sec. 27, T. 4 S., R. 29 E., 14 miles west of Ukiah, Oreg.	1928-30, 1932-33, 1935-44, 1946-47, 1949-52	
Fourbit Creek.....	Near northwest corner sec. 26, T. 35 S., R. 3 E., 7 miles southeast of Butte Falls, Oreg.	1949-52	Do.
Grave Creek.....	NW¼SW¼ sec. 7, T. 34 S., R. 5 W., 1½ miles west of Placer, Oreg.	1929-30, 1932-52*	Do.
Jumpoff Joe Creek.....	SW¼ sec. 32, T. 34 S., R. 5 W., 7 miles northeast of Merlin, Oreg.	1929-52*	Do.
Little Butte Creek....	SE¼ sec. 19, T. 36 S., R. 2 E., at Lake Creek, Oreg.	1922-24, 1927-47, 1949-52	Do.
Little Butte Creek, North Fork.	Sec. 21, T. 36 S., R. 2 E., above Rogue River Valley Canal intake, near Lake Creek, Oreg.	1932-52*	Do.
Little Butte Creek, South Fork.	NE¼ sec. 21, T. 37 S., R. 4 E., 1 mile south of Big Elk ranger station, near Lake Creek, Oreg.	1932-52*	Do.
Little Walla Walla River.	George St., in Milton, Oreg.	1932-52	Do.
Ochoco Creek.....	NE¼ sec. 6, T. 15 S., R. 17 E., below Ochoco Reservoir, 6 miles east of Prineville, Oreg.	1919-52	Do.
Ochoco Reservoir.....	NW¼ sec. 5, T. 15 S., R. 17 E., 6 miles east of Prineville, Oreg.	1918-52	Do.
Rancheria Creek.....	SE¼ sec. 17, T. 35 S., R. 3 E., 4 miles east of Butte Falls, Oreg.	1935-50, 1952	Do.
Willow Creek.....	Sec. 28, T. 35 S., R. 3 E., 6 miles southeast of Butte Falls, Oreg.	1949-52	Do.

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

Note.--Records through 1941 collected by the Oregon State engineer (some in cooperation with the Bureau of Reclamation of the U. S. Department of the Interior) are contained in bulletins published by that officer. (See table above, "State reports containing compilations of records of discharge.") The other records listed in this table have not been published.

HYDROLOGIC CONDITIONS

Streamflow during the 1952 water year was well above normal in the southern half and near normal in the northern half of the Pacific slope basins in Oregon and lower Columbia River basin. Rain and high temperatures during March caused much of the low elevation snow to melt resulting in flood stages on some streams east of the Cascade Mountains which were the highest in about 40 years. For two key gaging stations in the area covered by this report, a comparison of the monthly and yearly mean discharge during the 1952 water year with the median discharge for the 25-year period 1921-45 is shown in figure 3 on the opposite page.

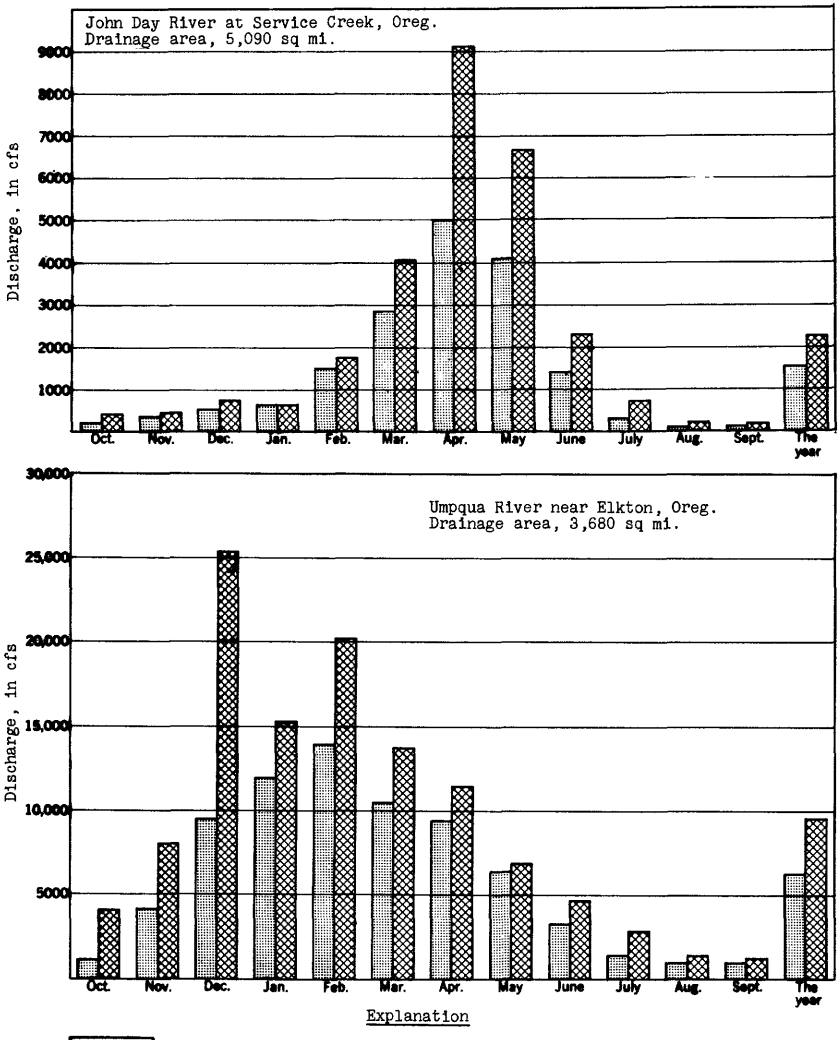


Figure 3.--Comparison of discharge at two key gaging stations during 1952 water year with median discharge for 25-year period.

TRIBUTARIES OF COLUMBIA RIVER BELOW MOUTH OF SNAKE RIVER

WALLA WALLA RIVER BASIN

South Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°50', long. 118°10', in NE¼ sec. 15, T. 4 N., R. 37 E., on right bank 1 mile upstream from Pacific Power & Light Co.'s penstock intake and 13 miles southeast of Milton.

Drainage area.--63 sq mi, approximately.

Records available.--February to October 1903 (gage heights only), August 1906 to November 1917 (incomplete), May 1931 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 2,050 ft (from river-profile map). Prior to Oct. 18, 1931, staff gages at several sites within 1¼ miles of present site at various datums. Oct. 18, 1931, to Mar. 22, 1934, water-stage recorder at site three-quarters of a mile downstream at different datum.

Average discharge.--28 years (1908-15, 1931-52), 174 cfs.

Extremes.--Maximum discharge during year, 649 cfs Apr. 25 (gage height, 2.77 ft), from rating curve extended above 450 cfs; minimum, 116 cfs Sept. 1-3, 14-19 (gage height, 1.57 ft).

1906-17, 1931-52: Maximum discharge recorded, 2,430 cfs Dec. 12, 1946 (gage height, 4.20 ft), from rating curve extended above 240 cfs; minimum, 72 cfs Feb. 14, 1932. Maximum stage known, about 6 ft Mar. 31, 1931, present site and datum.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-23		Oct. 24 to Sept. 30	
1.5	103	1.5	101
1.7	142	1.7	147
2.0	235	2.0	242
2.2	310	2.3	360
		2.7	600

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	162	360	147	326	140	*228	400	271	294	130	118
2	129	159	294	142	351	140	228	375	267	256	130	116
3	164	156	260	142	301	137	232	356	264	225	127	116
4	133	159	235	142	343	137	264	326	267	205	127	*118
5	122	153	222	140	*330	137	400	317	271	192	127	118
6	118	150	202	137	267	134	524	309	286	179	127	118
7	117	147	182	137	242	134	530	309	264	170	127	118
8	117	147	173	137	232	134	395	460	246	167	127	118
9	117	144	167	134	225	140	334	506	239	162	124	127
10	118	150	164	134	211	150	330	488	232	159	124	124
11	122	159	164	134	215	153	*330	470	222	156	124	122
12	124	170	167	134	205	153	317	452	222	153	124	120
13	122	186	167	137	192	150	351	470	205	150	124	118
14	131	192	164	*140	179	147	488	452	195	147	*122	116
15	140	186	162	142	170	144	405	405	215	*144	122	116
16	135	170	167	142	170	147	365	405	192	144	122	116
17	133	162	159	140	164	150	380	400	186	142	122	116
18	129	159	182	137	159	153	488	400	179	140	122	116
19	145	156	179	137	153	150	544	405	179	140	120	116
20	200	156	170	134	153	147	395	410	176	140	120	118
21	176	162	170	132	150	*144	365	400	211	137	118	118
22	188	162	179	132	147	142	370	360	189	137	118	118
23	310	159	173	132	147	156	390	347	179	137	120	118
24	256	159	164	144	144	343	464	343	186	134	120	118
25	205	156	159	144	142	428	565	347	198	134	120	118
26	*173	162	156	150	142	416	586	334	205	132	120	118
27	162	162	156	159	140	385	530	326	202	132	120	118
28	162	202	156	167	140	400	512	321	195	132	118	118
29	202	232	159	173	142	334	410	313	218	130	118	118
30	192	298	153	208	-	286	410	294	298	130	118	*118
31	173	-	150	235	-	253	-	*282	-	130	118	-
Total	4,846	5,077	5,715	4,545	5,882	6,164	12,130	11,782	6,659	4,930	3,800	3,545
Mean	156	169	184	147	203	199	404	380	222	159	123	118
Cfsm	2.48	2.68	2.92	2.33	3.22	3.16	6.41	6.03	3.52	2.52	1.95	1.87
In.	2.86	3.00	3.37	2.68	3.47	3.64	7.16	6.96	3.93	2.91	2.24	2.09
Ac-ft	9,610	10,070	11,340	9,010	11,670	12,230	24,060	23,370	13,210	9,780	7,540	7,030

Calendar year 1951: Max 578 Min 117 Mean 200 Cfsm 3.17 In. 43.13 Ac-ft 144,900
Water year 1951-52: Max 586 Min 116 Mean 205 Cfsm 3.25 In. 44.31 Ac-ft 148,900

Peak discharge (base, 600 cfs).--Apr. 7 (5 a.m.) 635 cfs (2.75 ft); 12 p.m. Apr. 18 to 2 a.m. Apr. 19, 642 cfs (2.76 ft); Apr. 25 (10 p.m.) 649 cfs (2.77 ft).

* Discharge measurement made on this day.

North Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°54', long. 118°16', in NW¼ sec. 23, T. 5 N., R. 36 E., on right bank 1¼ miles upstream from confluence with South Fork and 5 miles southeast of Milton.

Drainage area.--46 sq mi, approximately.

Records available.--October 1940 to September 1952 in reports of Geological Survey. December 1929 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 1,470 ft (from river-profile map). Prior to Oct. 15, 1948, water-stage recorders at several sites about three-quarters of a mile downstream at various datums.

Average discharge.--22 years (1930-52), 48.5 cfs.

Extremes.--Maximum discharge during year, 268 cfs Apr. 14 (gage height, 3.63 ft); minimum, 4 cfs Aug. 31.

1929-52: Maximum discharge observed, 1,980 cfs Dec. 12, 1946 (gage height, 6.97 ft, site and datum then in use), from rating curve extended above 230 cfs; minimum, 1 cfs Aug. 8-17, 1936, Aug. 7-11, 1940.

Remarks.--Records fair. Diversions above station for irrigation of about 220 acres; no regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	5	2.5	71
1.8	11	3.0	147
2.0	22	3.7	266

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	33	113	21	126	28	92	160	42	112	6	5
2	9	29	104	18	176	27	86	150	38	90	6	5
3	18	27	84	19	152	26	84	136	33	71	6	5
4	20	27	72	21	208	26	*92	118	30	55	6	*6
5	13	23	63	20	*188	24	145	107	30	44	6	6
6	10	22	50	19	141	23	210	99	34	36	6	6
7	10	21	40	19	115	22	218	94	29	31	5	6
8	9	20	34	18	101	23	168	156	24	28	6	6
9	8	19	33	18	93	27	144	193	22	23	6	6
10	8	19	31	18	83	40	133	177	21	18	6	6
11	8	21	29	18	81	44	*131	163	21	17	6	6
12	11	24	30	18	75	40	128	152	23	17	6	6
13	10	28	30	17	61	37	141	150	21	17	6	6
14	10	34	29	*17	54	34	255	149	20	14	*6	6
15	14	35	28	17	47	32	225	134	30	*12	5	6
16	14	32	29	18	43	32	191	123	26	12	5	6
17	16	31	28	16	40	33	179	115	*22	12	6	6
18	14	30	34	16	35	34	201	110	20	10	7	5
19	16	28	44	16	34	34	230	112	20	11	6	6
20	36	28	38	17	34	33	196	118	20	10	6	6
21	41	28	34	16	32	*30	169	121	31	8	5	5
22	56	28	54	16	29	29	158	102	27	8	5	6
23	126	27	48	16	28	34	153	92	23	8	6	5
24	125	26	38	17	27	156	165	84	23	8	6	6
25	76	25	34	21	26	201	196	79	27	7	6	6
26	*51	25	31	30	26	199	213	74	34	7	6	6
27	39	27	29	42	27	181	201	65	32	6	6	6
28	34	41	28	57	27	177	196	60	31	6	6	5
29	44	59	28	58	28	150	169	57	37	6	5	6
30	44	74	28	71	-	128	163	49	110	6	5	6
31	36	-	24	87	-	107	-	*46	-	6	5	-
Total	936	891	1,319	792	2,137	2,011	5,032	3,545	901	716	179	173
Mean	30.2	29.7	42.5	25.5	73.7	64.9	168	114	30.0	23.1	5.8	5.8
Ac-ft	1,860	1,770	2,620	1,570	4,240	3,990	9,980	7,030	1,790	1,420	355	343

Calendar year 1951: Max 342 Min 3 Mean 52.0 Ac-ft 37,660
Water year 1951-52: Max 255 Min 5 Mean 50.9 Ac-ft 36,970

Peak discharge (base, 300 cfs).--No peak above base.
* Discharge measurement made on this day.

16, 46

Mill Creek near Walla Walla, Wash.

Location.--Lat 46°00', long. 118°07', in SE¼SE¼ sec. 12, T. 6 N., R. 37 E., on left bank 4 miles downstream from city of Walla Walla diversion dam, 4½ miles upstream from Blue Creek, and 11½ miles southeast of Walla Walla.

Drainage area.--53.9 sq mi.

Records available.--August 1913 to September 1917, April to September 1938, October 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,000 ft above mean sea level, unadjusted. Prior to Oct. 1, 1938, staff gages on left bank at about same site at different datums. Oct. 11 to Nov. 15, 1939, staff gage at same site at datum 13.24 ft higher.

Average discharge.--17 years (1913-17, 1939-52), 98.9 cfs.

Extremes.--Maximum discharge during year, 606 cfs Oct. 24 (gage height, 16.06 ft); minimum, 34 cfs Sept. 23, 24 (gage height, 14.55 ft).
1913-17, 1938, 1939-52: Maximum discharge, 1,920 cfs Feb. 24, 1950 (gage height, 17.10 ft), from rating curve extended above 620 cfs by logarithmic plotting; minimum observed, 16 cfs Oct. 11-15, 1939.

Remarks.--Records good except those for period of ice effect, which are poor. City of Walla Walla diverts about 22 cfs 4 miles above station for municipal use.

Revisions.--W 1218: Drainage area.

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

14.5	28	15.5	279
14.7	53	15.9	494
15.0	113		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	84	359	b60	404	72	190	211	90	151	42	37
2	55	80	297	b55	470	70	183	190	86	131	40	37
3	104	76	228	b55	364	70	183	172	84	111	39	38
4	78	72	194	b55	*494	70	204	157	82	95	39	39
5	56	70	183	b60	416	68	324	148	82	84	39	39
6	50	*67	151	b60	275	67	470	142	86	78	38	38
7	49	76	126	b65	218	67	452	145	80	72	38	38
8	47	84	113	67	197	68	302	208	76	67	38	39
9	46	84	102	65	186	74	239	228	72	63	39	45
10	46	76	*97	65	172	126	222	228	70	62	38	42
11	47	70	92	62	176	129	218	228	67	60	39	*39
12	50	95	97	62	163	113	214	*211	76	56	38	38
13	49	166	99	62	142	*104	239	214	67	55	38	37
14	55	176	97	62	126	95	392	204	63	53	38	36
15	60	136	97	62	116	88	344	180	80	50	38	36
16	62	113	95	60	111	86	275	166	67	50	39	36
17	62	102	88	58	104	88	267	160	*63	50	39	36
18	58	97	111	60	95	92	349	157	63	49	38	35
19	68	92	121	60	90	90	374	163	62	47	38	35
20	216	95	111	62	86	86	267	163	60	46	38	35
21	180	97	111	60	82	82	228	160	86	46	38	35
22	200	97	139	58	78	80	222	154	70	46	38	35
23	419	92	126	58	76	90	225	151	65	46	38	35
24	324	88	113	70	72	247	259	134	65	46	38	35
25	190	84	102	76	70	354	324	131	70	45	37	35
26	134	86	95	84	72	364	334	123	70	45	37	35
27	108	99	90	102	74	324	297	116	70	43	37	36
28	97	160	86	126	74	344	271	113	67	43	37	35
29	108	204	90	142	76	275	218	108	95	*43	37	35
30	104	275	b80	208	-	239	214	99	166	43	37	35
31	95	-	b65	292	-	214	-	95	-	42	37	-
Total	3,267	3,193	3,955	2,493	5,079	4,336	8,300	5,059	2,300	1,918	1,184	1,106
Mean	105	106	128	80.4	175	140	277	163	76.7	61.9	38.2	36.9
Ac-ft	6,480	6,330	7,840	4,940	10,070	8,600	16,460	10,030	4,560	3,800	2,350	2,190

Calendar year 1951: Max 930 Min 39 Mean 116 Ac-ft 83,740
Water year 1951-52: Max 494 Min 35 Mean 115 Ac-ft 83,650

Peak discharge (base, 700 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Blue Creek near Walla Walla, Wash.

Location.--Lat 46°03'40", long. 118°07'50", in SE¼NW¼ sec. 25, T. 7 N., R. 37 E., on right bank 1 mile upstream from mouth and 10 miles east of Walla Walla.

Drainage area.--17.0 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,700 ft above mean sea level, unadjusted. Prior to Oct. 1, 1950, at datum 1,700 ft lower.

Average discharge.--13 years, 16.0 cfs.

Extremes.--Maximum discharge during year, 253 cfs Feb. 2 (gage height, 42.09 ft, from recorded range in stage); maximum gage height, 42.37 ft Jan. 5 (backwater from ice); minimum discharge, 0.6 cfs Aug. 13, 17, 18, 21 (gage height, 40.27 ft).
1939-52: Maximum discharge, 725 cfs Dec. 28, 1945 (gage height, 43.35 ft, present datum); minimum observed, 0.1 cfs Oct. 14, 1939, but may have been less during period of no gage-height record Oct. 1-11, 1939.

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

Revisions (water years).--W 984: 1942.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

40.3	0.7	41.0	31
40.4	1.9	41.3	67
40.5	4.2	41.6	121
40.6	7.4	41.9	192
40.8	16.5		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	6.3	43	b7.0	113	13.5	33	12.5	2.7	6.6	1.0	1.0
2	2.8	6.0	39	b5.0	a180	13	31	11.5	2.7	6.0	.8	1.0
3	10	5.7	31	b5.0	a150	13	31	10.5	2.2	4.8	.8	1.0
4	6.3	5.1	27	b5.0	*192	13.5	35	9.6	2.0	4.2	.8	1.2
5	3.6	5.1	27	b7.0	132	13	54	a8.5	1.9	3.4	.8	1.3
6	2.7	*4.8	22	b10	94	13	75	a7.5	2.4	2.8	.8	1.2
7	2.2	4.8	18.5	12	73	13.5	67	a7.5	2.0	2.7	.8	1.0
8	2.0	4.5	16	11.5	60	14.5	43	a8.0	1.8	2.2	.8	1.3
9	1.8	3.9	13	10.5	53	19.5	32	a9.0	1.8	2.0	.8	1.8
10	1.6	4.2	12.5	11	49	29	27	a12	1.8	1.9	.8	1.6
11	1.9	4.5	*13	10.5	48	31	26	a10	1.8	1.9	.8	*1.3
12	2.2	5.7	14	10	43	29	26	*9.2	2.2	1.6	.8	1.3
13	1.9	14.5	14.5	10	36	*26	29	9.6	1.8	1.4	.7	1.2
14	2.4	22	13.5	10	31	23	67	9.2	1.8	1.4	.7	1.2
15	2.8	18.5	13	10	28	22	57	8.0	2.8	1.4	.8	1.0
16	4.8	16	12.5	b9.0	26	20	43	7.7	1.9	1.3	.8	1.0
17	5.7	13.5	11	b9.0	23	20	39	6.6	*1.8	1.2	.8	1.0
18	5.4	13	15.5	8.8	21	20	41	6.0	1.6	1.2	.8	1.0
19	5.4	12	18.5	8.8	19.5	19.5	41	6.0	1.6	1.2	.8	1.0
20	21	11.5	18	9.2	18.5	19	29	6.3	1.6	1.2	.8	1.0
21	18.5	11.5	22	8.8	16.5	17	25	6.3	4.5	1.2	.8	1.0
22	35	11.5	37	8.8	15	17	22	5.4	2.7	1.2	.8	1.0
23	81	10.5	29	9.2	14	19.5	21	4.8	2.0	1.0	.8	1.0
24	45	9.6	25	11	12	47	19.5	4.5	1.9	1.0	1.0	1.0
25	25	8.8	22	15.5	11.5	78	20	4.2	2.4	1.0	1.0	1.0
26	18	8.4	22	21	12	81	19.5	3.9	2.2	1.0	1.0	1.0
27	14.5	8.8	20	34	12.5	73	17	3.6	2.0	1.0	1.0	1.0
28	11.5	16	16	47	13	73	17	3.4	2.0	.8	1.0	1.0
29	9.6	22	17	53	14	53	13.5	3.1	3.4	*.8	1.0	1.0
30	8.0	32	16	85	-	46	12.5	3.1	7.0	1.0	1.0	1.0
31	7.4	-	b12	101	-	39	-	2.8	-	1.0	.8	-
Total	362.0	320.7	630.5	573.6	1,510.5	928.5	1,013.0	220.3	70.3	61.4	26.2	33.4
Mean	11.7	10.7	20.3	18.5	52.1	30.0	33.8	7.11	2.34	1.98	0.85	1.11
Cfsm	0.688	0.629	1.19	1.09	3.06	1.76	1.99	0.418	0.138	0.116	0.050	0.065
In.	0.79	0.70	1.38	1.25	3.30	2.03	2.22	0.48	0.15	0.13	0.06	0.07
Ac-ft	718	636	1,250	1,140	3,000	1,840	2,010	437	139	122	52	66

Calendar year 1951: Max 303 Min 0.4 Mean 18.1 Cfsm 1.06 In. 14.48 Ac-ft 13,130
Water year 1951-52: Max 192 Min 0.7 Mean 15.7 Cfsm 0.924 In. 12.56 Ac-ft 11,410

Peak discharge (base, 200 cfs).--Feb. 2 (time unknown) 253 cfs (42.09 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.
b Stage-discharge relation affected by ice.

Yellowhawk Creek at Walla Walla, Wash.

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

Records available.--April 1941 to September 1952 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,140 ft (from topographic map). Prior to July 1, 1941, staff gage at site 300 ft downstream at datum 0.62 ft lower.

Average discharge.--11 years, 44.5 cfs.

Extremes.--Maximum discharge during year, 125 cfs Feb. 2 (gage height, 1.74 ft); maximum gage height, 1.95 ft Jan. 2 (backwater from ice); minimum discharge not determined, occurred sometime during period of ice effect in early January.
1941-52: Maximum discharge not determined, occurred June 7, 1941 (gage height, 4.00 ft, site and datum then in use); no flow Nov. 30, Dec. 1, 1949.

Remarks.--Records good except those for periods of ice effect or no 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. Many small diversions above station for irrigation.

Revisions.--W 1094: 1946.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23 to Dec. 30)

0.4	2.0	0.9	17
.5	3.0	1.0	24
.6	4.6	1.2	45
.7	7.3	1.4	73
.8	11.5	1.7	127

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	*40	68	b10	75	44	57	50	50	62	24	19
2	24	*47	51	b1	103	40	66	44	60	67	27	18.5
3	30	45	*47	b1	75	41	72	37	60	66	23	18
4	23	44	50	b1	*95	50	73	32	55	57	22	20
5	24	41	54	b1	78	54	80	*39	60	49	21	21
6	24	40	54	b1	46	52	83	55	60	44	21	22
7	21	43	43	b10	53	54	80	65	55	51	21	22
8	22	50	34	b10	60	57	46	115	50	52	21	22
9	21	55	30	12	55	67	46	100	50	49	23	25
10	21	61	51	26	64	83	45	90	51	46	22	*30
11	22	60	75	*50	83	73	10.5	85	45	43	23	27
12	24	70	78	57	80	68	26	85	55	41	23	25
13	24	103	82	51	68	62	41	100	50	39	21	24
14	24	80	80	58	57	*58	73	90	45	37	21	24
15	28	83	78	51	52	55	57	100	65	35	21	23
16	28	85	78	54	49	54	55	90	*49	35	22	22
17	26	83	72	52	44	57	67	85	50	*34	23	22
18	27	78	72	50	39	61	83	80	45	35	23	21
19	23	72	57	51	43	58	99	80	44	35	22	20
20	21	73	51	47	50	57	64	90	41	34	23	20
21	11	78	51	46	46	50	52	80	75	32	23	20
22	24	80	66	47	44	46	54	70	58	31	21	20
23	30	75	57	49	41	50	54	70	50	29	20	19
24	26	70	46	55	39	88	60	70	46	29	22	18.5
25	21	70	38	62	38	90	83	80	54	26	21	21
26	28	67	b32	72	39	99	82	85	54	29	20	19
27	24	57	b28	72	44	85	62	80	50	25	22	18.5
28	24	80	27	76	45	87	57	70	51	24	19	19
29	29	85	29	85	46	67	49	70	66	24	18	19
30	32	66	27	90	-	55	47	60	70	24	19	20
31	32	-	b20	62	-	50	-	55	-	24	20	-
Total	768	1,981	1,626	1,310	1,651	1,912	1,823.5	2,302	1,614	1,208	672	639.5
Mean	24.8	66.0	52.5	42.3	56.9	61.7	60.8	74.3	53.8	39.0	21.7	21.3
Ac-ft	1,520	3,930	3,230	2,600	3,270	3,790	3,620	4,570	3,200	2,400	1,330	1,270

Calendar year 1951: Max 103 Min 1.1 Mean 36.5 Ac-ft 26,430
Water year 1951-52: Max 115 Min 1 Mean 47.8 Ac-ft 34,730

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record May 6 to June 9, June 11-15; discharge estimated on basis of records for nearby stations and recorded range in stage.

Garrison Creek at Walla Walla, Wash.

Location.--Lat 46°04'25", long. 118°17'10", in NE¼ sec. 22, T. 7 N., R. 36 E., on left bank 30 ft downstream from highway 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 1952 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,130 ft (from topographic map). Prior to June 27, 1941, staff gage at present site and datum.

Average discharge.--11 years, 6.88 cfs.

Extremes.--Maximum discharge during year, 40 cfs Oct. 20 (gage height, 3.10 ft); minimum daily, 0.4 cfs Jan. 2-6.
1941-52: Maximum discharge, 60 cfs May 9, 1948 (gage height, 3.28 ft); maximum gage height, 3.29 ft Dec. 28, 1948 (backwater from ice); no flow for part of May 10, 1941.

Remarks.--Records fair except those for periods of ice effect and those for July to September, 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.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	0.4	2.4	9.2
2.0	1.2	2.6	16
2.1	2.4	2.8	25
2.2	4.3	3.0	34

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	18.5	6.7	b1.0	22	13.5	6.1	8.3	6.5	5.4	1.8	2.9
2	10.5	16	3.9	b.4	30	12	10	7.5	7.0	5.8	2.4	2.9
3	12	15.5	*4.3	b.4	22	13	13.5	6.5	6.3	5.6	2.4	2.8
4	9.5	15.5	2.3	b.4	27	8.2	13.5	5.6	4.9	5.1	2.2	3.1
5	10.5	14.5	1.5	*.4	25	1.8	14	*6.5	5.1	4.3	2.0	3.3
6	11	14	5.6	.4	16	1.8	14.5	8.6	5.4	3.7	1.8	3.1
7	10.5	15	8.0	b1.5	16.5	1.8	14.5	9.2	4.9	4.3	1.8	2.8
8	10.5	17	6.5	b1.5	18	1.8	9.2	11	4.5	4.5	1.8	2.8
9	9.8	19	5.8	1.8	17.5	2.2	9.2	9.2	4.7	4.5	1.8	3.3
10	9.8	20	8.9	3.7	18.5	5.8	11	8.9	4.7	4.1	1.8	*8.9
11	10	20	13	7.5	25	8.0	8.3	8.8	4.3	3.7	1.8	9.5
12	11.5	23	14	8.6	24	7.2	5.8	8.3	4.7	3.9	1.8	8.9
13	11	32	14	7.7	21	6.7	8.3	9.8	4.1	3.3	1.6	8.6
14	12	15.5	14	8.6	17.5	*6.3	14	8.9	4.1	2.9	1.4	8.3
15	14	15.5	13.5	7.2	15.5	6.3	11	9.8	5.8	2.9	1.2	8.0
16	13	15.5	13.5	7.7	15.5	6.1	10.5	9.5	*4.9	2.9	1.2	7.5
17	12.5	15.5	12	8.3	14	6.1	12.5	8.6	4.7	*2.9	1.4	7.2
18	13	14	12	7.5	13	6.5	14.5	8.3	4.3	2.3	1.6	6.7
19	12	14	10.5	7.5	13	6.5	18	8.3	4.3	1.6	1.6	6.3
20	10	13.5	9.2	11.5	15.5	6.3	11.5	9.8	4.3	1.0	1.8	6.1
21	4.3	14	8.9	12	14.5	5.8	9.5	9.5	6.1	1.0	2.0	6.1
22	*4.9	14	11.5	12	14	5.4	9.2	8.6	5.1	1.0	2.0	6.3
23	6.5	14	10	12	13.5	5.6	8.3	8.6	4.5	1.8	2.0	5.8
24	5.8	13	8.6	13	13	8.9	9.8	8.6	4.1	2.2	2.2	5.4
25	4.9	12.5	7.5	14	13	8.6	13	9.8	4.7	2.8	2.6	4.9
26	5.8	12	b5.0	16.5	13	9.8	13	10	4.7	3.1	2.6	5.6
27	5.4	8.3	b5.0	19.5	14	8.0	10	9.8	4.3	2.6	2.9	4.5
28	5.4	12	5.6	21	14	8.9	8.9	8.6	4.5	2.3	2.9	3.7
29	8.0	13	5.8	23	14	7.2	8.0	8.6	5.4	2.0	2.9	3.5
30	15.5	8.3	5.4	26	-	6.3	7.7	7.2	6.7	1.8	2.9	3.1
31	20	-	4.3	18	-	5.6	-	6.7	-	1.8	2.9	-
Total	311.6	464.6	256.8	280.6	509.5	208.0	327.3	267.2	149.6	97.1	63.1	161.9
Mean	10.1	15.5	8.28	9.05	17.6	6.71	10.9	8.62	4.99	3.13	2.04	5.40
Ac-ft	618	922	509	557	1,010	413	649	530	297	193	125	321

Calendar year 1951: Max 32 Min 0.7 Mean 8.44 Ac-ft 6,110
Water year 1951-52: Max 32 Min 0.4 Mean 8.46 Ac-ft 6,140

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

Mill Creek at Walla Walla, Wash.

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

Drainage area.--90.5 sq mi.

Records available.--April 1941 to September 1952.

Gage.--Water-stage recorder with artificial control. Altitude of gage is 1,120 ft (from topographic map). Prior to June 12, 1941, staff gage and June 12, 1941, to Nov. 6, 1947, water-stage recorder, at approximately same site at different datum.

Average discharge.--11 years, 131 cfs (adjusted for diversion).

Extremes.--Maximum discharge during year, 764 cfs Oct. 23 (gage height, 3.96 ft); minimum, 0.5 cfs Aug. 12, 13 (gage height, 1.90 ft).
1941-52: Maximum discharge, 2,760 cfs Dec. 28, 1945; maximum gage height, 5.04 ft Jan. 22, 1950, from high-water mark on outside gage; minimum discharge, 0.5 cfs May 10, 1947, July 23, 24, 1949, Aug. 12, 13, 1952.

Remarks.--Records fair except those for period of ice effect, which are poor. Some regulation at diversion dam, 0.9 mile above station where water is diverted into Yellowhawk and Garrison Creeks for stock and irrigation. Possible diversions at high stages into flood-control reservoir. 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.

Revisions.--W 1014: Drainage area.

Rating table, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.87	0.8	2.5	47
1.9	1.3	2.7	87
2.0	3.6	3.0	174
2.1	7.9	3.4	355
2.2	14	3.8	630
2.3	22		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	41	355	b70	467	41	181	200	36	83	1.0	1.3
2	28	33	339	b68	*614	39	158	185	24	52	1.6	1.1
3	67	33	*249	b65	508	40	151	171	19.5	34	1.1	1.3
4	78	31	204	b70	606	41	164	151	10.5	29	1.3	1.3
5	26	29	192	b80	*574	41	232	*126	8.9	24	1.3	1.4
6	22	26	151	b80	403	40	428	104	7.9	23	1.3	1.8
7	19.5	20	124	b80	277	41	501	94	7.9	9.6	1.3	2.0
8	18.5	19.5	110	80	211	41	385	115	6.9	4.4	1.4	2.6
9	17.5	11.5	100	78	192	46	277	185	6.9	4.0	1.6	2.6
10	17.5	6.9	58	60	167	76	253	174	7.4	3.6	1.3	*2.3
11	17.5	6.0	33	*33	132	92	277	174	6.4	3.4	1.3	2.0
12	20	7.4	34	22	132	90	245	138	6.9	3.0	1.0	1.8
13	19.5	36	36	19.5	118	*90	240	*94	6.4	2.8	.8	1.8
14	21	121	34	21	104	83	415	110	6.4	2.6	.8	2.0
15	25	87	33	17	97	76	409	69	8.4	2.3	1.0	2.3
16	31	56	33	18.5	94	74	301	52	*7.4	2.0	.8	2.8
17	36	36	30	19.5	90	72	263	49	6.4	*1.8	1.0	2.0
18	34	33	49	17	83	74	287	47	7.9	1.6	1.0	1.8
19	47	31	100	17	74	69	391	47	6.9	2.0	.8	1.8
20	185	31	90	17.5	58	67	296	83	6.9	1.8	1.0	1.8
21	196	31	94	17	56	61	228	102	8.4	2.8	1.0	2.0
22	*228	31	144	17	54	60	211	90	6.9	2.3	1.0	1.8
23	*522	31	135	17	52	63	211	83	6.9	1.4	1.1	1.8
24	434	29	124	18.5	49	164	228	61	6.0	1.3	1.1	1.6
25	232	28	104	21	47	312	277	49	6.0	1.6	1.3	1.6
26	154	25	b90	26	44	344	317	44	6.0	2.3	1.1	4.0
27	121	58	b85	51	40	306	287	43	6.0	1.6	1.3	2.3
28	100	97	b85	92	41	306	267	46	6.4	1.4	1.3	2.3
29	94	129	b90	104	41	258	207	44	7.4	1.3	1.3	2.0
30	83	245	b80	167	-	236	192	39	100	1.3	1.1	2.0
31	67	-	b75	355	-	219	-	37	-	1.0	1.3	-
Total	2,975.0	1,399.3	3,480	1,818.5	5,425	3,562	8,279	3,006	363.9	308.2	35.6	59.2
Mean	96.0	46.6	112	58.7	187	115	276	97.0	12.1	9.94	1.15	1.97
Ac-ft	5,900	2,780	6,860	3,610	10,760	7,070	16,420	5,960	722	611	71	117
(†)	2,140	4,890	3,740	3,160	4,280	4,200	4,270	5,100	3,500	2,590	1,460	1,590

Adjusted for diversions

Mean	131	128	172	110	261	183	348	180	70.9	52.0	24.9	28.7
Ac-ft	8,040	7,630	10,600	6,770	15,040	11,270	20,690	11,060	4,220	3,200	1,530	1,710

Observed

Calendar year 1951: Max	1,490	Min	1.7	Mean	105	Ac-ft 75,690
Water year 1951-52: Max	614	Min	0.8	Mean	83.9	Ac-ft 60,880

Adjusted

Calendar year 1951: Mean	149	Ac-ft	108,200
Water year 1951-52: Mean	140	Ac-ft	101,800

* Discharge measurement made on this day.
† Yellowhawk Creek and Garrison Creek diversions, in acre-feet.
b Stage-discharge relation affected by ice.

Dry Creek near Walla Walla, Wash.

Location.--Lat 46°07'20", long. 118°14'10", on south line SW¼ sec. 31, T. 8 N., R. 37 E., on right bank 1 mile downstream from Spring Creek and 6 miles northwest of Walla Walla.

Drainage area.--48.4 sq mi.

Records available.--January 1949 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--Maximum discharge recorded during year, 1,070 cfs Feb. 2 (gage height, 6.94 ft); minimum, 0.6 cfs Aug. 6, 16, 25.
1949-52: Maximum discharge, 3,340 cfs Feb. 22, 1949 (gage height, 11.6 ft, from high-water mark in well), by contracted-opening method at bridge 100 ft downstream from gage; minimum, 0.2 cfs Aug. 4, 1949.

Remarks.--Records good except those for periods of ice effect, which are poor. Several small diversions above station for irrigation. No regulation.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 1

3.2	3.2	3.5	15
3.3	6.0	3.6	22
3.4	10	3.8	43

Note.--Same as following table above 3.8 ft.

Feb. 2 to Sept. 30

3.0	0.4	3.8	43
3.1	1.4	4.0	68
3.2	3.0	4.5	144
3.3	5.6	5.0	260
3.4	9.7	5.5	410
3.6	23		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	*10.5	59	b12	177	23	48	29	6.6	15.5	1.0	1.3
2	6.4	10	53	b11	377	22	44	28	6.0	13	1.2	1.4
3	14.5	10	49	b11	148	22	43	26	5.2	10.5	.9	1.3
4	11	9.6	39	b11	200	24	44	22	4.6	8.2	.8	1.7
5	6.8	9.2	44	b12	137	23	63	20	4.6	7.0	.7	1.8
6	5.4	9.2	31	b12	98	22	86	19	5.2	6.0	.7	2.0
7	5.1	9.2	25	b12	82	22	82	18.5	5.0	4.6	.8	2.0
8	4.5	9.2	21	b13	74	23	60	27	4.1	5.0	.9	2.0
9	4.5	9.2	19	b13	67	40	48	31	4.1	3.8	1.2	3.0
10	4.2	9.2	18	b14	62	50	43	29	4.1	3.4	.9	*5.0
11	4.2	9.6	18	13.5	60	44	41	28	4.4	3.2	1.2	3.0
12	5.7	11	20	12.5	58	40	40	*25	5.0	3.0	1.2	2.6
13	5.1	16.5	*19	12	50	*38	48	24	4.4	3.0	.9	2.4
14	5.1	27	18	13.5	45	32	99	24	4.4	2.4	.9	2.3
15	5.7	22	16.5	12.5	41	30	82	21	8.2	2.1	1.0	2.1
16	6.8	19	16.5	11.5	41	30	65	18.5	6.0	2.0	.9	2.1
17	8.8	17	15	b10	46	30	58	15.5	*4.6	1.8	1.0	2.0
18	7.6	15.5	21	b10	32	31	64	14	4.4	2.0	1.0	1.8
19	7.6	15.5	21	12.5	30	30	69	13.5	4.1	2.0	1.0	1.7
20	19	16.5	21	15	29	29	53	14	3.6	1.8	1.2	1.7
21	18.5	18.5	29	12	28	27	43	15.5	10.5	2.0	1.0	1.8
22	29	18.5	54	11.5	25	25	39	13	7.0	2.0	1.0	1.7
23	113	17	36	11	25	28	38	12	5.6	1.7	.9	1.5
24	62	15.5	29	13	21	63	40	11	4.4	1.7	1.0	1.7
25	36	14.5	23	15.5	23	79	48	9.7	5.0	1.8	.9	1.7
26	25	14	22	21	24	86	48	9.2	5.2	1.7	1.2	1.4
27	19	15	b18	55	24	82	41	8.2	4.4	1.4	1.2	1.5
28	15.5	27	b18	44	23	83	40	7.4	5.0	1.3	1.2	2.1
29	14.5	34	b20	41	24	71	32	7.4	8.2	*1.3	1.0	2.0
30	13	48	b16	*141	-	62	28	7.0	20	1.2	1.0	2.0
31	12	-	b14	152	-	55	-	7.4	-	1.0	1.2	-
Total	501.5	486.9	823.0	761.0	2,071	1,266	1,577	554.8	173.9	117.4	31.0	58.6
Mean	16.2	16.2	26.5	24.5	71.4	40.8	52.6	17.9	5.80	3.79	1.00	1.95
Ac-ft	995	966	1,630	1,510	4,110	2,510	3,130	1,100	345	233	61	116

Calendar year 1951: Max 400 Min 1.2 Mean 30.1 Ac-ft 21,790
Water year 1951-52: Max 377 Min 0.7 Mean 23.0 Ac-ft 16,710

Peak discharge (base, 400 cfs).--Feb. 2 (4 a.m.) 1,070 cfs (6.94 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Touchet River at Bolles, Wash.

Location.--Lat 46°16'30", long. 118°13'15", on line between secs. 7 and 8, T. 9 N., R. 37 E., on right bank just downstream from bridge on State Highway 3E, a quarter of a mile southeast of Bolles and 3 miles west of Waitsburg.

Drainage area.--362 sq mi.

Records available.--February 1924 to October 1929, April 1951 to September 1952.

Average discharge.--5 years (1924-28, 1951-52), 245 cfs.

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map). Prior to Oct. 5, 1929, water-stage recorder at site half a mile upstream at different datum. Apr. 1 to May 6, 1951, staff gage at present site and datum.

Extremes.--Maximum discharge, 4,030 cfs Feb. 2 (gage height, 9.84 ft), from rating curve extended above 1,400 cfs by logarithmic plotting; minimum, 46 cfs Aug. 5 (gage height, 5.16 ft), but may have been less during period of no gage-height record Aug. 9 to Sept. 9; minimum gage height recorded, 4.36 ft Oct. 9.
1924-29, 1951-52: Maximum discharge, 4,470 cfs Jan. 13, 1928 (gage height, 7.04 ft, site and datum then in use); minimum, 1.4 cfs July 30, 1926 (gage height, 0.42 ft, site and datum then in use).

Remarks.--Records fair except those for periods of no gage-height record or faulty intake action, which are poor. Diurnal fluctuation and some regulation at low flow caused by operation of flour mill at Waitsburg. Numerous small diversions for municipal and domestic use and for irrigation.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 1		Feb. 2 to Sept. 30			
4.3	60	5.1	40	5.7	400
4.5	90	5.2	51	6.0	700
5.0	230	5.3	64	7.0	1,350
6.0	725	5.4	85	7.8	1,960
6.8	1,210	5.5	155		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	106	576	195	e1,160	283	*455	488	212	178	52	57
2	87	88	540	195	e1,900	270	444	444	201	145	51	55
3	110	96	450	200	e1,280	270	433	400	201	118	49	53
4	141	98	385	220	e1,850	283	455	387	190	104	48	50
5	80	85	e536	230	*1,370	283	683	361	178	89	48	51
6	74	85	351	210	1,030	258	976	361	190	82	49	55
7	70	87	262	200	874	236	1,050	348	166	72	51	57
8	64	87	220	220	787	247	836	374	155	68	e59	60
9	63	87	206	500	716	258	628	361	155	66	61	63
10	64	88	202	460	682	270	520	309	135	63	51	*61
11	64	110	186	250	673	247	488	322	135	64	50	59
12	70	130	*192	210	628	258	477	258	155	63	49	56
13	71	189	189	205	540	270	499	*387	145	64	48	56
14	76	246	186	220	499	*270	898	433	126	63	48	56
15	92	206	183	210	477	247	892	374	135	60	48	56
16	84	174	186	180	455	258	724	348	126	59	48	55
17	90	153	177	185	433	270	619	348	*104	59	48	53
18	88	147	e311	200	400	296	764	335	89	59	48	53
19	90	138	e171	320	387	270	946	335	85	59	48	52
20	162	138	206	310	374	270	794	348	80	57	48	52
21	150	138	e406	220	348	270	540	374	135	56	48	52
22	*147	135	e545	185	322	270	466	309	104	*56	48	52
23	430	132	360	180	309	283	477	296	93	56	48	52
24	356	128	297	200	296	540	530	270	89	56	49	52
25	216	128	279	260	296	780	700	283	93	57	49	52
26	171	130	292	580	296	868	862	270	104	55	50	51
27	147	141	260	e632	296	808	801	247	98	55	51	52
28	130	212	240	e415	283	856	764	247	98	53	50	53
29	128	284	230	e445	296	764	520	236	111	53	49	52
30	132	430	215	e1,180	-	655	466	247	212	53	51	53
31	122	-	210	*1,110	-	550	-	236	-	52	55	-
Total	3,853	4,396	9,049	10,327	19,257	11,958	19,707	10,336	4,100	2,194	1,550	1,631
Mean	124	147	292	333	664	386	657	333	137	70.8	50.0	54.4
Ac-ft	7,640	8,720	17,950	20,480	38,200	23,720	39,090	20,500	8,130	4,350	3,070	3,240

Calendar year 1951: Max - Min - Mean - Ac-ft -
Water year 1951-52: Max 1,900 Min 48 Mean 269 Ac-ft 195,100

Peak discharge (base, 2,500 cfs).--Feb. 2 (6 a.m.) 4,030 cfs (9.84 ft).
* Discharge measurement made on this day.
e Faulty intake action; discharge computed from partly estimated gage-height record.
Note.--No gage-height record Dec. 26 to Jan. 26, Aug. 9 to Sept. 9; discharge estimated on basis of records for nearby stations.

Touchet River near Touchet, Wash.

Location.--Lat 46°05'25", long. 118°39'40", in NE¼ sec. 15, T. 7 N., R. 33 E., on right bank 100 ft downstream from highway bridge, 3½ miles north of Touchet, and 4½ miles upstream from mouth.

Drainage area.--736 sq mi.

Records available.--April 1941 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 490 ft (from topographic map). Prior to July 3, 1941, staff gage at same site and datum.

Average discharge.--11 years, 254 cfs.

Extremes.--Maximum discharge during year, 4,440 cfs Feb. 2 (gage height, 8.90 ft); minimum, 22 cfs Aug. 7 (gage height, 0.88 ft).
1941-52: Maximum discharge, 13,300 cfs Feb. 10, 1949 (gage height, 14.7 ft, from high-water mark in gage house), by contracted-opening method at Johnson Bridge, 3 miles upstream; minimum, 6.0 cfs Sept. 11, 1951.

Remarks.--Records fair except those for period of ice effect, no gage-height record, or shifting control, which are poor. Many large diversions above station for irrigation. Occasional regulation from unknown source.

Revisions (water years).--W 1124: Drainage area. W 1154: 1946(M).

Rating table, water year 1951-52, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.9	23	3.0	335
1.2	43	4.0	630
1.5	68	6.0	1,670
2.0	130	7.5	2,930
2.5	218		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	111	425	b200	2,030	193	491	*455	163	143	32	32
2	71	103	551	b200	2,900	189	443	425	156	123	30	32
3	72	100	452	b200	1,600	184	428	395	141	108	29	30
4	119	102	*400	b200	1,800	194	425	368	126	94	28	30
5	102	99	460	b220	*1,400	194	440	345	116	79	26	30
6	73	94	378	b240	*1,100	184	574	322	115	72	24	33
7	66	91	298	b220	800	178	781	308	126	69	24	35
8	62	90	240	b220	669	175	839	292	126	65	26	36
9	58	88	216	b220	609	178	713	310	119	60	42	44
10	57	89	200	b700	564	299	564	345	*113	52	46	50
11	56	93	191	340	545	320	494	365	113	45	40	*50
12	53	106	182	212	530	288	461	375	108	40	32	45
13	56	124	182	156	473	275	445	388	116	38	31	42
14	60	200	180	160	419	262	494	398	111	40	29	42
15	64	218	175	180	385	251	741	402	112	38	29	43
16	74	184	170	163	378	245	606	350	116	35	29	42
17	70	161	168	b150	345	*258	524	310	96	32	29	34
18	74	146	175	b150	310	260	518	295	94	38	28	40
19	*71	136	376	194	288	268	602	285	90	50	28	38
20	74	132	230	298	275	253	654	290	83	45	28	37
21	143	130	220	234	251	242	542	300	83	40	28	34
22	122	130	844	144	228	220	449	295	100	45	28	35
23	146	129	422	b140	228	212	416	258	91	*43	27	32
24	461	127	340	b140	210	280	410	234	84	42	26	36
25	262	124	270	b140	204	506	440	222	76	40	27	37
26	191	123	226	b160	200	630	491	214	78	38	29	36
27	154	127	224	b400	198	658	533	206	83	36	32	34
28	130	143	*b220	630	194	658	539	191	82	35	33	34
29	119	238	b230	488	189	669	533	185	80	33	32	37
30	122	352	b270	1,890	-	626	500	187	99	32	28	37
31	119	-	b220	*1,770	-	564	-	177	-	32	32	-
Total	3,365	4,090	9,135	10,759	19,322	9,913	16,088	9,492	3,196	1,682	932	1,117
Mean	109	136	295	347	666	320	536	306	107	54.3	30.1	37.2
Ac-ft	6,670	8,110	18,120	21,340	38,320	19,660	31,910	18,830	6,340	3,340	1,850	2,220

Calendar year 1951: Max 3,400 Min 14.5 Mean 280 Ac-ft 202,500
Water year 1951-52: Max 2,900 Min 24 Mean 243 Ac-ft 176,700

Peak discharge (base, 2,000 cfs).--Feb. 2 (9 a.m.) 4,440 cfs (8.90 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Feb. 3-7, July 8-27; discharge estimated on basis of 3 discharge measurements and records for nearby stations. Shifting-control method used Apr. 18 to July 7.

Walla Walla River near Touchet, Wash.

Location.--Lat 46°01'45", long. 118°43'40", in NW¼SE¼ sec. 6, T. 6 N., R. 33 E., on left bank 2¾ miles southwest of Touchet.

Drainage area.--1,660 sq mi, approximately.

Records available.--October 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 405 ft (from topographic map). Prior to Nov. 27, 1951, staff gage at same site and datum.

Extremes.--Maximum discharge during period, 16,300 cfs Feb. 2 (gage height, 12.10 ft), from rating curve extended above 6,000 cfs on basis of contracted-opening determination at gage height 13.81 ft; minimum, 16 cfs Aug. 7, 8 (gage height, 1.95 ft).
Maximum stage known, 13.81 ft in February 1949, from floodmarks (discharge, 23,800 cfs).

Remarks.--Records good except those below 30 cfs, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Many large diversions for irrigation above station. City of Walla Walla diverts water for municipal supply.

Rating table, Oct. 24, 1951, to Sept. 30, 1952, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	12	5.0	1,260
2.1	30	6.0	2,100
2.4	72	7.0	3,260
2.7	133	8.0	4,860
3.0	220	9.0	6,920
3.5	400	9.6	8,360
4.0	630		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	400	1,310	b620	*4,390	640	1,220	*1,180	271	456	29	26
2	-	372	1,510	b580	8,150	620	1,130	1,020	250	408	26	31
3	-	360	1,240	a560	3,870	615	1,080	908	202	320	22	29
4	-	356	*1,130	a560	4,590	835	1,050	1,130	a184	226	22	27
5	-	340	1,180	a700	4,000	625	1,270	1,030	a170	166	20	31
6	-	328	1,030	698	2,740	605	2,000	938	a160	133	18	34
7	-	313	842	595	2,170	585	2,520	878	a150	112	17	36
8	-	*299	722	565	1,930	585	2,060	908	a140	94	18	38
9	-	292	660	570	1,780	605	1,530	1,200	a130	81	23	59
10	-	285	698	1,820	1,670	860	1,270	1,130	a122	74	42	79
11	-	299	665	*1,080	1,590	926	1,180	1,100	*a120	66	28	*86
12	-	352	655	655	1,570	866	1,100	1,040	152	53	24	86
13	-	368	665	570	1,400	824	1,090	987	133	46	27	85
14	-	570	650	585	1,270	782	1,700	1,040	119	48	24	77
15	†231	615	645	660	1,180	734	2,330	944	119	45	22	83
16	-	565	645	575	1,190	710	1,850	836	122	40	20	83
17	-	510	645	500	1,050	*722	1,620	770	112	35	21	77
18	-	480	665	540	908	740	1,590	716	115	40	22	74
19	-	472	944	570	842	734	1,960	698	98	50	23	74
20	-	456	824	991	812	698	1,880	770	88	45	24	70
21	-	456	782	888	770	665	1,530	788	102	38	25	64
22	-	464	1,590	570	722	625	1,320	734	136	41	24	64
23	-	460	1,130	525	710	820	1,230	640	110	*38	20	64
24	1,630	448	956	520	680	1,050	1,220	570	98	34	18	62
25	956	436	878	575	665	*2,000	1,420	525	94	31	18	59
26	665	432	908	650	655	2,390	1,710	485	102	35	22	55
27	555	448	800	1,890	650	2,160	1,700	440	102	32	23	52
28	472	505	716	1,950	650	2,130	1,620	388	94	32	21	46
29	432	746	b680	1,320	640	1,960	1,390	372	102	36	23	52
30	485	994	b660	*5,000	-	1,830	1,170	336	203	37	22	55
31	432	-	b640	4,610	-	1,430	-	296	-	32	22	-
Total	-	13,421	27,065	32,492	53,244	30,771	45,740	24,797	4,100	2,924	710	1,758
Mean	-	447	873	1,048	1,836	993	1,525	800	137	94.3	22.9	58.6
Ac-ft	-	26,620	53,680	64,450	105,600	61,030	90,720	49,180	8,130	5,800	1,410	3,490

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

Peak discharge (base, 3,000 cfs).--Jan. 27 (10 p.m.) 6,220 cfs (8.68 ft); Jan. 30 (11:30 p.m.) 12,400 cfs (11.00 ft); Feb. 2 (2 p.m.) 16,300 cfs (12.10 ft).

* Discharge measurement made on this day.

† Result of discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for nearby stations and weather records.

b Stage-discharge relation affected by ice.

Umatilla River above Meacham Creek, near Gibbon, Oreg.

Location.--Lat 45°43', long. 118°20', in SW¼ sec. 21, T. 3 N., R. 36 E., on right bank 0.8 mile downstream from Ryan Creek, 2¼ miles upstream from Meachan Creek, and 2½ miles northeast of Gibbon.

Drainage area.--125 sq mi.

Records available.--April 1933 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,855.25 ft above mean sea level, datum of 1929. Prior to June 27, 1939, water-stage recorder at site 1 mile downstream at datum 43.94 ft lower.

Average discharge.--19 years, 223 cfs.

Extremes.--Maximum discharge during year, 1,980 cfs Apr. 7 (gage height, 5.80 ft); minimum, 33 cfs Sept. 19 (gage height, 1.85 ft).
1933-52: Maximum discharge, 6,660 cfs Dec. 12, 1946 (gage height, 8.84 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 28 cfs Sept. 27, 1935, Jan. 9, 1937.

Remarks.--Records good except those for periods of no gage-height record, which are poor.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.8	30	3.5	385
2.0	43	4.0	620
2.5	93	5.0	1,260
3.0	195	5.5	1,680

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	152	475	104	a600	111	439	625	213	225	58	46
2	63	133	394	a100	a800	111	421	590	207	188	56	47
3	92	123	328	a95	a600	108	439	540	201	160	55	49
4	93	118	288	a100	a750	106	511	475	204	141	55	48
5	72	113	264	a105	*620	102	892	426	204	127	54	49
6	65	*108	225	a110	484	102	1,290	403	*225	115	53	49
7	61	105	192	a105	412	106	1,470	390	204	106	52	49
8	58	100	170	a100	367	115	931	782	190	99	54	*48
9	57	98	152	a95	328	137	718	*1,100	185	94	56	51
10	57	96	145	*94	288	204	*655	898	180	89	55	50
11	58	104	135	92	284	219	640	790	170	86	54	49
12	60	125	131	92	256	198	615	706	175	83	*52	45
13	60	150	131	89	219	178	694	665	160	81	49	43
14	65	190	123	91	198	165	1,510	645	152	78	49	42
15	89	195	122	89	180	162	1,240	565	172	76	49	40
16	89	172	127	91	172	165	931	535	150	72	49	38
17	96	160	122	a90	165	178	874	506	137	*71	50	36
18	93	150	131	a88	150	185	1,110	540	127	70	49	35
19	102	141	148	86	a145	178	1,260	488	127	68	49	34
20	219	139	141	87	a140	165	880	530	116	68	48	35
21	284	141	131	86	*133	152	736	484	148	67	49	35
22	349	139	165	85	123	143	694	*430	125	66	49	36
23	686	137	170	85	120	168	712	394	111	64	49	36
24	605	129	150	98	113	942	814	372	*115	63	49	37
25	421	123	137	111	110	1,220	987	362	129	63	49	37
26	296	129	129	127	113	1,320	1,020	340	131	62	49	38
27	228	*131	123	158	115	*1,080	904	316	125	61	49	40
28	192	192	122	a250	115	1,070	832	304	122	58	50	41
29	188	239	123	a300	115	778	655	284	131	57	50	42
30	201	344	118	a700	-	610	620	242	198	56	45	44
31	178	-	111	a400	-	511	-	225	-	58	47	-
Total	5,242	4,376	5,423	4,303	8,215	10,989	25,494	15,952	4,834	2,774	1,581	1,269
Mean	169	146	175	139	283	354	850	515	161	89.5	51.0	42.3
Cfsm	1.35	1.17	1.40	1.11	2.26	2.83	6.80	4.12	1.29	0.716	0.408	0.338
In.	1.56	1.30	1.61	1.28	2.44	3.27	7.58	4.75	1.44	0.83	0.47	0.38
Ac-ft	10,400	8,680	10,760	8,530	16,290	21,800	50,570	31,640	9,590	5,500	3,140	2,520

Calendar year 1951: Max 1,400 Min 43 Mean 244 Cfsm 1.95 In. 26.54 Ac-ft 177,000
Water year 1951-52: Max 1,510 Min 34 Mean 247 Cfsm 1.98 In. 26.91 Ac-ft 179,400

Peak discharge (base, 1,400 cfs).--Mar. 25 (12 p.m.) 1,590 cfs (5.40 ft); Apr. 7 (2 a.m.) 1,980 cfs (5.80 ft); Apr. 14 (4:30 p.m.) 1,720 cfs (5.54 ft); Apr. 18 (10 p.m.) 1,480 cfs (5.27 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for stations at Pendleton and at Yoakum.

Umatilla River at Pendleton, Oreg.

Location.--Lat 45°40'20", long. 118°47'40", in NE¼ sec. 10, T. 2 N., R. 32 E., on left bank a quarter of a mile upstream from Main Street bridge at Pendleton and 2½ miles upstream from McKay Creek.

Drainage area.--637 sq mi.

Records available.--February 1891 to July 1892, May 1903 to June 1905, May 1921 to September 1952. Published as "above McKay Creek near Pendleton" May 1921 to September 1934.

Gage.--Water-stage recorder. Datum of gage is 1,062.54 ft above mean sea level, datum of 1929. February 1891 to July 1892, type of gage and location not known. May 22, 1903, to June 11, 1905, staff gage at Main Street bridge at different datum. May 1, to Oct. 12, 1931, staff gage and Oct. 13, 1921, to Sept. 30, 1934, water-stage recorders, at two sites 200 ft apart 2½ miles downstream at various datums. Supplementary water-stage recorder at site 600 ft upstream at different datum used during low-water periods since Aug. 1, 1942.

Average discharge.--29 years (1923-52), 479 cfs.

Extremes.--Maximum discharge during year, 4,520 cfs Jan. 30 (gage height, 4.9 ft); minimum, 27 cfs Aug. 13-16.

1891-92, 1903-5, 1921-52: Maximum discharge, 15,400 cfs Feb. 22, 1949 (gage height, 9.01 ft); minimum, 7 cfs Aug. 14, 1924.

Maximum flood known, 17,000 cfs Dec. 14, 1882 (date and discharge from data furnished by Corps of Engineers). Flood of May 30-31, 1906, reached a stage of 11.0 ft, present site and datum, but before channel was improved (discharge, 15,500 cfs, estimated by Corps of Engineers).

Remarks.--Records fair. Diversions for irrigation of about 1,100 acres above station; no regulation.

Revisions (water years).--W 934: 1931 (maximum gage height only).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	210	813	180	1,670	274	1,120	1,080	374	320	42	32
2	73	192	858	156	2,380	268	1,030	1,030	340	305	42	33
3	76	180	724	*150	1,650	262	1,040	955	320	255	38	32
4	123	180	665	160	*2,100	262	1,140	856	305	215	36	32
5	94	180	606	186	1,870	256	1,850	764	*290	183	34	*34
6	78	*174	540	198	1,380	244	2,840	716	305	163	33	34
7	76	168	478	198	1,090	244	3,490	684	300	141	33	34
8	71	162	410	192	953	250	2,500	919	265	130	34	38
9	69	150	365	180	818	268	1,840	*2,060	240	120	38	47
10	62	150	336	180	776	399	*1,580	1,800	227	114	34	51
11	251	156	315	180	728	483	1,530	1,520	211	*99	34	47
12	135	180	294	180	*696	476	1,390	1,330	*211	102	*33	44
13	88	217	280	174	600	448	1,480	1,220	207	90	29	42
14	84	308	259	168	532	420	2,640	1,190	199	82	28	42
15	92	358	252	168	483	399	2,860	1,070	219	78	28	39
16	100	336	252	168	469	399	2,220	991	199	70	29	38
17	100	308	245	156	427	406	1,900	928	171	*57	30	36
18	100	294	252	156	385	427	2,000	856	163	61	30	34
19	105	273	287	156	364	427	2,470	820	163	57	32	36
20	130	266	287	162	*343	413	1,940	865	152	55	33	34
21	224	266	273	162	329	385	1,520	796	187	55	32	33
22	266	266	410	162	294	357	1,360	708	187	55	32	38
23	500	266	388	162	287	357	1,320	628	167	53	32	38
24	894	259	350	180	274	1,150	1,380	588	*152	51	32	36
25	564	252	301	198	268	2,580	1,680	559	171	57	29	34
26	418	252	273	266	262	3,410	1,770	*531	195	53	29	33
27	410	259	260	402	*268	*2,820	1,640	496	179	49	34	34
28	273	*294	245	648	274	2,700	1,510	475	191	47	33	36
29	238	388	252	682	274	2,130	1,230	*461	187	44	32	36
30	252	516	259	2,250	-	1,630	1,060	419	250	40	33	36
31	231	-	224	1,100	-	1,340	-	391	-	40	32	-
Total	6,243	7,460	11,753	9,660	22,244	25,884	53,330	27,706	6,727	3,241	1,020	1,113
Mean	201	249	379	312	767	835	1,778	894	224	105	32.9	37.1
Ac-ft	12,380	14,800	23,310	19,160	44,120	51,340	105,800	54,950	13,340	6,430	2,020	2,210

Calendar year 1951: Max 3,350 Min 29 Mean 517 Ac-ft 374,400
Water year 1951-52: Max 3,490 Min 28 Mean 482 Ac-ft 349,900

Peak discharge (base, 3,200 cfs).--Jan. 30 (4 p.m.) 4,520 cfs (4.9 ft); Mar. 26 (7 a.m.) 3,930 cfs (4.52 ft); Apr. 7 (11 a.m.) 3,960 cfs (4.41 ft); Apr. 14 (9 p.m.) 3,340 cfs (3.97 ft).

* Discharge measurement made on this day.

McKay Creek near Pilot Rock, Oreg.

Location.--Lat 45°33'10", long. 118°46'20", in NE¼ sec. 23, T. 1 N., R. 32 E., on left bank 400 ft downstream from highway bridge, three-quarters of a mile upstream from maximum flow line (altitude, 1,322 ft) of McKay Reservoir, and 6 miles northeast of Pilot Rock.

Drainage area.--178 sq mi.

Records available.--May to August 1921, October 1926 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,335.85 ft above mean sea level, datum of 1929 (Pacific Power & Light Co. benchmark). May 7 to Aug. 14, 1921, staff gage near present site at different datum. Nov. 19, 1926, to Sept. 15, 1932, and Sept. 16, 1932, to Apr. 8, 1941, water-stage recorder at site 400 ft upstream at datums 1.4 and 4.4 ft higher, respectively.

Average discharge.--24 years (1926-27, 1929-52), 95.8 cfs.

Extremes.--Maximum discharge during year, 1,160 cfs Mar. 25 (gage height, 4.24 ft); minimum, 0.2 cfs Aug. 23.
1921, 1926-52: Maximum discharge, 6,000 cfs Apr. 1, 1931 (gage height, 10.4 ft, site and datum then in use); no flow at times.

Remarks.--Records good except those below 10 cfs, which are fair, and those for periods of ice effect, which are poor. Diversions for irrigation of about 800 acres above station; no diversions between station and McKay Reservoir.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	0.1	2.0	55
1.2	.7	2.2	92
1.3	2.3	2.5	170
1.4	5.0	3.0	355
1.5	9.0	3.5	610
1.6	14	4.1	1,040
1.8	30		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	27	70	b30	224	72	252	97	28	38	1.2	0.4
2	.6	24	72	b26	475	69	232	97	24	34	1.0	.3
3	.9	23	72	25	465	67	232	88	*23	28	.9	.3
4	1.8	23	72	*b26	*646	64	249	80	*20	23	.9	.3
5	1.7	*22	70	b27	490	62	346	72	17	19	.9	.4
6	1.5	20	69	b28	342	58	445	69	18	17	.9	.4
7	1.5	20	64	b28	270	57	530	65	18	14	.9	.4
8	1.5	19	57	b29	232	57	360	122	16	13	.9	.4
9	1.5	18	52	29	200	62	290	*232	16	11	.9	.3
10	1.5	18	45	29	176	108	*252	204	*15	9.0	.7	*.3
11	1.7	17	44	28	161	128	228	170	14	*8.2	.9	.5
12	1.7	20	41	28	143	122	197	143	13	7.0	*.6	.4
13	1.8	20	39	26	122	115	200	130	10	6.2	.6	.3
14	2.0	25	36	27	108	108	522	143	2.6	5.4	.6	.3
15	2.6	29	34	26	101	99	515	167	2.6	4.2	.5	.3
16	2.6	30	36	b25	99	94	410	167	*2.8	3.9	.5	.3
17	2.6	31	34	b25	86	99	346	146	3.1	3.4	.5	.4
18	2.8	31	34	b25	76	101	310	128	3.6	3.1	.5	.5
19	5.0	31	37	b26	74	99	302	115	3.9	2.6	.4	.5
20	8.2	31	37	26	72	97	249	113	4.2	1.7	.3	.5
21	10	32	37	26	*69	90	210	101	6.2	1.7	.3	.5
22	31	32	45	26	60	84	185	*88	6.6	1.7	.3	.5
23	101	32	62	27	62	92	164	78	6.6	1.7	.3	.5
24	122	33	58	28	58	700	149	69	6.2	1.7	.3	.5
25	84	33	54	38	58	984	143	62	7.0	1.7	.3	.5
26	65	33	b50	64	62	817	135	55	8.6	1.5	.3	.5
27	51	*36	b45	106	67	*677	125	48	9.5	1.7	.3	.5
28	44	37	b40	146	70	592	125	42	9.5	1.5	.3	.5
29	38	48	40	143	72	440	110	39	10	1.3	.3	.5
30	33	58	38	149	-	350	97	36	15	1.2	.4	.5
31	30	-	b35	173	-	294	-	32	-	1.2	.4	-
Total	653.1	853	1,519	1,465	5,140	6,858	7,910	3,198	340.0	268.6	18.1	12.5
Mean	21.1	28.4	49.0	47.3	177	221	264	103	11.3	8.66	0.58	0.42
Ac-ft	1,300	1,690	3,010	2,910	10,200	13,600	15,690	6,340	674	533	36	25

Calendar year 1951: Max 1,240 Min 0.1 Mean 112 Ac-ft 80,740
Water year 1951-52: Max 984 Min 0.3 Mean 77.1 Ac-ft 56,010

Peak discharge (base, 700 cfs).--Feb. 4 (2 a.m.) 712 cfs (3.66 ft); Mar. 25 (7 p.m.) 1,160 cfs (4.24 ft).

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

McKay Reservoir near Pendleton, Oreg.

Location.--Lat 45°36', long. 118°48', in SE¼ sec. 34, T. 2 N., R. 32 E., near right end of McKay dam, 4 miles south of Pendleton.

Drainage area.--186 sq mi.

Records available.--October 1930 to September 1952 in reports of Geological Survey. December 1927 to September 1941 in reports of State engineer.

Gage.--Staff gage. Datum of gage is at mean sea level, adjustment of 1924 (Bureau of Reclamation benchmark). For datum of 1929, supplementary adjustment of 1947, add 0.16 ft.

Extremes.--Maximum contents observed during year, 64,830 acre-ft May 31, June 2 (elevation, 1,314.5 ft); minimum observed, 9,460 acre-ft Sept. 30 (elevation, 1,236.1 ft).
1930-52: Maximum contents, 73,840 acre-ft June 9, 1950 (elevation, 1,322.0 ft); minimum observed, 3,050 acre-ft Oct. 1, Nov. 1, Dec. 1, 1935 (elevation, 1,217.6 ft).

Remarks.--Reservoir is formed by gravel-fill dam with concrete facing completed in 1926; storage began in 1927. Usable capacity, 73,830 acre-ft, between elevations 1,182 ft (floor of trash-rack structure) and 1,322 ft (top of spillway gates). Dead storage about 6 acre-ft, included in contents given herein. Water is used for irrigation of lands along Umatilla River near Echo, Stanfield, and Hermiston.

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

Revisions.--W 1154: Drainage area.

Monthly elevation and contents, water year October 1951 to September 1952

Date	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	1,245.8	13,600	-
Oct. 31	1,248.0	14,640	+1,040
Nov. 30	1,251.1	16,150	+1,510
Dec. 31	1,256.3	18,830	+2,680
Calendar year 1951...	-	-	-21,250
Jan. 31	1,261.0	21,440	+2,610
Feb. 29	1,276.8	31,320	+9,880
Mar. 31	1,294.2	44,630	+13,310
Apr. 30	1,309.9	59,760	+15,130
May 31	1,314.5	64,830	+5,070
June 30	1,306.5	56,170	-8,660
July 31	1,288.2	39,680	-16,490
Aug. 31	1,256.6	18,980	-20,700
Sept.30	1,236.1	9,460	-9,520
Water year 1951-52...	-	-	-4,140

McKay Creek near Pendleton, Oreg.

Location.--Lat 45°36'40", long. 118°48'00", in SE¼NW¼ sec. 34, T. 2 N., R. 32 E., on right bank at irrigation diversion dam, a quarter of a mile downstream from McKay Dam and 4 miles south of Pendleton.

Drainage area.--186 sq mi.

Records available.--November 1918 to September 1923, October 1924 to September 1952 (diversions by irrigation canal at gage not included since 1932).

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,163.71 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Apr. 15, 1919, staff gage at site 2 miles upstream at different datum. Apr. 3, 1919, to Sept. 30, 1923, staff gage at site about a quarter of a mile upstream at different datum. Oct. 1, 1924, to Jan. 14, 1927, staff gage and Mar. 23, 1928, to Nov. 15, 1948, water-stage recorder, at site 30 ft downstream at present datum. Jan. 15, 1927, to Mar. 22, 1928, water-stage recorder at site 250 ft upstream at different datum.

Average discharge.--26 years (1919-23, 1924-27, 1928-43, 1948-52), 93.1 cfs (unadjusted).

Extremes.--Maximum discharge during year, 365 cfs Aug. 14, 15 (gage height, 1.47 ft); no flow Jan. 9 to Feb. 22, Mar. 6, 8-28, but about 2 cfs diverted during this period.
1918-52: Maximum discharge observed, 3,250 cfs Feb. 10, 1921 (gage height, 4.4 ft, site and datum then in use), from rating curve extended above 1,200 cfs; no flow at times.

Remarks.--Records good except those below 10 cfs, which are poor. Diversions above station for irrigation. Also one diversion around station during irrigation season, which may amount to 10 cfs at times during winter, entire flow, seepage only, is diverted as stock water. Flow completely regulated since 1927 by McKay Reservoir.

Revisions.--W 1154: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 21		Feb. 22 to Sept. 30			
0.0	0	0.0	0	0.7	91
.1	2	.1	3	1.0	175
		.3	25	1.5	380
		.5	52		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	2	1	0	2	2	8	10	108	318	306
2	2	2	2	2	0	2	2	8	39	68	318	298
3	2	2	2	2	0	2	2	8	61	56	318	298
4	2	2	1	2	0	1	2	8	*70	110	318	298
5	2	*2	1	2	0	1	2	8	98	162	318	298
6	2	2	1	2	0	0	2	10	*98	178	318	294
7	2	2	2	2	0	1	2	10	98	210	318	290
8	2	2	2	1	0	0	3	10	98	214	326	286
9	2	2	2	0	0	0	3	10	121	234	330	274
10	2	2	2	0	0	0	*3	10	*149	254	330	266
11	2	2	2	0	0	0	3	10	162	*290	330	250
12	2	2	2	0	0	0	3	10	162	310	*345	234
13	2	2	2	0	0	0	3	10	162	218	345	218
14	2	2	2	0	0	0	2	10	162	290	350	159
15	2	2	2	0	0	0	2	8	162	298	365	159
16	2	2	2	0	0	0	3	8	162	306	360	*156
17	2	2	2	0	0	0	2	8	165	340	296	156
18	2	2	1	0	0	0	3	10	182	340	286	153
19	2	2	2	0	0	0	7	11	192	340	335	153
20	2	2	2	0	0	0	7	10	192	335	340	104
21	2	2	2	0	0	0	7	8	192	330	340	3
22	2	2	2	0	0	0	7	*10	192	*330	345	3
23	2	2	2	0	1	0	8	10	*189	330	340	3
24	2	2	2	0	3	0	6	10	175	330	335	3
25	2	2	2	0	3	0	8	10	169	330	335	4
26	2	2	2	0	2	0	8	10	169	330	*322	4
27	2	2	2	0	2	0	8	10	169	330	314	5
28	2	2	2	0	2	1	*8	10	169	330	314	6
29	2	2	1	0	2	2	8	10	156	326	314	6
30	2	2	1	0	-	2	8	10	*140	326	306	4
31	2	-	1	0	-	2	-	8	-	322	306	-
Total	62	60	55	14	15	16	136	291	4,265	8,275	10,135	4,691
Mean	2.0	2.0	1.8	0.5	0.5	0.5	4.5	9.4	142	267	327	156
Ac-ft	123	119	109	28	30	32	270	577	8,460	16,410	20,100	9,300

Calendar year 1951: Max 394 Min 0 Mean 130 Ac-ft 94,130
Water year 1951-52: Max 365 Min 0 Mean 76.5 Ac-ft 55,560

* Discharge measurement made on this day.

Birch Creek at Rieth, Oreg.

Location.--Lat 45°39'10", long. 118°52'40", in SE¼ sec. 13, T. 2 N., R. 31 E., on right bank 300 ft downstream from highway bridge, a quarter of a mile upstream from mouth, and half a mile southwest of Rieth.

Drainage area.--291 sq mi.

Records available.--May 1921 to September 1923, April 1927 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 951.82 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 1, 1921, to Sept. 30, 1923, staff gages near present site at different datums. Apr. 4, 1927, to Jan. 29, 1928, water-stage recorder and Feb. 3, 1928, to Dec. 16, 1931, staff gage, at bridge 300 ft upstream at different datum. Dec. 17, 1931, to Dec. 29, 1939, water-stage recorder at present site at datum 0.86 ft higher.

Average discharge.--23 years (1929-52), 44.2 cfs.

Extremes.--Maximum discharge during year, 630 cfs Apr. 7 (gage height, 3.90 ft); practically no flow at times during September.
1921-23, 1927-52: Maximum discharge, 1,860 cfs June 17, 1950 (gage height, 7.2 ft), from rating curve extended above 400 cfs; no flow at times.

Remarks.--Records good except those below 5 cfs and those for periods of shifting control, which are fair, and those for periods of ice effect, which are poor. Diversions for irrigation of about 4,000 acres above station.

Revisions (water years).--W 984: 1939.

Rating table, water year 1951-52, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss Sept. 9-30)

0.15	0	0.6	4.2	1.5	75
.2	.1	.7	7.0	2.0	154
.3	.4	.8	11	2.5	250
.4	1.0	1.0	24	3.0	375
.5	2.2	1.2	40	3.4	480

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	13	14	b8	47	30	125	90	15	26	0.5	0.1
2	.3	13	20	b8	72	30	106	88	9.4	22	.5	.1
3	.3	13	23	*b8.5	83	30	100	86	6.4	17	.2	.1
4	.3	13	24	8.6	*71	30	98	83	2.4	6.4	.1	.1
5	.3	*13	24	11	72	28	161	71	*.6	4.6	.1	.1
6	.3	15	25	16	74	27	240	58	.5	4.4	.1	0
7	.4	15	24	19	70	26	474	54	.5	3.9	.1	0
8	.5	15	22	21	65	25	298	126	.5	4.2	.1	0
9	.5	14	23	20	88	27	216	*382	.5	1.8	.1	.1
10	.6	13	23	20	38	29	*178	335	.5	.6	.1	*.1
11	1.9	13	22	20	50	33	165	232	.4	.8	.1	.1
12	.5	15	22	20	52	32	158	185	.4	.7	.1	.1
13	.5	16	20	18	45	34	168	163	.5	.6	.1	0
14	.4	16	19	20	45	33	252	159	.4	.6	.1	0
15	.6	16	20	20	44	32	252	142	.4	.6	.1	0
16	.6	17	20	b20	47	30	230	128	.4	.9	.1	0
17	1.1	16	20	b17	41	30	214	110	.4	.7	.1	0
18	.5	16	20	b25	30	31	218	94	.4	.8	.1	.1
19	.9	16	21	25	32	32	252	72	.4	.7	.1	0
20	1.8	16	19	25	35	30	216	68	.4	.7	.1	0
21	2.9	17	19	20	*32	30	183	62	.4	.9	.1	0
22	5.8	16	18	21	26	29	151	*51	.4	.9	.1	.1
23	7.8	15	18	21	34	30	137	44	.3	.7	.1	.1
24	7.8	16	b17	20	30	104	130	41	.3	.7	.1	.1
25	9.0	17	b15	b20	29	200	128	35	.4	.7	.1	0
26	8.6	16	9.8	b25	29	310	130	26	.5	.8	.1	0
27	10	15	9.0	b30	29	255	120	18	.5	.7	.1	0
28	11	14	b8.5	b35	30	242	115	15	5.9	.6	.1	.1
29	12	13	b8.5	37	30	218	102	15	9.8	.6	.1	.1
30	13	13	b8.5	b40	-	182	92	14	15	.6	.1	0
31	13	-	b8	43	-	151	-	16	-	.6	.1	-
Total	113.5	446	564.3	662.1	1,370	2,350	5,409	3,063	73.9	105.8	4.0	1.5
Mean	3.66	14.9	18.2	21.4	47.2	75.8	180	98.8	2.46	3.41	0.13	0.05
Ac-ft	225	885	1,120	1,310	2,720	4,660	10,730	6,080	147	210	7.9	3.0

Calendar year 1951: Max 402 Min 0.1 Mean 60.9 Ac-ft 44,110
Water year 1951-52: Max 474 Min 0 Mean 38.7 Ac-ft 28,100

Peak discharge (base, 300 cfs).--Mar. 26 (5 a.m.) 350 cfs (2.90 ft); Apr. 7 (6 a.m.) 630 cfs (3.90 ft); Apr. 14 (2 p.m.) 300 cfs (2.70 ft); May 9 (11 a.m.) 425 cfs (3.60 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Shifting-control method used Feb. 2-8, May 8-11.

Umatilla River at Yoakum, Oreg.

Location.--Lat 45°40'40", long. 119°02'00", in SW¼ sec. 2, T. 2 N., R. 30 E., at left bank on downstream side of highway bridge, half a mile northeast of Yoakum station and 2½ miles downstream from abandoned Furnish Reservoir.

Drainage area.--1,280 sq mi, approximately.

Records available.--May 1903 to September 1952. Published as "above Furnish Reservoir" August 1916 to September 1934.

Gage.--Water-stage recorder. Datum of gage is 768.21 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 5, 1903, to Aug. 15, 1916, staff gage at site 500 ft upstream at different datum. June 18 to Aug. 28, 1915, staff gage and July 5, 1916, to Sept. 30, 1934, water-stage recorder, at site 5 miles upstream at different datum. Oct. 1, 1934, to Oct. 20, 1948, water-stage recorder at present site at datum 2.0 ft higher.

Average discharge.--49 years, 674 cfs.

Extremes.--Maximum discharge during year, 5,180 cfs Apr. 7 (gage height, 7.90 ft); minimum, 38 cfs Sept. 27 (gage height, 1.58 ft).
1903-52: Maximum discharge, 20,000 cfs May 30, 1906 (gage height, about 15.0 ft, datum then in use, from floodmarks), from rating curve extended above 6,600 cfs on basis of records for station near Umatilla; minimum, 12 cfs Aug. 10-12, 1908.

Remarks.--Records good except those for period of ice effect, which are poor. Diversions above station for irrigation. Slight regulation by Furnish Reservoir, 1910-16. Flow regulated to some extent since 1927 by McKay Reservoir.

Revisions (water years).--W 794: 1906(M).

Rating tables, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 7				Apr. 8 to Sept. 30			
1.8	72	4.0	975	1.5	31	3.0	400
2.0	108	5.0	1,760	1.7	50	4.0	930
2.5	235	6.0	2,750	2.0	95	5.0	1,680
3.0	425	7.5	4,600	2.3	161	6.0	2,650
				2.6	248	6.7	3,460

Discharge, in cubic feet per second, water year October 1951 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*102	248	845	267	1,900	338	1,310	1,190	380	432	348	328
2	97	232	949	217	2,700	331	1,160	1,140	352	404	348	320
3	91	223	797	191	1,980	331	1,140	1,070	368	328	348	320
4	116	211	731	211	*2,370	323	1,210	972	360	298	348	320
5	110	205	670	b235	2,280	320	1,950	864	356	328	344	*320
6	95	*202	590	b270	1,680	308	3,150	798	364	332	344	320
7	87	194	506	b250	1,340	305	4,380	762	384	344	344	320
8	79	191	443	b235	1,160	305	3,080	912	348	340	344	328
9	77	183	416	*b230	1,060	320	*2,150	2,430	348	340	344	340
10	*74	180	367	b225	930	425	1,790	*2,230	368	356	344	324
11	208	183	338	b225	858	550	1,700	1,840	372	380	344	316
12	265	208	320	b220	839	565	1,540	1,570	*368	396	348	298
13	93	235	308	223	731	535	1,570	1,430	368	324	352	287
14	84	301	291	220	648	506	2,690	1,400	364	*328	364	216
15	86	372	281	217	595	474	3,490	1,270	376	352	372	*202
16	102	372	281	214	580	461	2,630	1,160	368	360	372	199
17	110	334	277	205	530	474	2,210	1,070	340	380	352	196
18	110	320	281	220	479	497	2,180	972	332	384	*262	193
19	110	301	312	202	438	497	2,750	924	348	384	336	190
20	125	294	308	205	425	479	2,290	942	336	380	356	190
21	232	287	294	202	412	452	1,780	906	360	376	352	72
22	274	294	434	194	376	425	1,550	798	372	376	360	*52
23	466	291	430	194	359	412	1,490	702	348	376	356	52
24	968	287	394	194	355	1,090	1,510	655	332	376	360	49
25	637	287	370	229	334	2,990	1,800	625	340	364	360	47
26	466	287	338	277	327	*4,290	1,940	595	348	360	356	43
27	372	287	320	452	*323	3,440	1,820	*540	340	360	336	39
28	312	*305	301	703	331	3,200	1,680	500	348	356	328	40
29	277	398	287	743	331	2,550	1,400	481	360	352	324	40
30	281	515	294	2,410	-	1,920	1,190	440	380	348	324	40
31	270	-	270	1,340	-	1,570	-	*409	-	348	328	-
Total	6,776	8,227	13,043	11,420	26,671	30,683	60,530	31,597	10,728	11,162	10,698	6,001
Mean	219	274	421	368	920	990	2,018	1,019	358	360	345	200
Ac-ft	13,440	16,320	25,870	22,650	52,900	60,860	120,100	62,670	21,280	22,140	21,220	11,900

Calendar year 1951: Max 4,800 Min 74 Mean 737 Ac-ft 533,900
Water year 1951-52: Max 4,380 Min 39 Mean 622 Ac-ft 451,400

Peak discharge (base, 3,600 cfs).--Jan. 30 (7 p.m.) 4,970 cfs (7.76 ft); Mar. 26 (9:30 a.m.) 4,900 cfs (7.71 ft); Apr. 7 (2 p.m.) 5,180 cfs (7.90 ft); Apr. 15 (12 to 3 a.m.) 3,850 cfs (7.00 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

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

Location.--Lat 45°32'40", long. 119°18'40", in SW¼ sec. 22, T. 1 N., R. 28 E., on right bank half a mile below Mattlock Canyon, 6 miles southeast of settlement of Pine City, and 20 miles south of Hermiston.

Drainage area.--291 sq mi.

Records available.--October 1945 to September 1952 in reports of Geological Survey. April 1928 to September 1941 in reports of State engineer and October 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (by barometer). Apr. 10, 1928, to Sept. 30, 1944, at datum 1.1 ft higher and Oct. 1, 1944, to Sept. 6, 1949, at datum 1.0 ft higher.

Average discharge.--20 years (1929-30, 1931-32, 1933-41, 1942-52), 22.1 cfs.

Extremes.--Maximum discharge during year, 301 cfs Mar. 26 (gage height, 3.48 ft); minimum, 0.5 cfs Aug. 13-26, Sept. 2.
1928-52: Maximum gage height, 12.4 ft, present datum, Feb. 21, 1949 (discharge not determined); no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Diversions for irrigation of about 600 acres above station; for about 20 days each year not over 30 cfs may be diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River basin.

Revisions (water years).--W 1218: 1950(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 25				Mar. 26 to Sept. 30			
0.8	1.2	1.5	29	0.7	0.2	1.3	15
.9	2.5	2.0	73	.8	.6	1.5	26
1.0	4.7	2.5	135	.9	1.6	2.0	70
1.1	7.9	3.0	215	1.0	3.3	2.5	130
1.3	17			1.1	6.0	3.1	233

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	4.4	7.9	a5.5	21	18	76	54	12	21	1.0	0.6
2	1.9	4.4	12	*5.3	42	18	69	53	9.2	17	1.0	.5
3	2.2	4.4	12	a5.5	47	18	*71	46	*8.8	14	.9	.6
4	2.5	4.7	11	a6	*43	18	78	45	8.4	12	.8	.7
5	2.5	4.7	9.5	a6.5	48	18	105	39	8.4	10	.7	.7
6	2.7	4.7	9.5	a7	42	17	133	36	8.4	9.2	.6	.8
7	3.0	5.0	8.3	a8	37	16	154	39	8.0	8.0	.6	.9
8	2.9	5.0	5.9	a9	35	16	*120	52	8.0	7.2	.6	1.0
9	2.9	5.0	5.6	9.5	35	16	98	141	8.0	5.7	.6	*2.2
10	3.0	5.3	7.2	10	33	19	88	113	9.2	4.8	.6	1.7
11	3.2	5.0	8.3	10	34	22	83	94	10	2.9	.7	1.2
12	2.9	5.6	8.3	b9.5	35	22	77	83	11	2.5	*.7	1.0
13	3.2	5.6	8.7	8.3	28	22	78	76	10	2.0	.6	.9
14	3.2	6.2	6.8	b8	27	22	96	77	10	1.9	.5	1.0
15	3.2	6.2	8.3	b8	28	21	92	68	10	1.9	.5	1.0
16	3.4	6.2	8.7	b8	28	21	83	60	11	1.6	.5	1.0
17	3.4	5.9	8.7	7.6	25	21	78	53	11	1.3	.5	1.0
18	3.4	5.9	8.7	10	19	24	78	46	*10	2.2	.5	1.0
19	3.4	5.9	9.1	10	19	23	85	43	9.2	2.2	.5	1.0
20	*3.6	6.2	9.1	11	*22	22	81	46	8.8	2.2	.5	.9
21	3.6	*6.8	8.7	9.5	20	21	71	45	8.8	2.2	.5	.9
22	4.7	6.5	9.1	9.5	16	21	64	39	10	2.2	.5	1.0
23	5.0	6.5	9.1	9.5	19	20	59	*32	9.2	2.2	.5	1.0
24	4.7	6.5	a8.5	9.1	19	*42	59	27	7.6	2.0	.5	1.0
25	5.0	6.5	a8	b10	18	186	60	25	9.2	1.7	.5	1.0
26	4.7	7.2	a7.5	b11	18	*231	65	21	11	1.6	.6	.9
27	4.4	6.8	a7	b12	18	161	71	18	11	1.5	.6	.9
28	4.4	6.8	a7	b13	18	156	69	16	16	1.2	.7	.9
29	4.4	7.2	a7	14	18	126	66	14	16	1.1	.7	.9
30	4.2	7.6	a6.5	b18	-	102	57	16	16	1.1	.7	.9
31	4.4	-	a6	21	-	86	-	14	-	1.1	.6	-
Total	107.7	174.7	258.0	299.3	812	1,546	2,464	1,531	304.2	147.5	19.3	29.1
Mean	3.47	5.82	8.32	9.65	28.0	49.9	82.1	49.4	10.1	4.76	0.62	0.97
Ac-ft	214	347	512	594	1,610	3,070	4,890	3,040	603	293	38	58

Calendar year 1951: Max 250 Min 0.5 Mean 31.4 Ac-ft 22,760
Water year 1951-52: Max 231 Min 0.5 Mean 21.0 Ac-ft 15,270

Peak discharge (base, 200 cfs).--Mar. 26 (6:30 a.m.) 301 cfs (3.48 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for Birch Creek at Rieth and McKay Creek near Pilot Rock.
b Stage-discharge relation affected by ice.

Umatilla River near Umatilla, Oreg.

Location.--Lat 45°54'20", long. 119°20'00", in NE¼ sec. 21, T. 5 N., R. 28 E., on left bank 1½ miles downstream from West Division main canal of Umatilla project and 2 miles upstream from Umatilla and mouth of river.

Drainage area.--2,290 sq mi, approximately.

Records available.--October 1903 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 330.57 ft above mean sea level, datum of 1929. Prior to Jan. 26, 1931, staff gage at same site and datum.

Average discharge.--49 years, 506 cfs.

Extremes.--Maximum discharge during year, 4,530 cfs Jan. 31 (gage height, 5.71 ft); minimum, 6.2 cfs May 26.
1903-52: Maximum discharge observed, 19,600 cfs May 31, 1906 (gage height, 11.0 ft), from rating curve extended above 11,000 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good. Many diversions above station for irrigation; Brownell Canal diverts below station. Flow regulated by McKay and Cold Springs Reservoirs (Cold Springs Reservoirs is an off-channel reservoir).

Revisions.--W 794: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.9	6.5	2.5	70
2.0	9.5	2.7	135
2.1	14	3.0	270
2.2	21	3.5	620
2.3	32	4.0	1,170
2.4	48	5.3	3,640

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	250	612	376	1,800	265	1,170	548	10	124	8.5	12
2	28	240	887	350	2,480	265	944	532	11	171	9.2	*16
3	15	220	*780	288	2,280	*265	790	488	*10	100	9.2	21
4	12	202	692	282	2,140	260	740	402	8.5	55	8.5	20
5	12	180	620	294	2,400	255	1,070	306	8.5	35	8.2	28
6	14	167	556	350	1,880	245	2,180	202	11	29	14	28
7	13	163	495	382	1,400	240	3,220	171	13	38	15	22
8	12	167	430	369	1,320	235	3,260	139	10	29	25	24
9	12	163	382	376	1,180	240	1,750	1,230	10	25	25	59
10	12	167	350	376	1,080	270	1,230	1,620	11	13	20	85
11	11	180	312	336	800	395	1,040	1,250	11	11	21	76
12	141	184	288	312	720	451	968	1,000	12	13	*20	70
13	80	180	270	294	710	430	909	865	20	11	21	57
14	21	202	250	276	750	409	1,460	790	16	30	20	59
15	13	282	235	*265	556	382	3,050	740	18	9.5	16	50
16	12	343	220	260	525	356	2,600	629	26	8.8	12	37
17	12	324	220	255	495	288	1,980	532	23	8.5	15	34
18	20	300	225	235	444	265	1,560	444	15	9.2	50	34
19	24	276	225	260	395	270	1,780	350	12	9.5	30	56
20	*95	260	255	255	369	265	2,080	306	12	9.5	26	20
21	220	260	240	260	362	235	1,520	324	24	*9.5	23	16
22	350	255	260	255	336	216	*1,100	225	35	10	23	15
23	451	265	382	235	300	250	876	132	37	10	18	15
24	920	260	376	230	294	308	932	57	34	9.5	16	15
25	843	255	330	240	276	2,240	1,280	22	37	9.2	15	15
26	629	260	318	288	270	3,430	1,560	*8.2	40	9.5	19	14
27	525	250	376	356	265	3,600	1,430	12	40	8.2	19	14
28	458	255	444	647	265	3,090	1,070	11	52	8.2	20	14
29	388	294	423	800	265	2,860	876	9.5	55	8.2	19	14
30	294	409	350	1,380	-	1,980	612	12	79	7.3	16	14
31	270	-	423	2,160	-	1,440	-	14	-	7.3	17	-
Total	5,922	7,213	12,226	13,042	26,357	25,700	45,037	13,370.7	701.0	835.9	578.6	954
Mean	191	240	394	421	909	829	1,501	431	23.4	27.0	18.7	31.8
Ac-ft	11,750	14,310	24,250	25,870	52,280	50,980	89,330	26,520	1,390	1,660	1,150	1,890

Calendar year 1951: Max 4,440 Min 6 Mean 564 Ac-ft 408,400
Water year 1951-52: Max 3,600 Min 7.3 Mean 415 Ac-ft 301,400

Peak discharge (base, 2,800 cfs).--Jan. 31 (1;30 a.m.) 4,530 cfs (5.71 ft); Feb. 2 (9 p.m.) 3,320 cfs (5.15 ft); Mar. 27 (1 to 3 a.m.) 4,050 cfs (5.49 ft); Apr. 8 (4 to 7 a.m.) 4,050 cfs (5.49 ft); Apr. 15 (4 to 9 p.m.) 3,140 cfs (5.06 ft).
* Discharge measurement made on this day.

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 headgate 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.

Water diverted by all of 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 land 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 1952; records for some of the canals published separately prior to 1926.

Diversions, in acre-feet, water year October 1951 to September 1952

Month	Furnish Canal	Umatilla project feed canal	Western Land Canal	Allen Canal	Maxwell Canal	West Division main canal
October	0	†1,150	3,600	870	1,590	6,290
November	0	11,190	-	-	-	0
December	0	10,120	-	-	-	0
January	0	3,530	-	-	-	0
February	0	8,640	-	-	-	0
March	0	9,060	-	-	-	3,730
April	5,530	5,680	13,260	1,280	4,240	11,110
May	8,250	11,530	14,060	304	4,380	12,360
June	7,820	56	12,850	613	3,280	11,690
July	8,020	0	12,310	550	2,360	11,880
August	8,130	0	11,890	603	2,560	11,810
September	3,120	0	7,790	480	2,060	10,080
Water year 1951-52	40,870	†60,960	-	-	-	78,950

† Of this amount, 400 acre-ft did not reach reservoir but was spilled back to river.

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.

Willow Creek at Heppner, Oreg.

Location.--Lat 45°21', long. 119°32', in SE¼ sec. 35, T. 2 S., R. 26 E., on right bank 100 ft upstream from Court Street bridge, 800 ft southeast of Morrow County courthouse, and a third of a mile downstream from Balm Fork.

Drainage area.--87 sq mi, approximately.

Records available.--May 1951 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,952.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 164 cfs May 9 (gage height, 3.11 ft); no flow for many days during July, August, and September.
1951-52: Maximum discharge, that of May 9, 1952; no flow at times.
Maximum discharge known, about 36,000 cfs June 14, 1903, by slope-area method.

Remarks.--Records excellent except those for periods of ice effect and those for periods of backwater from aquatic growth, which are fair. Many diversions above station for irrigation of about 500 acres. Part of flow of Ditch Creek, in John Day River basin, is diverted to Willow Creek above station.

Rating tables, water year 1951-52, except periods of ice effect or backwater from aquatic growth (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 26				Mar. 27 to Sept. 30			
0.8	0.2	1.5	18	0.8	0.3	1.4	17
.9	1.3	1.8	33	.9	1.6	1.8	37
1.0	2.9	2.0	45	1.0	3.6	2.2	66
1.1	5.0	2.5	84	1.1	6.0	3.0	150
1.3	10			1.2	9.0		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	4.3	8.7	b4.6	17	11	41	42	9.4	21	0	0
2	.4	3.7	9.3	b5.0	34	10	38	39	9.0	20	0	0
3	.6	5.5	7.8	b4.6	32	*11	35	35	7.5	17	.1	0
4	.8	5.2	*7.2	b5.0	*35	11	35	31	6.3	13	.1	0
5	.6	5.0	6.5	b5.5	35	10	45	28	4.7	13	.3	0
6	.6	4.8	6.2	b5.5	31	10	63	26	6.3	11	.3	2.0
7	.4	4.8	4.6	b5.0	27	9.6	73	26	6.0	9.8	.3	.5
8	.3	4.6	b4.6	5.0	24	9.3	57	72	5.2	8.1	.3	.2
9	.3	4.1	b7.0	5.2	22	10	43	150	5.2	5.7	.3	*.7
10	.4	4.1	6.8	5.0	21	12	38	110	9.4	3.6	.3	.3
11	.4	4.8	6.5	5.0	20	13	35	91	13	1.9	.3	.3
12	.4	5.8	6.0	b5.5	18	12	35	72	12	2.5	*.3	.2
13	.4	6.0	5.8	5.5	15	13	36	69	9.8	2.1	.2	.2
14	.4	6.0	b5.5	5.5	16	13	49	70	9.4	1.9	.2	.2
15	.4	5.8	5.8	5.5	16	13	47	64	15	1.9	.2	.2
16	1.1	4.8	6.0	*b6.0	16	13	42	56	15	2.9	.2	.1
17	*3.1	4.1	5.8	b5.5	13	13	39	52	13	2.3	.2	.1
18	4.1	5.5	5.5	5.5	12	13	36	47	11	3.4	.2	.2
19	4.1	5.5	5.2	5.5	13	13	47	42	10	4.3	.1	.3
20	4.6	5.0	5.5	5.5	12	13	49	43	9.8	4.3	.1	.4
21	4.6	5.8	5.2	5.5	11	13	41	38	16	3.8	.1	.5
22	5.5	5.8	6.0	5.2	10	11	35	32	15	*3.6	.1	.5
23	7.5	4.6	5.8	5.5	12	12	*33	27	13	2.7	.1	.5
24	8.7	4.1	b5.0	7.2	10	27	34	22	13	2.3	.1	.5
25	6.8	5.2	b5.5	7.8	10	68	41	19	13	2.7	0	.4
26	5.8	6.5	b6.0	9.0	11	*84	57	*15	13	2.7	0	.3
27	6.0	6.0	b6.0	9.6	11	78	56	13	10	1.8	0	.3
28	5.8	6.2	b6.0	8.1	11	74	57	13	6.6	0	0	.3
29	5.2	6.5	b6.5	8.4	11	61	50	14	7.8	0	0	.3
30	5.0	6.8	6.2	13	-	50	44	13	17	0	0	.2
31	4.8	-	4.8	13	-	44	-	9.4	-	0	0	-
Total	89.5	156.9	189.3	197.7	526	754.9	1,331	1,380.4	311.4	169.3	4.4	9.7
Mean	2.89	5.23	6.11	6.38	18.1	24.4	44.4	44.5	10.4	5.46	0.14	0.32
Ac-ft	178	311	375	392	1,040	1,500	2,640	2,740	618	336	8.7	19

Calendar year 1951: Max - Min - Mean - Ac-ft -
Water year 1951-52: Max 150 Min 0 Mean 14.0 Ac-ft 10,160

Peak discharge (base, 75 cfs).--Mar. 26 (7 a.m.) 92 cfs (2.59 ft); Apr. 7 (10 a.m.) 80 cfs (2.35 ft); May 9 (1:30 a.m.) 164 cfs (3.11 ft); Sept. 6 (4 p.m.) 78 cfs (2.33 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Backwater from aquatic growth Oct. 2 to Feb. 1.

Prairie power canal at Prairie City, Oreg.

Location.--Lat 44°27', long. 118°42', in sec. 11, T. 13 S., R. 33 E., on left bank just upstream from highway bridge over canal and 1 mile south of Prairie City.

Records available.--May 1925 to September 1952.

Gage.--Staff gage read twice daily Oct. 1 to Feb. 9, once daily Feb. 10 to Apr. 26, July 6 to Sept. 30. Datum of gage is 3,667 ft above mean sea level (from U. S. Coast and Geodetic Survey vertical-angle benchmark).

Extremes.--1925-52: Maximum daily discharge, 86 cfs May 5, 1939; no flow at times.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Canal diverts from John Day River in SE¼ sec. 7, T. 13 S., R. 34 E. Until powerplant was destroyed by fire on Feb. 2, 1952, water was used by powerplant at Prairie City and returned to river below station on John Day River at Prairie City. Water used only for irrigation after that date.

Cooperation.--Gage read by employee of California-Pacific Utilities Co.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	0	56	41	66	19	14			a16	22	7.4
2	56	0	56	48	20	19	14			a17	22	7.0
3	56	0	56	50	18	12	*13			18	22	7.0
4	56	0	35	58	18	18	16	a15		a18	23	*7.4
5	55	0	56	58	17	19	18			a19	23	7.4
6	55	0	56	58	17	20	28			20	23	7.4
7	54	0	26	61	17	20	29			20	24	8.3
8	54	0	41	*61	17	20	14			20	22	8.3
9	*54	0	61	58	17	21	12			20	14	22
10	54	0	41	57	16	22	14			20	13	26
11	56	0	61	58	18	20	13			22	10	16
12	56	0	49	57	18	22	14			23	8.6	8.6
13	56	0	59	55	14	21	14			23	9.5	7.4
14	56	0	50	58	11	23	31			23	12	7.0
15	56	0	61	61	16	22	20	a25	a25	22	7.4	7.0
16	56	0	61	59	17	23	16			22	5.1	6.6
17	54	0	59	40	11	21	14			*22	5.1	6.6
18	22	0	59	49	11	18	18			22	5.4	5.4
19	0	0	49	59	11	21	25			21	5.4	5.1
20	0	0	59	62	16	17	18			21	6.0	4.4
21	0	0	59	61	11	12	20			22	6.4	3.8
22	0	0	61	59	11	8.2	20			22	6.8	3.8
23	0	0	59	59	17	20	17			22	6.8	3.8
24	0	0	58	61	18	50	20			22	6.8	4.1
25	0	0	49	59	*20	79	23	a30		22	6.8	4.1
26	0	24	62	59	18	33	28			22	6.4	4.8
27	0	*55	62	58	19	26	a30			23	6.4	5.1
28	0	56	62	58	14	25	a32	*34		23	6.6	5.8
29	0	57	62	59	19	23	a28	a34		23	7.0	6.6
30	0	55	61	59	-	19	a22	a32		22	7.4	6.4
31	0	-	61	63	-	13	-	a30	-	22	7.4	-
Total	954	247	1,707	1,763	513	706.2	595	760	750	654	357.3	230.6
Mean	30.8	8.23	55.1	56.9	17.7	22.8	19.8	24.5	25.0	21.1	11.5	7.69
Ac-ft	1,890	490	3,390	3,500	1,020	1,400	1,180	1,510	1,490	1,300	709	457

Calendar year 1951: Max 70 Min 0 Mean 41.9 Ac-ft 30,360
Water year 1951-52: Max 79 Min 0 Mean 25.2 Ac-ft 18,340

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for John Day River at Prairie City.

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

Location.--Lat 44°20', long. 118°39', in SW¼ sec. 20, T. 14 S., R. 34 E., on left bank 100 ft upstream from Slide Creek and 8½ miles south of Prairie City.

Drainage area.--7.2 sq mi, approximately.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder and log control. Datum of gage is 4,909.57 ft above mean sea level, datum of 1929.

Average discharge.--22 years, 12.2 cfs.

Extremes.--Maximum discharge during year, 104 cfs June 8 (gage height, 2.12 ft); minimum, 1.7 cfs Mar. 20-23.
1930-52: Maximum discharge, 172 cfs June 8, 1948; maximum gage height, 2.44 ft June 9, 1933; minimum discharge, 1.4 cfs for several days in 1931, 1934, 1935, 1937, and on Nov. 19, 1939.

Remarks.--Records excellent except those below 3 cfs, which are good. No diversion above station; some natural regulation by Strawberry Lake.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 25				May 26 to Sept. 30			
1.1	0.6	1.6	24	1.2	3.0	1.7	35
1.2	3.0	1.8	45	1.3	6.6	1.9	62
1.3	7.0	2.0	76	1.4	12	2.2	122
1.4	12			1.5	18		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.1	3.7	6.1	b3.0	3.0	2.2	3.0	32	75	53	14	5.8
2	3.7	4.1	5.7	b3.0	3.0	2.2	3.0	32	71	48	14	5.8
3	4.1	4.1	5.3	3.0	2.7	2.2	2.7	33	73	47	14	5.4
4	3.7	4.1	5.3	3.0	2.7	1.9	2.7	32	82	46	13	5.4
5	3.7	4.1	5.3	3.7	2.7	1.9	3.7	31	90	46	13	*5.1
6	3.7	4.1	5.7	3.4	2.7	1.9	5.7	29	90	46	12	4.8
7	3.7	4.1	5.3	3.4	2.7	1.9	7.4	29	98	43	12	4.8
8	3.7	4.1	b5.0	*3.4	2.7	1.9	7.8	32	102	39	12	4.8
9	*3.7	4.1	b4.0	3.4	2.7	1.9	7.4	33	100	35	12	5.1
10	3.7	4.5	3.4	3.4	2.7	1.9	7.0	35	98	33	11	4.8
11	3.7	4.1	3.4	3.4	2.7	1.9	7.4	*39	*90	32	10	4.8
12	3.7	4.5	3.4	3.4	2.5	b1.9	7.4	41	73	31	10	4.8
13	3.7	4.1	3.4	3.0	b2.5	1.9	8.3	44	59	30	9.9	4.8
14	3.7	4.1	3.4	3.0	b2.5	1.9	8.8	48	54	29	9.9	4.8
15	4.1	4.1	3.7	3.0	2.5	1.9	8.8	48	52	28	9.4	4.4
16	4.1	4.1	3.7	3.0	2.5	1.9	8.8	48	48	26	8.9	4.4
17	4.1	4.1	3.7	3.0	b2.5	1.9	8.8	46	47	26	8.9	4.4
18	4.1	4.1	3.7	3.0	b2.5	1.9	10	51	47	*24	8.4	4.4
19	4.1	4.1	3.7	3.0	2.7	1.9	16	55	50	22	8.4	4.0
20	4.1	4.1	3.7	3.0	2.5	*1.9	16	58	53	21	7.9	4.0
21	4.1	4.1	3.7	3.0	2.7	1.7	15	59	56	20	7.9	4.0
22	4.1	4.1	4.1	3.0	b2.6	b1.7	15	61	54	18	7.9	4.0
23	4.9	4.1	4.1	3.0	2.5	1.7	16	59	52	18	7.9	4.0
24	4.5	4.1	b4.0	3.0	2.5	2.5	19	61	48	16	7.4	4.0
25	4.1	4.1	b3.8	3.0	2.5	2.7	26	66	47	16	7.4	3.7
26	4.1	*4.1	b3.6	3.0	2.5	2.7	29	80	47	16	7.0	3.7
27	4.1	4.1	3.4	3.0	2.2	2.7	34	86	47	16	6.6	3.7
28	4.5	4.1	3.0	3.0	2.2	3.0	38	*92	47	16	6.6	3.7
29	4.5	4.9	2.7	3.0	2.2	3.0	33	86	48	*16	6.2	3.4
30	4.1	5.7	2.7	3.0	-	3.0	31	82	53	15	6.2	3.4
31	4.1	-	3.0	3.0	-	3.0	-	82	-	15	5.8	-
Total	124.3	125.8	125.0	96.5	74.9	66.6	406.7	1,610	1,951	887	295.6	134.2
Mean	4.01	4.19	4.03	3.11	2.58	2.15	13.6	51.9	65.0	28.6	9.54	4.47
Cfsm	0.557	0.582	0.560	0.432	0.358	0.299	1.89	7.21	9.03	3.97	1.32	0.621
In.	0.64	0.65	0.65	0.50	0.39	0.34	2.10	8.32	10.08	4.58	1.53	0.69
Ac-ft	247	250	248	191	149	132	807	3,190	3,870	1,760	586	266

Calendar year 1951: Max 82 Min 2.7 Mean 13.1 Cfsm 1.82 In. 24.74 Ac-ft 9,510
Water year 1951-52: Max 102 Min 1.7 Mean 16.1 Cfsm 2.24 In. 30.47 Ac-ft 11,700

Peak discharge (base, 50 cfs).--May 28 (3 to 6 a.m.) 92 cfs (2.06 ft); June 8 (11 p.m.) 104 cfs (2.12 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

John Day River at Prairie City, Oreg.

Location.--Lat 44°27', long. 118°43', in NE¼ sec. 10, T. 13 S., R. 33 E., on right bank 600 ft upstream from powerplant and outlet of Prairie power canal, a third of a mile below Dixie Creek, and three-quarters of a mile southwest of Prairie City.
Drainage area.--231 sq mi.
Records available.--October 1916 to September 1917 (gage heights only), March 1925 to September 1952.
Gage.--Water-stage recorder. Datum of gage is 3,496.99 ft above mean sea level, datum of 1929. Prior to Mar. 30, 1926, staff gage at site just below outlet of Prairie power canal at different datum. Mar. 30, 1926, to Aug. 23, 1943, staff gages at various sites and datums about 600 ft below present site, but just above the outlet of Prairie power canal.
Average discharge.--27 years (1925-52), 113 cfs, including flow of Prairie power canal.
Extremes.--Maximum discharge during year, 2,100 cfs Mar. 25 (gage height, 6.27 ft, from floodmark); minimum, 5.6 cfs Dec. 25.
1925-52: Maximum discharge, that of Mar. 25, 1952, from rating curve extended above 450 cfs; minimum, 2 cfs Dec. 8, 21, 22, 1932, Aug. 10, 1934.
Remarks.--Records good except those above 500 cfs, which are fair. Diversions above station for irrigation and for power. (See p. 36 for records for Prairie power canal at Prairie City.)

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 25				Mar. 25 to Sept. 30			
1.2	5.0	2.0	94	0.4	10	2.0	330
1.3	9.0	2.5	230	.6	24	3.0	690
1.4	15	3.0	380	.9	58	4.3	1,210
1.6	33	4.0	720	1.3	130		
1.9	75	4.7	1,000				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	70	51	13	95	72	274	365	277	135	33	22
2	43	72	43	10	167	67	295	344	262	115	29	28
3	59	75	35	12	121	67	*302	296	244	98	26	21
4	43	77	55	23	114	67	326	306	253	78	29	*26
5	35	73	33	29	107	67	396	277	274	80	31	27
6	33	72	26	21	98	67	466	238	330	60	29	30
7	30	72	23	20	96	67	480	217	298	53	27	33
8	26	72	29	*19	96	67	*407	362	268	50	27	32
9	*25	72	12	17	94	75	354	382	247	45	26	57
10	25	73	26	19	101	90	316	382	241	38	23	64
11	27	77	29	18	107	84	312	*393	*235	35	18	58
12	35	83	21	17	101	73	292	393	247	35	14	64
13	33	81	19	16	88	73	320	390	197	35	13	60
14	30	83	14	15	90	69	421	400	168	33	18	57
15	32	79	21	12	90	70	358	382	160	33	17	55
16	30	69	19	12	88	75	323	334	144	28	16	54
17	27	70	17	12	79	75	323	280	120	*29	16	55
18	56	70	19	12	73	79	372	271	109	31	17	52
19	79	72	17	17	83	*77	449	292	109	32	17	52
20	77	72	17	12	77	77	400	326	113	32	17	52
21	79	72	17	12	75	77	354	354	163	40	20	52
22	79	72	19	12	86	77	296	334	142	38	18	48
23	86	70	17	12	75	98	344	298	132	41	20	33
24	84	67	12	12	72	606	379	309	122	38	21	28
25	79	70	7.2	12	*70	1,200	435	334	124	36	23	27
26	77	*49	15	12	72	869	466	326	128	35	25	21
27	75	21	39	12	72	634	498	326	128	33	24	17
28	73	23	33	12	72	592	505	326	139	34	22	17
29	75	20	27	12	73	452	442	323	176	*33	21	27
30	75	33	23	14	-	372	390	312	153	33	22	31
31	73	-	20	21	-	309	-	289	-	34	21	-
Total	1,649	1,981	755.2	469	2,632	6,744	11,295	10,161	5,703	1,470	680	1,200
Mean	53.2	66.0	24.4	15.1	90.8	218	376	328	190	47.4	21.9	40.0
Ac-ft	3,270	3,930	1,500	930	5,220	13,380	22,400	20,150	11,310	2,920	1,350	2,380
Adjusted for diversion by Prairie power canal												
Mean	83.9	74.3	79.5	72.0	108	240	396	352	215	68.6	33.5	47.7
Ac-ft	5,160	4,420	4,890	4,430	6,240	14,780	23,580	21,660	12,800	4,220	2,060	2,840

Observed

Calendar year 1951: Max 335 Min 6.4 Mean 75.8 Ac-ft 54,850
Water year 1951-52: Max 1,200 Min 7.2 Mean 122 Ac-ft 88,740

Adjusted

Calendar year 1951: Mean 118 Ac-ft 85,210
Water year 1951-52: Mean 148 Ac-ft 107,100

Peak discharge (base, 240 cfs).--Feb. 1 (9 p.m.) 263 cfs (2.61 ft); Mar. 25 (3 p.m.) 2,100 cfs (6.27 ft); Apr. 7 (12:30 a.m.) 505 cfs (2.50 ft); Apr. 14 (8 a.m.) 452 cfs (2.35 ft); Apr. 19 (9 a.m.) 428 cfs (2.28 ft); Apr. 28 (9:30 a.m.) 484 cfs (2.44 ft); May 8 (4:30 p.m.) 421 cfs (2.26 ft).
* Discharge measurement made on this day.

South Fork John Day River near Dayville, Oreg.

Location.--Lat 44°25'40", long. 119°32'20", in NE¼ sec. 24, T. 13 S., R. 26 E., on left bank 0.7 mile below Smoky Creek and 3 miles south of Dayville.

Drainage area.--590 sq mi, approximately.

Records available.--October 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 2,500 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,230 cfs Mar. 25 (gage height, 6.98 ft), from rating curve extended above 1,900 cfs on basis of slope-area determination of peak flow; minimum, 27 cfs Sept. 4, 5 (gage height, 0.82 ft).
Flood in May 1948 reached a discharge of 3,250 cfs, from slope-area determination.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 9 to Apr. 5				Apr. 6 to Sept. 30			
1.5	33	3.5	565	0.8	26	3.0	445
1.8	63	4.0	880	1.1	44	3.5	650
2.3	150	5.3	2,090	1.5	89	4.0	930
3.0	355			2.0	170	5.0	1,810
				2.5	285	5.9	2,590

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a38	43	243	b46	673	162	831	816	230	151	44	31
2	a40	41	152	b50	829	152	960	745	215	139	45	31
3	a42	43	123	b55	462	144	*1,080	695	206	129	43	31
4	a40	43	116	b75	462	157	1,400	665	196	121	40	*30
5	a38	43	110	85	402	148	2,040	610	190	115	42	30
6	a36	44	95	82	327	146	2,540	584	194	110	40	30
7	a34	44	76	80	292	144	2,590	584	190	106	39	31
8	a34	45	b40	76	282	142	*1,870	695	178	102	38	31
9	33	45	b46	*69	255	173	1,490	725	172	95	38	34
10	35	48	b70	77	249	249	1,360	660	178	88	39	37
11	36	56	79	76	258	234	1,330	*610	180	80	39	38
12	*36	66	70	70	228	198	1,270	580	174	76	38	37
13	38	62	62	70	188	193	1,320	556	*166	72	36	36
14	39	63	48	74	186	193	1,660	540	159	70	44	35
15	39	61	66	63	198	183	1,390	540	180	66	*42	35
16	39	50	69	73	a210	203	1,240	496	170	64	38	33
17	39	44	62	46	a180	225	1,220	459	155	60	38	33
18	*39	50	73	b50	a150	217	1,350	434	148	57	36	32
19	39	55	71	79	173	206	1,570	414	178	56	35	33
20	39	53	66	80	171	*196	1,320	417	164	54	35	33
21	40	53	69	74	146	183	1,140	400	196	50	34	32
22	42	55	70	74	129	164	1,070	378	180	49	33	32
23	47	55	67	77	166	180	1,060	348	162	48	33	32
24	51	49	b50	95	162	1,370	1,060	336	166	48	31	32
25	49	55	b40	98	157	*2,080	1,140	386	159	46	31	32
26	47	57	59	102	*168	1,980	1,230	342	157	46	32	32
27	46	58	101	116	168	*1,800	1,170	*306	157	*44	32	32
28	46	*69	139	114	171	*1,810	1,090	280	164	43	32	32
29	46	82	118	112	166	1,400	965	268	160	42	31	32
30	45	228	100	146	-	1,070	870	255	159	42	30	32
31	45	-	b70	238	-	920	-	242	-	42	30	-
Total	1,257	1,760	2,620	2,622	7,608	16,622	40,626	15,366	5,283	2,311	1,138	981
Mean	40.5	58.7	84.5	84.6	262	536	1,354	496	176	74.5	36.7	32.7
Ac-ft	2,490	3,490	5,200	5,200	15,090	32,970	80,580	30,480	10,480	4,580	2,260	1,950

Calendar year 1951: Max - Min - Mean - Ac-ft -
Water year 1951-52: Max 2,590 Min 30 Mean 268 Ac-ft 194,800

Peak discharge (base, 1,000 cfs).--Feb. 1 (11 p.m.) 1,670 cfs (4.85 ft); Mar. 25 (9 p.m.) 3,230 cfs (6.98 ft); Apr. 5 (10:30 p.m.) 2,960 cfs (6.46 ft); Apr. 14 (7 p.m.) 1,820 cfs (5.01 ft); Apr. 19 (2 p.m.) 1,680 cfs (4.87 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for other stations in John Day River basin.

b Stage-discharge relation affected by ice.

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

Location.--Lat 44°31'20", long. 119°37'30", in sec. 20, T. 12 S., R. 26 E., on right bank, on John Day Highway, 0.7 mile upstream from Rock Creek bridge and 7 miles northwest of Dayville.

Drainage area.--1,640 sq mi, approximately.

Records available.--April 1926 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,232.10 ft above mean sea level, datum of 1929. Apr. 5 to Oct. 10, 1926, staff gage and Oct. 11, 1926, to July 25, 1930, water-stage recorder, at same site but at datum 0.50 ft higher.

Average discharge.--26 years, 437 cfs.

Extremes.--Maximum discharge during year, 6,570 cfs Mar. 26 (gage height, 13.42 ft); minimum, 45 cfs July 15.
1926-52: Maximum discharge, that of Mar. 26, 1952; maximum gage height, 14.0 ft Mar. 19, 1932; minimum discharge, 1 cfs for several days in August and September 1930, Aug. 8, 9, 1936.

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

Revisions (water years).--W 794: 1932(M). W 1218: 1950.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 26				Mar. 27 to Sept. 30			
1.8	51	6.0	1,110	1.5	47	5.0	800
2.0	70	8.0	2,050	2.0	99	7.0	1,680
2.5	134	11.0	4,300	2.5	170	9.0	2,900
3.0	214	13.5	6,650	3.0	260	12.0	5,250
4.0	440			4.0	495		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	200	506	269	860	452	d2,800	d2,900	1,070	634	76	54
2	101	199	482	214	1,850	430	d2,500	d2,800	1,000	574	71	52
3	187	204	430	209	1,270	418	d2,700	a2,600	940	518	85	52
4	211	206	402	243	1,040	438	d2,900	a2,400	888	465	62	*51
5	209	206	378	286	1,050	425	3,260	a2,300	868	398	61	48
6	197	202	352	279	850	415	4,530	a2,200	936	372	62	49
7	185	200	304	279	770	402	5,050	a2,400	1,060	338	61	50
8	178	199	240	269	725	398	4,360	a2,700	976	298	58	50
9	172	199	218	*255	707	422	d3,800	d2,900	884	244	68	54
10	167	202	243	271	692	584	d3,600	a2,400	*892	207	71	59
11	164	218	292	267	725	617	d3,400	*d1,900	880	175	67	63
12	*178	236	294	261	698	548	d3,200	d1,900	840	157	64	67
13	195	245	275	251	617	524	d3,000	d1,800	780	139	61	72
14	194	249	243	257	575	503	d3,200	d1,800	706	125	62	87
15	194	247	245	247	584	488	d3,800	d1,800	697	97	61	97
16	202	232	265	245	635	491	d3,400	d1,700	649	92	59	106
17	199	214	259	212	554	557	d3,200	d1,600	574	84	60	102
18	197	216	269	187	479	545	d3,000	d1,500	518	75	63	92
19	197	221	273	240	500	533	d3,400	d1,400	589	77	60	91
20	197	223	259	259	515	512	d3,800	1,600	559	69	54	92
21	197	228	255	251	455	488	d3,400	d1,500	667	66	52	91
22	202	232	269	249	402	452	d3,000	d1,400	661	63	52	87
23	211	227	273	251	455	491	d2,800	d1,300	604	57	53	79
24	228	216	245	290	461	2,090	d2,800	d1,200	580	53	50	72
25	236	214	200	290	455	4,510	d2,800	a1,500	562	54	52	68
26	227	221	197	282	*464	6,270	d3,000	a1,400	577	55	52	66
27	221	*230	271	294	464	*5,040	d3,400	1,400	571	63	54	61
28	216	234	395	294	476	*4,500	d3,200	1,340	610	*64	51	61
29	214	255	388	294	467	4,060	d3,000	1,280	649	60	48	61
30	212	392	350	325	-	3,630	d3,000	1,220	694	70	52	60
31	206	-	304	422	-	d3,200	-	1,140	-	79	56	-
Total	5,952	6,767	9,376	8,242	19,795	44,433	99,300	57,280	22,481	5,822	1,838	2,094
Mean	192	226	302	266	683	1,433	3,310	1,848	749	188	59.3	69.8
Ac-ft	11,810	13,420	18,600	16,350	39,260	88,130	197,000	113,600	44,590	11,550	3,650	4,150

Calendar year 1951: Max 2,700 Min 18 Mean 595 Ac-ft 431,100
Water year 1951-52: Max 6,270 Min 48 Mean 774 Ac-ft 562,100

Peak discharge (base, 1,300 cfs).--Feb. 2 (3 a.m.) 2,250 cfs (8.34 ft); Mar. 26 (5 p.m.) 6,570 cfs (13.42 ft); Apr. 7 (3 a.m.) 5,000 cfs (11.70 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.
d Doubtful gage-height record; discharge computed on basis of appearance of chart, weather records, and records for nearby stations.

Desolation Creek near Dale, Oreg.

Location.--Lat 44°59', long. 118°55', in SE¼ sec. 1, T. 7 S., R. 31 E., on right bank 1 mile upstream from mouth and 2 miles east of Dale.

Drainage area.--106 sq mi.

Records available.--July 1915 to September 1917 (fragmentary), gage heights and discharge measurements only, September 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,907.21 ft above mean sea level, datum of 1929. July 1915 to September 1917, at site three-quarters of a mile downstream at different datum. Sept. 14, 1949, to Oct. 12, 1951, water-stage recorder 80 ft downstream at datum 1.97 ft lower.

Extremes.--Maximum discharge during year, 816 cfs May 8 (gage height, 4.89 ft); minimum, 2.7 cfs Nov. 1 (gage height, 0.21 ft), result of freezup.
1949-52: Maximum discharge, that of May 8, 1952; minimum, that of Nov. 1, 1951.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Slight fluctuation at low flows caused by log ponds above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-12		Oct. 13 to Sept. 30			
0.7	9.5	0.5	5.6	2.0	76
.9	17	.8	11	2.5	136
1.1	29	1.0	16	3.0	225
		1.3	26	4.0	485
		1.5	37	4.8	780

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	7.2	41	a15	38	b16	75	473	322	156	20	8.8
2	22	14	36	a13	55	b16	84	425	310	133	19	8.8
3	22	21	28	a15	39	b15	89	398	310	119	18	8.6
4	29	21	25	a18	41	17	*115	348	322	110	18	8.6
5	18	14	24	a21	38	17	156	315	338	102	17	9.0
6	15	15	20	a23	32	17	207	305	368	93	16	8.4
7	14	16	14	a20	29	16	229	334	312	85	15	8.4
8	13	15	b13	a18	27	b14	172	752	272	80	16	8.4
9	12	14	b16	a19	26	16	*146	676	261	74	18	11
10	12	16	b20	a21	25	21	144	*613	265	69	18	12
11	11	19	b22	a19	26	20	146	599	217	63	16	12
12	a13	18	*b20	a16	22	b15	138	585	213	59	15	11
13	15	17	b20	a19	b19	b17	181	596	181	54	15	10
14	15	16	b21	a21	b21	b16	298	599	164	49	*27	9.4
15	18	15	b22	a14	b23	19	237	509	164	46	*21	9.0
16	17	8.0	23	a15	21	19	207	452	146	42	16	8.4
17	*14	11	21	*b10	b16	b18	217	452	136	40	15	8.1
18	14	20	20	b12	b14	b18	285	461	136	37	14	7.8
19	19	25	19	15	b19	19	360	494	156	35	13	7.8
20	21	22	19	14	22	19	298	578	142	33	13	7.6
21	20	20	19	14	20	18	275	515	199	31	12	7.5
22	20	18	19	14	b18	b14	288	440	153	30	11	7.3
23	30	15	19	14	22	20	325	428	132	*28	11	7.2
24	34	14	b17	16	20	62	398	468	125	26	11	7.0
25	23	21	b15	16	18	138	509	571	132	25	10	6.9
26	18	22	b22	15	18	145	564	518	132	24	10	6.7
27	17	17	b26	15	*18	139	582	*485	135	23	10	6.7
28	18	19	b30	*15	18	130	574	476	150	21	10	6.7
29	18	*19	b22	15	18	110	479	452	146	21	9.6	6.7
30	16	32	a20	18	-	95	467	386	154	20	9.2	6.7
31	12	-	a18	22	-	87	-	352	-	20	9.0	-
Total	563	521.2	671	512	723	1,305	8,245	15,055	6,193	1,748	452.8	252.5
Mean	18.2	17.4	21.6	16.5	24.9	42.1	275	486	206	56.4	14.6	8.42
Ac-ft	1,120	1,030	1,330	1,020	1,430	2,590	16,350	29,860	12,280	3,470	898	501

Calendar year 1951: Max 630 Min 7.2 Mean 89.2 Ac-ft 64,570
Water year 1951-52: Max 752 Min 6.7 Mean 99.0 Ac-ft 71,880

Peak discharge (base, 200 cfs).--Mar. 25 (7 p.m.) 213 cfs (2.94 ft); Apr. 6 (11 p.m.) 263 cfs (3.19 ft); Apr. 14 (4 a.m.) 315 cfs (3.40 ft); Apr. 27 (11 p.m.) 616 cfs (4.39 ft); May 8 (4 p.m.) 816 cfs (4.89 ft); May 25 (2:30 a.m.) 606 cfs (4.36 ft); June 21 (4:30 a.m.) 219 cfs (2.97 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

b Stage-discharge relation affected by ice.

North Fork John Day River near Dale, Oreg.

Location.--Lat 45°00', long. 118°57', in SE¼ sec. 35, T. 6 S., R. 31 E., on right bank three-eighths of a mile downstream from Desolation Creek and 1½ miles northeast of Dale.

Drainage area.--525 sq mi.

Records available.--October 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,775.85 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 380 cfs.

Extremes.--Maximum discharge during year, 3,550 cfs May 8 (gage height, 7.37 ft); minimum, 43 cfs Sept. 27, 28, 29, 30.
1929-52: Maximum discharge, 8,170 cfs May 26, 1948 (gage height, 10.48 ft); minimum, 6 cfs Nov. 3, 1936 (gage height, 1.40 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Log ponds and several small diversions above station for irrigation and mining cause fluctuations at low flow.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	40	4.0	620
2.4	79	5.0	1,230
2.8	159	6.5	2,560
3.0	212	7.2	3,350
3.5	387		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	58	169	80	126	104	317	2,380	1,490	680	113	52
2	98	68	204	70	154	104	332	2,120	1,440	595	106	51
3	106	93	157	80	141	b100	336	2,020	1,410	535	100	54
4	138	119	136	100	138	96	396	1,760	1,420	516	96	55
5	107	89	123	110	128	98	610	1,600	1,490	462	96	59
6	88	98	115	120	126	96	912	1,540	1,850	421	96	60
7	79	93	b75	110	123	b95	1,050	1,680	1,520	387	88	58
8	76	94	b70	100	123	b90	852	3,220	1,330	359	91	55
9	72	91	b85	110	123	100	726	3,210	1,230	332	96	64
10	70	94	b100	120	123	113	705	*2,920	1,190	309	100	74
11	68	109	b110	100	119	109	715	3,020	1,000	288	98	74
12	81	106	*b100	90	117	100	680	3,040	984	268	93	68
13	89	102	b100	100	b110	b95	822	3,130	876	252	91	64
14	89	102	111	110	b120	b100	1,190	3,130	780	236	113	58
15	100	98	120	90	132	111	1,010	2,640	768	224	93	56
16	100	b60	120	75	115	111	924	2,390	695	209	84	55
17	*88	b65	120	*b70	123	107	996	2,390	645	192	79	52
18	84	b90	110	b70	b110	113	1,390	2,400	630	184	76	52
19	96	b110	110	b75	b140	107	1,970	2,540	720	174	76	51
20	113	b120	110	b70	b130	106	1,570	2,770	655	169	74	51
21	113	111	100	b75	b120	104	1,360	2,580	786	*159	74	48
22	111	100	100	b80	b110	b85	1,400	2,220	665	157	73	47
23	134	86	100	b85	b120	107	1,660	2,130	590	150	72	48
24	169	79	90	b80	130	206	2,070	2,220	565	143	68	49
25	132	b100	80	b85	b120	382	2,740	2,690	580	134	60	48
26	107	b110	100	b100	115	*488	2,740	2,460	595	130	66	47
27	93	111	120	b110	*106	511	3,280	2,290	605	123	63	47
28	96	111	140	*b95	104	560	3,240	2,210	695	117	61	46
29	96	*104	120	91	102	488	2,570	2,080	655	115	61	44
30	96	130	110	100	-	426	2,400	1,820	660	111	58	46
31	81	-	100	104	-	367	-	1,640	-	111	55	-
Total	3,056	2,901	3,505	2,855	3,548	5,779	40,963	74,240	28,519	8,242	2,570	1,633
Mean	98.6	96.7	113	92.1	122	186	1,365	2,395	951	266	82.9	54.4
Ac-ft	6,060	5,750	6,950	5,660	7,040	11,460	81,250	147,300	56,570	16,350	5,100	3,240

Calendar year 1951: Max 3,000 Min 46 Mean 451 Ac-ft 326,500
Water year 1951-52: Max 3,280 Min 44 Mean 486 Ac-ft 352,700

Peak discharge (base, 1,200 cfs).--Apr. 19 (7 a.m.) 2,070 cfs (6.01 ft); Apr. 28 (2 a.m.) 3,530 cfs (7.35 ft); May 8 (9:30 p.m.) 3,550 cfs (7.37 ft); May 25 (3 a.m.) 2,860 cfs (6.77 ft); June 6 (5 a.m.) 1,960 cfs (5.89 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Dec. 15 to Jan. 16; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Camas Creek near Lehman, Oreg.

Location.--Lat 45°10', long. 118°44', in SW¼ sec. 33, T. 4 S., R. 33 E., on left bank 2 miles downstream from Bowman Creek and 3½ miles northwest of Lehman.

Drainage area.--61 sq mi, approximately.

Records available.--October 1950 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 3,969.53 ft above mean sea level (levels by Oregon State Highway Department).

Extremes.--Maximum discharge during year, 1,220 cfs May 8 (gage height, 3.40 ft), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 0.8 cfs Aug. 20. 1950-52: Maximum discharge, that of May 8, 1952; maximum gage height, 3.70 ft about Feb. 1, 1951 (ice jam); minimum discharge, 0.7 cfs Sept. 20, 21, 1951.

Remarks.--Records good except those for periods of ice effect or backwater from moss and those above 400 cfs, which are fair. Slightly regulated at low flows by operation of irrigation ditches.

Rating tables, water year 1951-52, except periods of ice effect or backwater from moss (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 7				May 8 to Sept. 30			
0.5	1.7	1.4	74	0.3	0.6	1.1	33
.6	2.8	1.7	148	.4	1.0	1.4	75
.7	4.7	2.0	255	.5	1.7	1.7	138
.8	8.0	2.4	465	.6	2.8	2.0	230
.9	13	2.7	670	.7	4.7	2.5	480
1.1	31			.8	8.5	3.0	840
				.9	15		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	b5.0	72	b7.0	8.5	b11	102	82	17	17	1.6	1.1
2	2.3	b5.5	47	b8.0	12	b10	126	78	14	13	1.6	1.1
3	4.4	4.7	36	8.0	13	b10	180	66	13	11	1.4	1.1
4	3.4	4.7	29	6.8	17	10	327	59	11	9.6	1.4	1.1
5	2.8	4.4	24	6.1	19	10	528	54	10	8.5	1.3	1.2
6	2.7	4.2	19	5.8	b20	b11	608	51	*14	7.5	1.2	1.1
7	2.4	4.2	b17	5.8	b19	b12	441	56	11	6.6	1.2	1.1
8	2.4	4.4	b15	b5.5	b18	b10	*264	808	9.6	5.9	1.3	1.2
9	2.4	4.4	b14	b5.5	b17	11	223	554	9.0	5.2	1.5	1.6
10	2.3	4.7	b18	5.5	b16	12	212	*292	9.6	4.7	1.4	1.7
11	2.3	5.2	b15	b5.0	b17	11	190	209	8.5	4.2	1.2	1.5
12	2.7	5.2	*b12	b5.5	b18	b10	174	162	11	4.0	1.2	1.5
13	3.0	5.0	b12	b5.0	b16	b10	201	128	9.0	3.8	1.1	1.4
14	2.8	5.0	b11	5.2	b17	b11	378	128	9.0	3.6	1.5	1.3
15	3.1	5.0	10	b5.0	18	12	286	108	10	3.1	*1.3	1.3
16	3.0	b5.5	10	b5.0	16	12	227	91	8.5	3.0	1.2	1.2
17	2.8	5.0	9.5	*b4.5	b16	12	201	77	7.0	2.8	1.1	1.3
18	2.7	5.2	9.5	5.5	b13	12	204	69	6.6	2.7	1.1	1.2
19	2.8	5.2	8.5	5.2	b14	13	208	65	8.0	2.5	1.0	1.1
20	3.1	5.5	8.5	5.5	b13	12	161	67	7.0	2.4	.9	1.1
21	3.1	6.1	8.5	b5.0	b11	12	131	59	12	2.4	.9	1.1
22	4.0	5.8	8.5	5.0	b10	b11	115	51	9.0	*2.1	.9	1.1
23	9.5	b6.0	b8.0	5.0	b10	14	112	44	8.0	2.0	.9	1.1
24	12	b6.0	b8.0	5.2	12	47	118	39	7.0	1.9	.9	1.1
25	9.5	b6.0	b7.0	b5.0	b10	208	128	35	9.0	1.8	.9	1.1
26	7.6	6.4	b8.0	5.2	12	*310	120	31	9.0	1.8	1.0	1.1
27	6.4	6.8	8.0	5.0	12	291	110	26	9.6	1.6	.9	1.1
28	6.1	10	7.6	b5.0	*b12	286	102	24	19	1.5	.9	1.1
29	5.8	*16	b7.0	b5.0	11	223	82	21	11	1.5	1.0	1.1
30	*5.2	51	b6.5	5.5	-	161	74	20	16	1.5	1.0	1.1
31	b5.0	-	7.2	6.4	-	120	-	18	-	1.3	1.1	-
Total	130.0	218.1	481.3	172.7	417.5	1,905	6,333	3,572	312.4	140.5	35.9	36.2
Mean	4.19	7.27	15.5	5.57	14.4	61.5	211	115	10.4	4.53	1.16	1.21
Ac-ft	258	433	955	343	828	3,780	12,560	7,080	620	279	71	72

Calendar year 1951: Max 441 Min 0.8 Mean 46.6 Ac-ft 33,710
Water year 1951-52: Max 808 Min 0.9 Mean 37.6 Ac-ft 27,280

Peak discharge (base, 250 cfs).--Mar. 25 (7:30 p.m.) 372 cfs (2.24 ft); Apr. 5 (9 p.m.) 1,000 cfs (3.09 ft); Apr. 14 (2:30 a.m.) 806 cfs (2.87 ft); May 8 (6:30 p.m.) 1,220 cfs (3.40 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from moss Oct. 1-23, July 1 to Sept. 30.

Camas Creek near Ukiah, Oreg.

Location.--Lat 45°09', long. 118°49', in SE¼ sec. 3, T. 5 S., R. 32 E., on right bank 1.2 miles upstream from Cable Creek and 6 miles east of Ukiah.

Drainage area.--121 sq mi.

Records available.--May 1914 to September 1917, November 1919 to June 1924, and October 1945 to September 1952 in reports of Geological Survey. May 1914 to September 1917, November 1919 to June 1924, and March 1932 to September 1941 (incomplete) in reports of State engineer; October 1941 to September 1945 (incomplete) in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 3,588.61 ft above mean sea level (levels by Oregon State Highway Department). May 1, 1914, to June 30, 1924, staff gage and Mar. 1, 1932, to Nov. 7, 1940, water-stage recorder, at site 1.2 miles downstream at different datum.

Average discharge.--18 years (1914-17, 1919-23, 1940-44, 1945-52), 109 cfs.

Extremes.--Maximum discharge during year, 2,080 cfs May 8 (gage height, 4.47 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum, 2.3 cfs Aug. 28, 29.

1914-17, 1919-24, 1932-52: Maximum discharge, 2,350 cfs Dec. 12, 1946 (gage height, 4.58 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum observed, 1 cfs Aug. 1-9, 1932, June 24 to July 2, 1940.

Remarks.--Records excellent except those for periods of ice effect or backwater from aquatic vegetation and those above 700 cfs, which are fair. Slightly regulated at low flows by operation of irrigation ditches.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 8				May 9 to Sept. 30			
1.0	2.3	1.9	89	1.2	1.9	2.1	82
1.1	4.1	2.3	188	1.3	3.6	2.5	173
1.2	7.5	2.5	263	1.4	7.0	3.0	374
1.3	12	3.0	538	1.5	12	3.5	730
1.4	20	3.5	920	1.6	18	4.0	1,240
1.6	41	4.0	1,440	1.8	39		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	11	142	14	48	26	223	235	57	46	4.7	2.5
2	4.6	13	103	14	89	26	272	223	51	39	4.7	2.5
3	9.0	15	78	13	91	26	364	198	46	35	4.1	2.6
4	5.8	15	65	13	130	26	552	179	43	31	4.1	3.0
5	3.9	15	54	12	140	26	803	164	40	28	3.8	3.2
6	3.4	13	48	12	110	28	1,010	153	45	25	3.8	3.2
7	3.2	12	40	12	90	30	983	155	*41	23	3.6	3.0
8	3.0	12	34	11	80	26	607	1,240	38	20	3.8	2.8
9	3.2	11	30	11	70	27	486	1,150	35	18	4.7	5.4
10	3.0	12	34	11	70	29	473	*667	34	16	4.7	6.2
11	3.0	14	30	10	70	29	455	504	31	15	4.1	5.4
12	4.6	15	*22	10	60	27	413	402	36	14	3.8	4.7
13	4.6	13	21	10	50	31	486	338	30	13	3.4	4.1
14	3.4	12	21	10	55	33	835	318	27	12	7.4	3.8
15	4.1	12	20	10	50	31	629	266	32	11	*6.6	3.6
16	4.1	11	20	10	40	33	492	225	26	9.8	5.0	3.6
17	3.9	12	19	9	36	33	473	195	22	9.8	4.4	3.6
18	3.6	15	19	10	30	46	506	185	21	8.8	3.8	3.6
19	3.6	18	18	10	32	35	552	185	26	7.9	3.6	3.4
20	4.6	22	18	10	32	35	413	192	23	7.5	3.4	3.2
21	6.2	27	20	10	28	34	343	176	39	7.5	3.4	3.2
22	6.6	20	20	10	24	30	304	149	29	*7.0	3.0	3.2
23	10	18	18	10	26	37	299	134	23	7.0	2.8	3.2
24	11	17	16	10	32	164	328	124	22	6.2	2.6	3.2
25	15	18	14	10	28	554	391	120	26	5.8	2.6	3.2
26	9.5	20	16	10	32	*732	391	112	30	5.8	2.8	3.2
27	7.5	21	16	10	32	658	364	99	30	5.4	3.0	3.2
28	5.2	25	16	*11	*32	644	343	92	37	5.0	2.6	3.2
29	4.6	*30	14	12	30	473	276	84	34	4.7	2.5	3.4
30	*8.0	85	14	20	-	353	235	75	45	4.7	2.5	3.4
31	12	-	14	34	-	268	-	65	-	4.4	2.5	-
Total	179.4	554	1,014	369	1,637	4,540	14,301	8,404	1,019	453.3	117.8	105.8
Mean	5.79	18.5	32.7	11.9	56.4	146	477	271	34.0	14.6	3.80	3.53
Ac-ft	356	1,100	2,010	732	3,250	9,000	28,370	16,670	2,020	899	234	210

Calendar year 1951: Max 903 Min 2.1 Mean 98.9 Ac-ft 71,580
Water year 1951-52: Max 1,240 Min 2.5 Mean 89.3 Ac-ft 64,850

Peak discharge (base, 550 cfs).--Mar. 25 (10 p.m.) 983 cfs (3.57 ft); Apr. 6 (10:30 p.m.) 1,420 cfs (3.98 ft); Apr. 14 (5 to 9 a.m.) 903 cfs (3.48 ft); May 8 (7:30 p.m.) 2,080 cfs (4.47 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 1-3, 16-20, 23-26, Dec. 7 to Jan. 30, Feb. 6 to Mar. 8 (no gage-height record Dec. 21 to Jan. 17; discharge estimated on basis of weather records, and records for Camas Creek near Lehman). Backwater from aquatic vegetation Oct. 1 to Nov. 1.

Middle Fork John Day River at Ritter, Oreg.

Location.--lat 44°53', long. 119°08', in NW¼ sec. 8, T. 8 S., R. 30 E., on left bank 35 ft downstream from bridge and half a mile south of Ritter.

Drainage area.--526 sq mi.

Records available.--October 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,544.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--23 years, 229 cfs.

Extremes.--Maximum discharge during year, 3,010 cfs Mar. 25 (gage height, 6.73 ft); minimum, 4.4 cfs Nov. 17, result of freezup.
1929-52: Maximum discharge, 4,000 cfs Mar. 19, 1932 (gage height, 7.78 ft), from rating curve extended above 2,200 cfs; maximum gage height, 8.50 ft Feb. 18, 1949 (ice jam); minimum discharge, 1.0 cfs Dec. 10, 1932.

Remarks.--Records excellent except those for periods of ice effect, which are good. Several small diversions above station for irrigation.

Revisions (water years).--W 739: 1931. W 1218: 1950.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 8				May 9 to Sept. 30			
1.9	19	3.5	330	1.8	20	3.5	300
2.0	26	4.0	530	2.1	41	4.0	505
2.3	56	4.5	790	2.5	88	5.0	1,140
2.7	121	5.0	1,170	3.0	178	6.0	2,180
3.0	186	6.0	2,180				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	b30	194	b40	129	100	724	1,120	565	255	45	26
2	48	33	222	b30	273	100	735	1,020	530	223	45	27
3	51	51	150	32	238	93	857	936	505	203	39	*27
4	80	55	123	60	282	100	1,080	864	487	188	38	25
5	59	51	110	b75	279	100	1,600	784	482	166	37	27
6	46	46	100	b75	233	98	2,040	730	535	152	35	30
7	41	46	72	b75	214	96	2,080	730	496	143	32	29
8	38	46	b50	b70	204	93	1,560	1,870	451	134	33	31
9	35	48	b40	b70	194	110	*1,260	2,170	407	123	35	35
10	33	49	b60	*b70	184	165	1,180	1,590	383	114	36	41
11	34	59	101	b70	177	170	1,190	1,360	335	106	36	46
12	42	62	81	b65	161	139	1,080	1,230	328	96	33	42
13	55	64	64	b70	127	139	1,180	*1,210	282	88	32	40
14	54	63	54	b80	131	133	1,790	1,200	262	84	40	38
15	54	60	60	b70	137	135	1,620	1,080	279	80	56	35
16	56	43	78	b60	133	145	1,310	942	262	74	43	33
17	*51	23	86	b65	117	179	1,270	900	238	70	37	32
18	49	b30	84	b70	96	170	1,430	874	221	68	34	32
19	50	b40	78	b80	108	161	1,770	894	243	66	32	32
20	54	60	72	b75	112	154	1,530	949	223	63	31	30
21	56	64	72	b75	105	141	1,250	900	276	61	31	30
22	56	64	80	b70	86	131	1,150	817	223	59	31	30
23	63	b46	78	b80	101	184	1,190	775	221	56	30	30
24	88	b36	48	b90	107	1,190	1,270	769	212	*53	28	27
25	73	52	30	b85	103	2,120	1,500	900	208	52	28	27
26	62	67	25	b85	101	*2,060	1,630	854	212	50	27	26
27	56	64	101	b85	*101	1,640	1,660	805	212	47	27	22
28	54	70	96	b90	100	1,650	1,630	775	245	44	27	24
29	54	*83	98	b90	105	1,290	1,380	739	243	40	27	20
30	51	100	75	88	-	960	1,190	666	258	38	27	21
31	b40	-	b55	89	-	832	-	605	-	39	27	-
Total	1,622	1,605	2,637	2,229	4,438	14,778	41,156	31,058	9,824	3,035	1,059	915
Mean	52.3	53.5	85.1	71.9	153	477	1,372	1,002	327	97.9	34.2	30.5
Ac-ft	3,220	3,180	5,230	4,420	8,800	29,310	81,630	61,600	19,490	6,020	2,100	1,810

Calendar year 1951: Max 1,430 Min 15 Mean 268 Ac-ft 193,900
Water year 1951-52: Max 2,170 Min 20 Mean 312 Ac-ft 226,800

Peak discharge (base, 760 cfs).--Mar. 25 (7 p.m.) 3,010 cfs (6.73 ft); Apr. 7 (6:30 a.m.) 2,280 cfs (6.09 ft); Apr. 14 (5:30 p.m.) 1,970 cfs (5.81 ft); Apr. 19 (4 p.m.) 1,840 cfs (5.69 ft); Apr. 27 (10 a.m. to 3 p.m.) 1,660 cfs (5.53 ft); May 8 (8:30 p.m.) 2,830 cfs (6.58 ft).

* Discharge measurement made on this day.
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.--Lat 44°37'30", long. 119°15'10", in SW¼ sec. 8, T. 11 S., R. 29 E., on left bank half a mile upstream from head gorge and 6 miles southwest of Fox.

Drainage area.--90.2 sq mi.

Records available.--October 1930 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 4,240 ft (from topographic map). Prior to June 12, 1952, at site half a mile downstream at different datum.

Average discharge.--22 years, 23.3 cfs.

Extremes.--Maximum discharge during year, 1,860 cfs Mar. 25 (gage height, 5.85 ft, site and datum then in use, 6.14 ft, present site and datum), from rating curve extended above 200 cfs by slope-area determination of peak flow; practically no flow Oct. 1-15, Aug. 11 to Sept. 30.
1930-52: Maximum discharge, that of Mar. 25, 1952; no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those above 300 cfs, which are fair. Several diversions above station for irrigation of about 4,800 acres.

Revisions (water years).--W 754: 1932(M). W 1184: Drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 11				June 12 to Sept. 30	
0.4	0	1.2	20	0.8	0
.5	.1	1.4	41	.9	.3
.6	.6	1.8	95	1.0	.6
.7	1.3	2.4	212	1.1	1.8
.8	2.7	3.0	383	1.2	4.0
.9	4.9	3.5	556	1.3	7.0
1.0	8.6	4.1	810	1.4	11
1.1	13			1.5	16

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.5	3.4	1.6	2.5	6.0	140	120	20	14	1.1	
2	0	.5	3.4	1.3	4.0	6.0	160	110	19	12	1.1	
3	0	.7	2.7	1.1	3.6	6.0	180	100	17	11	1.0	
4	0	1.0	2.0	1.3	3.4	6.0	*200	90	15	9.0	.7	
5	0	.7	1.9	1.5	3.8	6.0	250	80	16	7.4	.6	
6	0	.8	2.1	1.6	3.6	6.0	300	70	18	6.7	.3	
7	0	.8	2.3	1.5	3.2	6.0	350	140	18	6.4	.2	
8	0	.8	2.1	1.3	3.4	5.0	250	250	15	5.3	.1	
9	0	.9	1.2	1.0	3.0	6.0	*150	200	14	5.2	.1	
10	0	1.1	1.6	1.1	2.8	6.8	140	160	13	4.6	.1	
11	0	1.1	2.0	*1.2	3.8	7.1	140	140	12	4.0	0	
12	0	1.3	2.2	1.3	5.0	6.5	160	130	*12	3.8	0	
13	0	1.2	2.2	1.1	4.0	6.0	150	*120	10	3.2	0	
14	0	1.2	2.0	1.3	3.6	7.0	200	110	9.8	2.8	0	
15	0	1.2	1.6	1.4	4.6	7.5	180	100	12	2.6	0	
16	.1	1.0	2.0	1.2	5.5	8.0	150	95	9.8	*2.2	0	
17	.6	.7	2.0	1.0	4.6	8.0	150	90	7.4	2.0	0	
18	*.6	.9	1.6	1.2	4.0	7.5	200	85	6.7	3.2	0	
19	.7	1.3	1.9	1.3	3.2	7.0	240	90	9.4	3.0	0	
20	.6	1.7	2.0	1.4	3.6	6.5	170	95	8.2	2.8	0	
21	.6	1.7	2.1	1.3	3.4	*7.0	150	85	16	2.6	0	
22	.8	1.6	2.6	1.3	3.2	6.0	130	75	12	2.4	0	
23	1.0	1.2	2.3	1.5	4.0	9.5	150	65	9.8	2.2	0	
24	.9	1.1	2.3	1.6	5.0	96	170	60	9.4	1.8	0	
25	.8	.8	1.2	1.4	6.0	*652	180	50	10	1.8	0	
26	.8	1.9	1.3	1.2	7.1	800	180	40	12	1.7	0	
27	.7	2.0	1.4	1.4	7.5	400	170	*30	11	1.5	0	
28	.7	*2.4	1.7	1.6	8.6	500	150	25	14	1.2	0	
29	.7	2.3	1.9	1.5	7.5	350	140	28	14	1.0	0	
30	.6	2.7	1.9	1.8	-	200	130	24	16	.9	0	
31	.6	-	1.8	2.0	-	160	-	22	-	1.0	0	
Total	10.8	37.1	62.7	42.3	127.5	3,311.4	5,410	2,879	386.5	129.8	5.3	0
Mean	0.35	1.24	2.02	1.36	4.40	107	180	92.9	12.9	4.19	0.17	0
Ac-ft	21	74	124	84	253	6,570	10,730	5,710	767	257	11	0

Calendar year 1951: Max 305 Min 0 Mean 25.9 Ac-ft 18,770
Water year 1951-52: Max 800 Min 0 Mean 33.9 Ac-ft 24,600

Peak discharge (base, 150 cfs).--Mar. 25 (10 p.m.) 1,860 cfs (5.85 ft); Apr. 7 (time and discharge unknown); May 8 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 26 to June 11; discharge estimated on basis of weather records, 4 discharge measurements, and records for nearby streams. Stage-discharge relation affected by ice Dec. 4, 11-13, Dec. 25 to Feb. 7, Feb. 9-25, Mar. 1-9, 12-22.

North Fork John Day River at Monument, Oreg.

Location.--Lat 44°49', long. 119°26', in E½ sec. 1, T. 9 S., R. 27 E., on right bank just downstream from entrance to canyon, a quarter of a mile downstream from Cottonwood Creek and three-quarters of a mile west of Monument.

Drainage area.--2,520 sq mi, approximately.

Records available.--March 1925 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,959.64 ft above mean sea level, datum of 1929. Prior to Nov. 24, 1925, staff gage at same site at different datum. Nov. 25, 1925, to Sept. 30, 1930, water-stage recorders at same site at various datums.

Average discharge.--26 years (1925-27, 1928-52), 1,134 cfs.

Extremes.--Maximum discharge during year, 20,900 cfs Mar. 26 (gage height, 14.61 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 68 cfs Nov. 18. 1925-52: Maximum discharge, 22,000 cfs Mar. 18, 1932 (gage height, 14.8 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 6 cfs sometime during period Nov. 2-13, 1936, when recorder was not operating.

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

Revisions (water years).--W 754: 1932(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 25				Mar. 26 to Sept. 30			
2.7	90	5.0	1,760	2.8	86	5.0	1,680
3.0	170	7.0	4,650	3.1	171	7.0	4,650
3.5	395	9.0	8,060	3.5	360	9.0	8,060
4.0	745	10.5	11,000	4.0	710	11.1	12,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	117	155	658	b200	b700	541	3,420	5,020	2,520	1,250	170	110
2	140	119	938	b150	2,130	500	3,530	4,490	2,370	1,190	170	100
3	174	124	705	b120	1,740	500	4,120	4,250	2,280	1,030	170	*100
4	180	180	590	b150	1,680	507	4,710	3,790	2,210	933	170	100
5	225	209	494	b300	1,770	500	6,510	3,420	2,230	862	180	100
6	184	170	443	b340	1,420	488	7,920	3,230	2,500	790	170	105
7	155	164	384	b340	1,240	481	8,700	3,710	2,510	718	160	108
8	140	174	263	b320	1,110	468	6,210	12,100	2,120	670	150	108
9	135	174	174	b300	1,030	514	*5,130	9,750	1,930	615	150	121
10	*127	177	143	*b300	965	830	4,770	7,750	1,920	562	160	130
11	127	191	b230	b320	947	875	4,570	7,110	1,750	520	150	145
12	130	237	b350	b300	884	721	4,910	*6,680	1,620	485	150	148
13	143	229	305	b280	737	705	4,770	6,580	1,540	446	140	138
14	167	229	241	b300	689	689	6,850	6,310	1,340	408	140	132
15	167	217	213	325	762	673	5,680	5,700	1,290	384	150	124
16	177	188	b280	290	762	745	5,020	5,000	1,290	*360	150	118
17	177	135	b300	b250	635	956	5,080	4,730	1,150	340	140	113
18	164	95	b320	b260	555	893	6,020	4,550	1,070	320	130	110
19	164	146	320	300	541	848	6,580	4,570	1,110	300	130	110
20	174	221	290	335	598	788	5,260	4,920	1,130	290	130	108
21	194	254	281	315	541	737	4,680	4,810	1,230	280	120	105
22	202	233	310	305	455	681	4,650	4,200	1,300	270	120	103
23	213	217	295	300	534	729	4,940	3,820	1,080	260	110	100
24	254	170	b250	351	534	4,280	5,660	3,720	1,000	250	110	98
25	310	135	b150	368	507	10,900	6,740	4,350	978	242	110	98
26	245	188	b100	351	*507	11,200	7,060	4,170	1,020	232	100	98
27	213	237	b140	356	520	*8,100	7,040	3,820	1,030	220	100	96
28	191	*245	b300	368	514	8,240	6,770	3,630	1,180	200	100	93
29	191	276	b400	368	541	6,260	5,480	3,440	1,160	200	a95	93
30	184	407	b360	395	-	4,830	5,130	3,080	1,250	180	100	88
31	184	-	b300	500	-	4,120	-	2,780	-	170	110	-
Total	5,548	5,896	10,527	9,457	25,548	73,299	167,910	155,480	47,108	14,977	4,235	3,300
Mean	179	197	340	305	881	2,364	5,597	5,015	1,570	483	137	110
Ac-ft	11,000	11,690	20,880	18,760	50,670	145,400	333,000	308,400	93,440	29,710	8,400	6,550

Calendar year 1951: Max 8,200 Min 77 Mean 1,429 Ac-ft 1,034,000
Water year 1951-52: Max 12,100 Min 88 Mean 1,430 Ac-ft 1,038,000

Peak discharge (base, 4,900 cfs).--Mar. 26 (10 p.m.) 20,900 cfs (14.61 ft); Apr. 7 (6 a.m.) 9,690 cfs (9.87 ft); Apr. 14 (9 a.m.) 7,210 cfs (8.53 ft); Apr. 18 (12 p.m.) 7,040 cfs (8.43 ft); Apr. 26 (8:30 p.m.) 7,390 cfs (8.63 ft); May 8 (2 p.m.) 14,400 cfs (12.05 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record July 17-22, July 27 to Sept. 2; discharge estimated on basis of composite hydrographs for stations upstream and downstream.

John Day River at Service Creek, Oreg.

Location.--Lat 44°47'40", long. 120°00'10", in NE¼ sec. 18, T. 9 S., R. 23 E., on right bank a quarter of a mile downstream from Service Creek and three-quarters of a mile southwest of Service Creek Post Office.

Drainage area.--5,090 sq mi, approximately.

Records available.--October 1929 to September 1952 in reports of Geological Survey. March 1925 to September 1926 and October 1929 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,635.83 ft above mean sea level, datum of 1929. Prior to Nov. 6, 1929, staff gage at site 12 miles downstream at different datum. Nov. 6, 1929, to Sept. 25, 1930, water-stage recorder at present site at datum 0.80 ft higher.

Average discharge.--24 years (1925-26, 1929-52), 1,704 cfs.

Extremes.--Maximum discharge during year, 26,800 cfs Mar. 26 (gage height, 15.50 ft, from floodmark); minimum, 145 cfs Sept. 3, 4, 5, 6, 7.
1929-52: Maximum discharge, 28,900 cfs Mar. 19, 1932 (gage height, 16.75 ft), from rating curve extended above 11,000 cfs; minimum, 20 cfs Sept. 6, 1931.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.7	132	5.0	1,730
2.0	200	7.0	3,830
2.5	340	9.0	7,140
3.0	540	11.0	12,200
4.0	1,050	14.0	21,400

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	435	1,020	616	1,440	1,140	6,340	7,480	3,600	1,950	253	171
2	193	411	1,420	479	4,060	1,100	6,070	6,850	3,400	1,860	250	171
3	261	375	1,350	372	3,740	1,060	6,490	6,470	3,200	1,650	240	*152
4	387	387	1,150	391	2,990	1,060	7,120	6,230	3,000	1,470	240	150
5	435	439	1,040	451	3,230	1,070	9,850	5,980	3,000	1,320	250	150
6	459	455	940	660	2,740	1,040	13,000	5,770	3,200	1,220	250	147
7	419	427	863	700	2,320	1,010	14,900	5,430	3,400	1,120	240	150
8	383	415	670	685	2,080	995	12,100	8,280	3,200	1,030	230	156
9	368	423	479	*655	1,940	1,020	9,380	15,600	*2,780	946	220	177
10	*344	423	479	650	1,830	1,410	8,270	11,600	2,720	846	224	182
11	337	439	567	670	1,820	1,650	8,040	9,960	2,730	760	234	193
12	337	483	868	650	1,790	1,490	7,590	* 9,000	2,450	690	227	207
13	347	531	745	616	1,630	1,350	7,570	8,000	2,380	640	219	217
14	354	540	598	598	1,420	1,350	9,560	7,500	2,110	594	210	212
15	415	540	554	621	1,440	1,270	10,700	7,500	2,000	549	202	222
16	411	513	576	616	*1,540	1,290	8,680	7,000	1,980	495	222	227
17	427	463	645	576	1,430	1,520	8,040	6,500	1,800	463	224	227
18	431	403	660	487	1,250	1,560	8,490	6,000	1,610	431	205	222
19	423	372	685	531	1,130	1,490	10,300	5,500	1,580	415	200	214
20	419	427	675	650	1,220	*1,440	10,400	5,500	1,730	391	195	205
21	423	513	635	640	1,180	1,380	8,440	6,000	1,730	368	188	202
22	455	540	640	630	1,040	1,290	7,530	5,500	2,020	358	184	202
23	467	522	665	616	1,030	1,240	7,370	5,000	1,760	347	177	198
24	487	495	603	655	1,140	3,750	7,790	4,800	1,590	324	175	193
25	580	447	475	770	1,120	13,200	8,930	5,000	1,550	308	172	177
26	580	427	324	735	1,100	*21,400	10,700	5,500	1,550	299	168	172
27	536	*487	327	745	1,100	*16,200	11,000	5,000	1,590	293	163	170
28	483	544	830	755	1,120	*14,500	11,000	4,800	1,670	278	156	163
29	455	576	926	785	1,130	11,900	9,930	4,600	1,830	272	159	159
30	455	650	858	800	-	9,180	8,140	4,400	1,890	261	152	159
31	447	-	720	1,020	-	7,420	-	4,000	-	250	163	-
Total	12,684	14,102	22,987	19,825	51,000	126,775	273,720	206,750	69,050	22,198	6,392	5,547
Mean	409	470	742	640	1,759	4,090	9,124	6,669	2,302	716	206	185
Ac-ft	25,160	27,970	45,590	39,320	101,200	251,500	542,900	410,100	137,000	44,030	12,680	11,000

Calendar year 1951: Max 12,800 Min 101 Mean 2,276 Ac-ft 1,648,000
Water year 1951-52: Max 21,400 Min 147 Mean 2,271 Ac-ft 1,648,000

Peak discharge (base, 5,200 cfs).--Mar. 26 (9 a.m.) 26,800 cfs (15.50 ft); Apr. 7 (12:30 p.m.) 16,100 cfs (12.36 ft); Apr. 14 (11 p.m.) 11,600 cfs (10.79 ft); Apr. 19 (11:30 p.m.) 11,400 cfs (10.71 ft); Apr. 27 (1 p.m.) 11,400 cfs (10.73 ft); May 9 (6:30 a.m.) 17,000 cfs (12.65 ft).
* Discharge measurement made on this day.
Note.--Doubtful gage-height record May 12 to June 8 and no gage-height record Aug. 2-9; discharge estimated on basis of observers' notes and records for station at McDonald Ferry.

John Day River at McDonald Ferry, Oreg.

Location.--Lat 45°35'20", long. 120°24'30", in NW¼ sec. 11, T. 1 N., R. 19 E., on left bank at McDonald Ferry, half a mile downstream from Rock Creek and 10 miles east of Klondike.

Drainage area.--7,580 sq mi, approximately.

Records available.--December 1904 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 392.27 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1930, staff gage at same site and datum.

Average discharge.--47 years (1905-52), 1,979 cfs.

Extremes.--Maximum discharge during year, 22,900 cfs Mar. 27 (gage height, 9.8 ft, from floodmark); minimum, 134 cfs Sept. 4 (gage height, 1.27 ft).
1904-52: Maximum discharge, 27,800 cfs Feb. 6, 1907 (gage height, 10.8 ft); maximum gage height, 13.2 ft (from floodmark) Feb. 8, 1950 (ice jam); minimum discharge, 4 cfs Aug. 31, 1931 (gage height, 0.68 ft).
Maximum discharge known, 39,100 cfs, from rating curve extended above 22,000 cfs, probably occurred in 1894 (gage height, 12.8 ft).

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

Revisions (water years).--W 1094: 1894(M), 1907, 1932(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 30		Jan. 31 to Sept. 30			
1.3	130	1.2	110	4.0	3,130
1.6	250	1.5	235	5.0	5,300
2.0	485	2.0	540	7.0	11,320
2.5	910	2.5	990	9.2	20,200
3.0	1,500	3.0	1,540		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	151	478	608	890	1,480	1,330	8,040	8,280	4,230	1,940	262	145
2	158	471	688	712	2,100	1,330	6,890	7,860	3,970	2,100	256	142
3	173	471	1,130	492	4,160	1,330	6,420	7,240	3,700	2,020	251	138
4	177	457	*1,440	385	4,270	*1,280	7,120	6,640	3,480	1,860	262	138
5	189	415	1,260	361	3,540	1,260	7,920	6,150	3,320	1,670	256	145
6	260	403	1,120	373	3,560	1,240	10,600	5,600	3,280	1,520	256	149
7	373	429	1,020	568	3,170	1,220	13,100	5,110	3,400	1,390	240	149
8	436	485	921	b700	2,670	1,200	14,500	4,990	3,850	1,280	235	153
9	422	471	820	b750	2,410	1,190	12,000	8,920	3,480	1,200	240	*174
10	403	464	672	b750	2,220	1,200	9,860	13,900	3,090	1,100	225	179
11	367	478	568	b700	2,110	1,340	8,800	11,200	2,960	990	*230	187
12	355	485	530	738	2,020	1,780	8,520	9,960	3,090	881	230	187
13	350	478	576	729	2,020	1,790	8,160	9,280	2,740	800	216	192
14	344	500	870	712	1,890	1,600	8,070	8,900	2,650	728	225	197
15	344	560	738	b650	1,720	1,530	9,860	8,740	2,460	674	221	211
16	355	568	688	*b600	1,620	1,500	10,600	8,430	2,240	604	216	230
17	*397	560	616	b650	1,710	1,440	8,990	7,440	2,210	540	197	235
18	409	545	616	640	1,700	1,530	8,400	6,750	2,050	505	183	235
19	422	500	680	584	1,530	1,800	8,650	6,340	1,820	464	192	235
20	436	464	696	b550	1,390	1,710	10,100	6,230	1,700	444	211	235
21	429	415	720	584	1,320	1,640	10,400	6,530	1,850	412	192	225
22	429	429	704	656	1,380	1,550	8,800	6,640	1,830	*418	183	211
23	436	522	684	684	1,310	1,500	*7,800	6,120	2,080	405	183	216
24	464	560	704	656	1,220	1,430	7,710	5,550	2,050	375	179	201
25	485	552	b700	b650	1,240	3,490	8,070	5,230	1,790	362	170	192
26	492	545	b650	720	1,320	14,100	9,120	5,600	1,720	345	166	187
27	560	492	508	810	1,300	20,000	10,800	5,910	1,690	328	170	183
28	600	471	b580	830	1,310	*15,400	10,800	5,500	1,760	294	162	179
29	552	485	b420	774	1,330	14,500	10,700	5,110	1,790	283	149	174
30	508	568	b800	1,090	-	12,100	9,630	4,890	1,960	272	149	174
31	485	-	954	1,330	-	9,530	-	4,660	-	267	145	-
Total	11,961	14,721	23,461	21,298	59,020	123,840	280,230	219,700	78,240	26,471	6,452	5,598
Mean	386	491	757	687	2,035	3,995	9,341	7,087	2,608	854	208	187
Ac-ft	23,720	29,200	46,530	42,240	117,100	245,600	555,800	435,800	155,200	52,500	12,800	11,100

Calendar year 1951: Max 13,300 Min 108 Mean 2,522 Ac-ft 1,826,000
Water year 1951-52: Max 20,000 Min 138 Mean 2,380 Ac-ft 1,728,000

Peak discharge (base, 6,300 cfs).--Mar. 27 (6 a.m.) 22,900 cfs (9.8 ft); Apr. 8 (8:30 a.m.) 15,500 cfs (8.10 ft); Apr. 20 (11:30 p.m.) 10,900 cfs (8.89 ft); Apr. 28 (11 a.m.) 11,000 cfs (8.92 ft); May 10 (3 a.m.) 15,400 cfs (8.07 ft).

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

Deschutes River below Snow Creek, near Lapine, Oreg.

Location.--Lat 43°48'50", long. 121°46'40", in NW¼ sec. 28, T. 20 S., R. 8 E., on left bank at flow line of Crane Prairie Reservoir, 50 ft downstream from Snow Creek, 300 ft upstream from bridge, and 17 miles northwest of Lapine.

Drainage area.--132 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--November 1937 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 4,445 ft (from elevation of Crane Prairie Reservoir when slack water extended to gage). Prior to Sept. 9, 1938, at site 450 ft downstream at different datum.

Average discharge.--14 years (1938-52), 143 cfs.

Extremes.--1950-51: Maximum discharge during year, 357 cfs Aug. 21 (gage height 2.74 ft); minimum, 157 cfs Mar. 22 to Apr. 2 (gage height, 1.45 ft).

1951-52: Maximum discharge during year, 329 cfs Aug. 13-15 (gage height, 2.50 ft); minimum, 94 cfs Mar. 22, 23 (gage height, 1.19 ft).

1937-52: Maximum discharge, 357 cfs (revised) Aug. 21, 1951 (gage height, 2.74 ft); maximum gage height, 4.12 ft Jan. 21, 1943 (ice jam); minimum discharge, 43 cfs Dec. 27, 1941 (gage height, 1.12 ft).

Revisions.--The maximum and minimum discharges for the water year 1951 have been revised to 357 cfs Aug. 21 (gage height, 2.74 ft) and 157 cfs Mar. 22 to Apr. 2 (gage height, 1.45 ft), respectively, superseding figures published in Water-Supply Paper 1218.

Remarks.--Records good except those for periods of backwater from Crane Prairie Reservoir, which are fair, and those for periods of no gage-height record, which are poor. No diversion or regulation above station.

Revisions.--Revised figures of discharge for the water year 1951, superseding those published in Water-Supply Paper 1218, are given herein.

Discharge, in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	259	245	207	190	167	169	157	228	269	269	336	304
2	259	257	205	190	167	169	159	228	269	271	338	302
3	260	239	212	190	167	169	162	236	269	271	338	302
4	260	234	216	190	174	174	164	234	269	274	336	300
5	269	230	207	190	174	180	164	230	272	279	336	299
6	264	230	224	190	174	183	167	239	269	279	336	297
7	260	226	222	190	176	183	167	236	267	281	336	294
8	255	228	216	190	174	178	169	234	269	283	335	291
9	250	222	214	190	171	178	171	236	267	*284	335	291
10	248	218	210	190	171	176	174	241	266	289	333	289
11	245	214	210	190	174	174	176	247	266	289	333	*286
12	243	210	207	190	174	171	183	248	266	291	332	283
13	241	208	205	190	169	167	185	250	266	294	330	279
14	240	206	212	195	167	164	192	254	264	297	*330	276
15	238	206	207	200	169	171	196	254	262	299	330	272
16	236	208	205	195	167	169	203	*255	260	302	329	269
17	234	212	203	195	167	164	210	255	260	305	329	267
18	*232	214	203	195	169	162	214	257	*260	306	328	266
19	230	216	203	195	167	159	216	260	260	310	326	262
20	228	214	201	195	169	162	216	262	260	312	324	260
21	226	212	199	200	167	159	214	267	260	316	328	259
22	222	210	199	205	167	159	214	267	262	317	324	255
23	218	208	196	202	169	157	214	271	262	322	323	254
24	216	206	195	*201	167	157	216	269	262	323	318	250
25	216	204	195	196	169	157	218	269	264	324	317	252
26	218	204	195	196	171	157	216	269	260	324	314	247
27	230	203	195	192	169	*157	214	269	262	329	314	245
28	262	*203	195	187	169	157	234	269	264	332	318	245
29	272	201	195	180	-	159	234	269	264	332	316	247
30	248	205	195	175	-	157	230	271	266	332	311	255
31	234	-	195	170	-	157	-	269	-	335	306	-
Total	7,515	6,493	6,343	5,944	4,755	5,155	5,849	7,843	7,936	9,371	10,139	8,198
Mean	242	216	205	192	170	166	195	253	265	302	327	273
Ac-ft	14,910	12,880	12,580	11,790	9,430	10,220	11,600	15,560	15,740	18,590	20,110	16,260

Calendar year 1950: Max 329 Min 83 Mean 190 Ac-ft 137,800
Water year 1950-51: Max 338 Min 157 Mean 234 Ac-ft 169,700

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 14-17, Nov. 9-27, Dec. 24 to Jan. 23, Jan. 29-31; discharge estimated on basis of records for Cultus Creek above Crane Prairie Reservoir near Lapine. Backwater from Crane Prairie Reservoir Apr. 19 to Sept. 30.

Deschutes River below Snow Creek, near Lapine, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	257	201	192	165	143	104	96	176	254	257	305	314
2	260	*201	187	160	140	104	96	176	257	250	306	314
3	254	201	190	160	140	104	98	180	255	248	316	312
4	247	199	196	160	138	104	100	180	254	250	317	312
5	241	194	203	160	134	104	100	174	255	248	314	310
6	234	192	196	160	129	104	102	178	255	250	317	306
7	226	190	192	155	127	102	104	180	255	250	317	305
8	232	187	183	155	124	102	102	194	255	*254	320	305
9	230	187	178	155	122	102	102	190	254	254	324	302
10	228	194	180	155	120	102	104	196	255	255	326	300
11	230	194	178	155	120	100	107	192	260	255	326	296
12	*230	205	176	155	124	100	109	201	259	257	328	294
13	222	199	176	150	120	98	109	207	262	260	329	292
14	228	199	176	150	120	98	109	207	262	260	*329	288
15	224	192	174	150	120	100	111	207	259	260	329	289
16	220	194	176	150	118	98	111	210	259	266	328	288
17	218	190	171	150	118	98	113	214	260	266	328	*286
18	220	187	180	145	118	98	118	218	262	267	328	284
19	220	187	180	145	118	98	118	228	*260	269	328	283
20	224	187	178	145	115	98	118	232	262	274	328	278
21	222	185	175	145	113	96	122	230	262	276	328	276
22	220	183	175	145	115	94	129	*232	260	278	328	276
23	241	180	170	140	118	98	134	236	266	281	328	276
24	222	178	170	140	113	109	138	239	262	284	328	274
25	218	176	170	140	111	*107	150	241	260	288	326	271
26	212	178	170	140	111	102	155	248	260	291	324	267
27	210	*178	170	140	109	102	164	245	262	291	323	266
28	205	178	165	138	107	100	167	247	267	294	322	260
29	205	180	165	138	107	98	169	248	267	297	320	259
30	199	185	165	*138	-	98	176	250	259	300	318	252
31	203	-	165	138	-	98	-	252	-	304	317	-
Total	7,002	5,683	5,522	4,622	3,512	3,120	3,631	6,608	7,779	8,334	10,005	8,635
Mean	226	189	178	149	121	101	121	213	259	269	323	288
Ac-ft	13,890	11,270	10,950	9,170	6,970	6,190	7,200	13,110	15,430	16,530	19,840	17,130

Calendar year 1951: Max 338 Min 157 Mean 228 Ac-ft 165,400
Water year 1951-52: Max 329 Min 94 Mean 203 Ac-ft 147,700

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 21 to Jan. 29; discharge interpolated. Backwater from Crane Prairie Reservoir Oct. 1 to Nov. 15, May 2 to Sept. 30.

Cultus River above Cultus Creek, near Lapine, Oreg.

Location.--Lat 43°49'10", long. 121°47'50", in sec. 20 or 29, T. 20 S., R. 8 E., on left bank at highway crossing upstream from flow line of Crane Prairie Reservoir, 2 miles upstream from Cultus Creek and 18 miles northwest of Lapine.

Drainage area.--16.5 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--June 1923 to September 1925, November 1937 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 4,450 ft (by barometer). Prior to Nov. 1, 1937, staff gage at site half a mile upstream at different datum.

Average discharge.--16 years (1923-25, 1938-52), 62.8 cfs.

Extremes.--Maximum discharge during year, 124 cfs May 21-23; maximum gage height, 1.16 ft Oct. 23-26; minimum discharge, 58 cfs Apr. 2, 3, 4, 5, 6.
1923-25, 1937-52: Maximum discharge, 137 cfs May 10, July 26, 27, July 31 to Aug. 2, 1951; maximum gage height, 1.18 ft July 26, 27, July 31 to Aug. 2, 1951; minimum discharge recorded, 28 cfs Mar. 22, Apr. 5-10, Nov. 18, 21, 1941.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 1)

0.7	58
1.0	126

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	78	76	85	66	64	60	92	101	101	108	111
2	90	*76	78	83	64	64	58	94	99	101	106	111
3	90	76	80	83	64	64	58	94	96	101	106	108
4	90	76	80	83	64	64	60	94	96	101	104	108
5	90	76	83	80	62	64	60	94	96	104	104	108
6	90	76	83	80	62	64	60	a94	96	104	101	108
7	90	76	83	78	62	64	60	a96	94	104	101	106
8	92	76	85	78	62	64	62	a98	94	*106	101	106
9	92	74	87	78	62	64	62	a100	94	106	101	106
10	90	74	90	76	62	64	64	a102	96	108	101	101
11	90	74	90	74	62	64	66	a104	96	108	101	101
12	*90	74	90	74	62	64	68	a106	96	111	101	99
13	90	74	90	74	62	64	70	a108	96	111	104	96
14	90	74	90	72	62	64	70	a110	99	114	*104	94
15	90	70	90	72	62	64	70	a112	101	114	104	94
16	90	68	90	70	62	64	72	a114	101	116	104	92
17	90	68	90	70	62	64	74	a116	101	116	104	*90
18	90	68	90	70	62	64	74	a118	101	118	104	90
19	90	68	90	70	62	64	76	a120	*101	118	106	90
20	90	68	90	68	62	64	78	a122	101	118	106	87
21	90	68	90	68	62	64	78	a124	101	121	106	87
22	90	68	90	68	62	64	78	*124	101	121	108	87
23	90	70	90	68	62	66	78	124	101	121	108	87
24	90	70	90	68	62	66	78	121	101	121	108	87
25	90	72	90	66	62	*66	80	118	101	121	108	87
26	90	72	90	66	62	64	80	114	101	118	108	87
27	90	*72	90	66	62	62	80	111	101	116	108	87
28	87	72	87	66	62	62	83	108	101	114	108	87
29	85	74	87	66	62	60	83	108	101	114	111	87
30	85	76	87	*66	-	60	83	106	101	114	111	87
31	80	-	85	66	-	60	-	101	-	114	111	-
Total	2,771	2,178	2,701	2,252	1,808	1,974	2,123	3,347	2,965	3,475	3,266	2,876
Mean	89.4	72.6	87.1	72.6	62.3	63.7	70.8	108	98.8	112	105	95.9
Ac-ft	5,500	4,320	5,360	4,470	3,590	3,920	4,210	6,640	5,880	6,890	6,480	5,700

Calendar year 1951: Max 137 Min 64 Mean 95.5 Ac-ft 69,170
Water year 1951-52: Max 124 Min 58 Mean 86.7 Ac-ft 62,960

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

Cultus Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°49'30", long. 121°49'30", in SW¼ sec. 19, T. 20 S., R. 8 E., on left bank 1,000 ft upstream from highway bridge, three-quarters of a mile downstream from outlet of Cultus Lake, and 19 miles northwest of Lapine.

Drainage area.--33.2 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--March to September 1924 and October 1949 to September 1952 in reports of Geological Survey. Prior to October 1949, published as Cultus Creek above Crane Prairie near Lapine. May 1923 to September 1924 and November 1937 to September 1941 in reports of State engineer. October 1941 to September 1949 in files of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 4,545 ft (by barometer). Prior to Mar. 11, 1924, staff gages on two branches of stream at sites 1½ miles downstream at different datums. Mar. 11 to Sept. 30, 1924, staff gage at site 100 ft upstream at different datum.

Average discharge.--14 years (1938-52), 21.4 cfs.

Extremes.--Maximum discharge during year, 149 cfs May 31 (gage height, 2.36 ft); minimum, 0.3 cfs Oct. 1, 2, 9-11.
1937-52: Maximum discharge, 214 cfs June 1, 1943 (gage height, 2.72 ft); maximum gage height, 2.76 ft June 15, 1950 (backwater from trees); no flow at times.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 26 to July 16)

0.4	0.3	1.0	16
.5	1.0	1.2	27
.6	2.5	1.5	54
.7	5.0	2.0	115
.8	8.5	2.3	157

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	2.0	15	20	18	14	13	45	146	72	18	3.4
2	.5	*1.2	16	20	18	14	14	47	143	70	18	3.4
3	.5	1.2	16	19	20	14	14	49	140	70	17	3.4
4	.5	1.0	18	19	20	14	14	49	137	68	17	3.4
5	.5	.9	18	18	19	14	14	50	137	66	16	3.6
6	.4	.9	19	18	18	14	14	50	140	66	16	3.4
7	.4	.8	18	18	18	13	14	52	140	64	15	3.2
8	.4	.8	18	18	18	13	14	58	139	*62	14	3.4
9	.4	.7	18	17	16	13	14	61	137	61	14	3.4
10	.3	2.0	17	17	16	13	15	62	132	58	14	3.2
11	.4	7.4	16	17	16	13	15	65	132	57	14	3.2
12	*.5	13	16	17	16	13	16	68	123	54	14	2.7
13	.5	14	16	17	16	13	16	74	119	51	13	2.5
14	.8	14	15	17	16	13	17	80	112	49	*12	2.3
15	.9	14	14	17	16	13	18	83	104	46	12	2.2
16	.7	14	14	17	16	12	18	86	97	42	11	2.0
17	.7	13	14	17	16	12	18	92	91	39	11	*2.0
18	.7	13	16	17	16	12	20	94	88	36	10	2.0
19	.8	13	17	18	16	12	20	97	*86	33	9.6	2.0
20	1.4	12	16	18	16	12	21	104	84	32	8.8	2.0
21	1.1	12	16	18	16	12	22	111	83	30	8.5	2.0
22	1.4	12	18	18	16	13	23	*122	82	28	8.2	2.0
23	3.4	12	18	18	16	14	25	123	80	26	7.4	2.0
24	4.7	11	18	17	16	14	26	125	80	25	7.1	2.0
25	5.0	11	18	17	16	*14	29	128	80	24	6.4	2.0
26	5.4	11	18	17	16	14	33	132	78	23	6.0	1.8
27	5.4	12	18	16	15	14	37	137	78	22	5.4	1.7
28	5.0	12	19	16	15	13	40	144	76	20	5.0	1.8
29	4.4	12	20	16	14	13	42	146	76	20	4.7	1.7
30	3.2	14	20	*16	-	13	44	147	74	19	4.2	1.5
31	2.2	-	20	16	-	13	-	149	-	18	3.9	-
Total	52.9	257.9	530	541	481	408	640	2,830	3,214	1,351	341.2	75.2
Mean	1.71	8.60	17.1	17.5	16.6	13.2	21.3	91.3	107	43.6	11.0	2.51
Ac-ft	105	512	1,050	1,070	954	809	1,270	5,610	6,370	2,680	677	149

Calendar year 1951: Max 108 Min 0.2 Mean 28.5 Ac-ft 20,620
Water year 1951-52: Max 149 Min 0.3 Mean 29.3 Ac-ft 21,260

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 31 to Jan. 29, June 24 to July 7; discharge estimated on basis of records for Odell Creek near Crescent.

Deer Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°48'20", long. 121°50'20", in NW¼NW¼ sec. 36, T. 20 S., R. 7 E., on right bank 150 ft downstream from highway bridge, 1¼ miles downstream from outlet of Little Cultus Lake, and 19 miles northwest of Lapine.

Drainage area.--21.5 sq mi.

Records available.--October 1923 to September 1924 and October 1949 to September 1952, in reports of Geological Survey. Prior to October 1949, published as Deer Creek above Crane Prairie, near Lapine. October 1923 to July 1924 and December 1937 to September 1941 in reports of State engineer. January to September 1925 and October 1941 to September 1949, in files of State engineer.

Gage.--Water-stage recorder and log control. Altitude of gage is 4,520 ft (by barometer). Prior to Oct. 1, 1925, staff gage at site 75 ft upstream at various datums. Dec. 1, 1937, to Sept. 30, 1938, water-stage recorder at highway bridge 150 ft upstream at different datum.

Average discharge.--14 years (1938-52), 7.45 cfs.

Extremes.--Maximum discharge during year, 70 cfs May 28 (gage height, 1.72 ft); minimum recorded, 0.3 cfs Oct. 16-19.
1923-25, 1937-52: Maximum discharge, 97 cfs Nov. 30, 1942 (gage height, 1.95 ft); maximum gage height, 2.83 ft Jan. 28, 1951 (ice jam); no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those below 1 cfs, which are poor. No diversion or regulation above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.3	0.3	1.0	17
.4	1.2	1.3	33
.5	2.8	1.7	68
.7	7.2		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.1	2.0	2.5	b2.5	2.5	5.0	24	57	10	0.8	0.6
2	.8	*1.2	2.0	2.5	b2.5	2.5	5.0	26	55	10	.8	.6
3	.7	1.2	2.0	2.5	2.5	2.5	5.5	28	51	9.5	.8	.6
4	.6	1.2	2.0	2.5	2.5	2.5	6.0	30	48	9.0	.8	.6
5	.6	1.2	1.5	2.5	2.5	2.5	6.5	32	47	8.5	.8	.6
6	.5	1.3	1.5	2.5	2.5	2.5	7.0	34	48	8.0	.6	.6
7	.5	1.3	1.5	2.5	2.5	2.5	7.0	36	47	7.5	.6	.6
8	.5	1.3	1.5	2.0	2.5	2.5	7.0	38	45	*7.0	.6	.6
9	.4	1.3	2.0	2.0	2.5	2.5	7.0	39	42	6.5	.6	.6
10	.4	1.8	2.0	2.0	2.5	2.5	7.5	42	39	6.0	.6	.6
11	.4	1.9	2.0	2.0	2.5	2.5	8.0	44	36	5.3	.6	.5
12	*.4	2.0	2.0	2.0	2.5	2.5	9.0	46	33	4.8	.6	.6
13	.4	2.0	2.0	2.0	2.5	2.5	9.0	49	30	4.2	.6	.5
14	.6	2.0	2.0	2.0	2.5	2.5	9.0	59	28	3.8	*.6	.5
15	.4	2.0	2.0	2.0	2.5	2.5	9.0	58	26	3.4	.6	.4
16	.4	2.0	2.0	2.0	2.5	2.5	10	58	*23	2.8	.6	.4
17	.3	2.0	2.0	2.0	2.5	2.5	10	59	21	2.4	.5	*.4
18	.3	2.0	2.0	2.0	2.5	2.5	10	63	19	2.0	.5	.4
19	.3	2.0	2.0	2.0	2.5	2.5	10	66	17	1.8	.5	.4
20	.6	2.0	2.0	2.0	2.5	2.5	10	*68	17	1.6	.5	.4
21	.4	1.5	2.0	2.0	2.5	2.5	11	66	16	1.4	.5	.4
22	.6	1.5	2.0	2.0	2.5	2.5	12	64	15	1.2	.5	.4
23	1.3	1.5	2.0	2.5	2.5	3.0	14	62	15	1.2	.5	.4
24	1.3	1.5	2.5	2.5	2.5	3.5	15	62	14	1.2	.5	.4
25	1.3	1.5	2.5	2.5	2.5	*b4.2	18	63	13	1.1	.5	.4
26	1.3	1.5	2.5	2.5	2.5	b4.5	20	65	12	1.0	.5	.4
27	1.3	1.5	2.5	2.5	2.5	b5.0	20	64	12	1.0	.5	.4
28	1.3	1.5	2.5	2.5	2.5	b5.0	20	67	12	.8	.6	.4
29	1.2	1.5	2.5	2.5	2.5	5.5	20	67	11	1.0	.6	.4
30	1.1	2.0	2.5	*b2.4	-	5.0	22	65	11	.8	.6	.4
31	1.1	-	2.5	b2.5	-	5.0	-	61	-	.8	.6	-
Total	22.1	48.3	64.0	69.9	72.5	95.7	329.5	1,605	860	125.6	18.5	14.5
Mean	0.71	1.61	2.06	2.25	2.50	3.09	11.0	51.8	28.7	4.05	0.60	0.48
Ac-ft	44	96	127	139	144	190	654	3,180	1,710	249	37	29

Calendar year 1951: Max 50 Min 0.2 Mean 10.0 Ac-ft 7,250
Water year 1951-52: Max 68 Min 0.3 Mean 9.09 Ac-ft 6,600

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 1-11, Nov. 12 to Jan. 29, Feb. 3 to Mar. 24, Mar. 29 to May 7, June 26 to July 7; discharge estimated on basis of weather records and records for Odell Creek near Crescent and Cultus Creek above Crane Prairie Reservoir.

Quinn River near Lapine, Oreg.

Location.--Lat 43°47'10", long. 121°50'10", in NW¼ sec. 1, T. 21 S., R. 7 E., on left bank just upstream from flow line of Crane Prairie Reservoir, 150 ft downstream from springs at head of river and 19 miles northwest of Lapine.

Records available.--June 1922 to September 1925, November 1937 to September 1952.

Gage.--Water-stage recorder and log control. Datum of gage is 4,442.1 ft above mean sea level, based on elevation of Crane Prairie Reservoir when slack water reached station. June 1, 1922, to Sept. 30, 1925, staff gage at site 200 ft downstream at different datum. Nov. 1, 1937, to Sept. 13, 1938, water-stage recorder at present site and datum and natural control.

Average discharge.--17 years (1922-25, 1938-52), 22.1 cfs.

Extremes.--Maximum discharge during year, 51 cfs June 16-20; maximum gage height, 3.66 ft May 22 (backwater from reservoir); minimum discharge, 18 cfs Feb. 11-17.
1922-25, 1937-52: Maximum discharge, 59 cfs July 4, 1949; maximum gage height, that of May 22, 1952; practically no flow Nov. 14, 1941.

Remarks.--Records fair. No diversion or regulation above station.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	39	33	26	22	20	20	30	43	49	46	41
2	40	*39	33	26	22	20	20	30	43	49	45	41
3	40	39	33	26	22	20	19	31	44	48	45	41
4	40	39	32	26	20	19	20	31	44	48	45	41
5	39	39	32	26	20	19	20	31	45	48	45	41
6	39	38	32	26	20	19	21	32	45	48	45	41
7	39	38	31	24	19	19	21	32	46	48	45	41
8	39	38	31	24	19	19	22	33	46	*48	45	40
9	38	38	31	24	19	19	22	33	47	48	45	40
10	38	38	30	24	19	19	23	33	47	48	44	40
11	38	37	30	24	18	19	23	34	48	48	44	40
12	*38	37	30	24	18	19	24	34	48	48	44	40
13	38	37	29	24	18	19	24	34	49	48	44	40
14	38	37	29	24	18	19	24	35	50	47	*44	39
15	38	37	29	23	18	19	25	35	50	47	44	39
16	38	36	28	23	18	19	25	35	*51	47	44	39
17	38	36	28	23	18	20	25	36	51	47	44	*39
18	38	36	28	23	19	20	26	36	51	47	43	39
19	38	36	26	23	19	20	26	37	51	47	43	39
20	38	36	26	23	19	20	26	*37	51	47	43	39
21	38	35	26	23	19	19	27	37	50	47	43	39
22	38	35	26	23	19	19	27	38	50	47	43	39
23	39	35	26	23	19	20	27	38	50	47	43	39
24	39	35	26	23	19	22	28	39	50	46	43	39
25	39	34	26	23	20	*22	28	39	50	46	42	39
26	39	34	26	23	19	22	28	40	50	46	42	39
27	39	*34	26	23	19	22	29	40	49	46	42	39
28	39	34	26	23	19	22	29	41	49	46	42	39
29	39	34	26	23	20	22	29	41	49	46	42	39
30	39	33	26	*23	-	20	30	42	49	46	42	39
31	39	-	26	23	-	20	-	42	-	46	42	-
Total	1,199	1,093	887	739	558	617	738	1,106	1,446	1,464	1,353	1,190
Mean	38.7	36.4	28.6	23.8	19.2	19.9	24.6	35.7	48.2	47.2	43.6	39.7
Ac-ft	2,380	2,170	1,760	1,470	1,110	1,220	1,460	2,190	2,870	2,900	2,680	2,360

Calendar year 1951 : Max 54 Min 26 Mean 41.3 Ac-ft 29,890
Water year 1951-52 : Max 51 Min 18 Mean 33.9 Ac-ft 24,570

* Discharge measurement made on this day.
Note.--Backwater from Crane Prairie Reservoir Oct. 1 to Dec. 13, Apr. 5 to Sept. 30; discharge interpolated.

Charlton Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°47'00", long. 121°50'00", in NE¼SW¼ sec. 1, T. 21 S., R. 7 E., on left bank 3 miles northwest of Crane Prairie dam and 18 miles northwest of Lapine.

Drainage area.--15.6 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--October 1949 to September 1952 in reports of Geological Survey. May 1923 to May 1924 and October 1937 to September 1941 in reports of State Engineer. October 1941 to September 1949 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 4,458.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 1, 1923, to May 23, 1924, staff gage at about same site at different datum.

Average discharge.--14 years (1937-51), 1.42 cfs.

Extremes.--Maximum discharge during year, 32 cfs May 29 (gage height, 1.35 ft); no flow at times.

1923-24, 1937-52: Maximum discharge, 54 cfs June 12, 1950 (gage height, 1.53 ft), from rating curve extended above 17 cfs; maximum gage height, 2.17 ft about Jan. 28, 1951 (ice jam); no flow at times.

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

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0	23	a7		
2								0	22	a6		
3								0	22	5.3		
4								0	24	5.3		
5								0	24	5.0		
6								0	26	4.5		
7								a1	21	3.9		
8								a2	20	*3.2		
9								a3	20	3.0		
10								a6	18	2.5		
11								a8	15	2.2		
12								a10	12	1.2		
13								a12	10	0		
14								a14	8.5	0		
15								a15	7.9	0		
16								a18	*7.6	0		
17								a20	7.9	0		
18								a22	8.5	0		
19								a25	7.9	0		
20								*28	9.0	0		
21								26	9.6	0		
22								25	7.6	0		
23								26	7.9	0		
24								26	8.5	0		
25								27	7.6	0		
26								26	6.6	0		
27								26	6.9	0		
28								28	8.5	0		
29								28	9.6	0		
30								26	a8.5	0		
31								25	-	0		
Total								473	395.6	49.1	0	0
Mean								15.3	13.2	1.58	0	0
Ac-ft								938	785	97	0	0

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.
a No gage-height record, discharge estimated on basis of notes by watermaster and records for Deer Creek above Crane Prairie Reservoir near Lapine.
Note.--No record obtained Oct. 1 to Apr. 30; but little if any flow occurred during this period.

Deschutes River below Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°45'10", long. 121°46'50", in NW¼ sec. 16, T. 21 S., R. 8 E., on left bank 600 ft downstream from Crane Prairie Dam and 15 miles northwest of Lapine.

Drainage area.--254 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--January 1914 to June 1917, February 1922 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 4,415 ft (by barometer). Prior to June 9, 1922, staff gage at site half a mile upstream at different datum. June 9, 1922, to May 9, 1932, staff gage or water-stage recorder at present site and datum.

Average discharge.--31 years (1914-15, 1922-52), 193 cfs.

Extremes.--Maximum discharge during year, 906 cfs Nov. 27, 28 (gage height, 2.94 ft); minimum, 63 cfs part or all of each day Dec. 18 to Jan. 9 (gage height, 0.77 ft).
1914-17, 1922-52: Maximum discharge, 1,170 cfs July 28, 1947 (gage height, 3.34 ft); minimum, 2 cfs Dec. 21, 1940, Nov. 1, 1942, June 13-25, 1948.

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion above station. Flow regulated since Nov. 4, 1922, by Crane Prairie Reservoir (see p. 66).

Revisions.--W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from tree Jan. 24 to May 4)

0.7	52	2.0	435
1.0	104	2.5	655
1.5	245	3.0	945

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	222	212	886	63	68	68	68	73	480	375	287	298
2	228	209	880	63	68	68	68	73	*475	375	290	298
3	*235	206	874	63	70	68	70	73	475	375	*290	298
4	*232	209	868	65	70	68	70	*73	475	375	290	*298
5	228	209	862	63	68	68	70	73	475	371	294	298
6	225	206	856	65	68	68	70	75	475	367	294	298
7	222	206	844	63	68	68	68	80	475	363	294	298
8	222	206	838	65	68	68	70	87	471	*327	294	298
9	219	203	826	63	68	68	70	94	471	290	294	298
10	219	206	820	65	68	68	71	100	467	290	298	298
11	215	212	814	66	68	68	71	111	467	290	298	298
12	219	228	802	66	68	68	71	119	467	290	298	294
13	219	523	790	66	68	68	71	184	463	290	298	294
14	219	790	778	66	68	68	71	339	463	290	*298	290
15	219	772	766	66	68	68	71	339	459	*290	298	290
16	219	766	749	66	68	68	71	339	443	290	298	290
17	a219	754	744	66	68	68	71	339	419	290	298	*290
18	a219	749	344	66	68	68	71	335	415	290	298	280
19	a219	749	63	66	68	70	71	339	399	290	298	259
20	a219	744	63	66	68	70	71	363	371	290	298	259
21	a219	738	63	66	68	70	71	*427	371	290	298	259
22	a219	738	63	66	68	70	73	459	371	290	298	252
23	a219	*732	63	68	68	68	73	570	*371	290	298	245
24	a219	727	63	68	68	68	73	560	371	290	298	245
25	a219	722	63	68	68	*70	73	552	*371	290	298	245
26	a219	722	63	68	68	70	73	547	371	290	298	245
27	a219	834	63	68	68	70	75	*516	371	290	298	245
28	a219	900	63	68	68	70	75	488	375	290	298	238
29	a219	900	63	68	68	70	75	484	375	290	298	232
30	*219	893	63	68	-	70	75	484	375	*290	298	228
31	215	-	63	68	-	70	-	484	-	287	298	-
Total	6,843	16,265	15,160	2,042	1,976	2,130	2,141	9,179	12,827	9,595	9,183	8,258
Mean	221	542	489	65.9	68.1	68.7	71.4	296	428	310	296	275
Ac-ft	13,570	32,260	30,070	4,050	3,920	4,220	4,250	18,210	25,440	19,030	18,210	16,380

Calendar year 1951: Max 900 Min 22 Mean 260 Ac-ft 188,000
Water year 1951-52: Max 900 Min 63 Mean 261 Ac-ft 189,600

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

Brown Creek near Lapine, Oreg.

Location.--Lat 43°43'30", long. 121°48'40", in SE¼NE¼ sec. 30, T. 21 S., R. 8 E., on left bank 1½ miles upstream from mouth and 15 miles northwest of Lapine.

Drainage area.--19.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--May 1922 to September 1925 and October 1949 to September 1952 in reports of Geological Survey. May 1922 to September 1925, November 1925 to October 1927 (discharge measurements only), and June 1938 to September 1941 in reports of State engineer. October 1941 to September 1949 (discharge measurements only, October 1945 to September 1946) in files of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 4,375 ft (by barometer). May 24, 1922, to Oct. 11, 1927, staff gage and June 17, 1938, to Nov. 1, 1945, water-stage recorder, at site 1¼ miles downstream at different datum.

Average discharge.--16 years (1922-25, 1938-45, 1946-52), 36.6 cfs.

Extremes.--Maximum discharge during year, 67 cfs Oct. 2 (gage height, 1.36 ft); minimum, 45 cfs Mar. 22 to Apr. 4.
1922-25, 1938-45, 1946-52: Maximum discharge, 87 cfs Oct. 28, 1950 (gage height, 1.43 ft); minimum, 16 cfs July 22-25, 1941, and at times December 1941 to March 1942.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from aquatic vegetation July 3 to Sept. 30)

1.1	40
1.3	67

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	60	60	56	48	46	45	54	57	57	63	63
2	67	60	60	55	48	46	45	54	57	57	63	63
3	66	60	60	55	48	46	45	54	57	57	*63	63
4	66	60	60	55	48	46	45	54	57	57	63	63
5	64	60	60	54	48	46	45	54	57	57	63	63
6	64	60	60	54	48	46	46	54	57	59	63	61
7	64	60	60	54	48	46	46	54	57	59	63	61
8	64	60	60	53	48	46	46	*54	57	*59	64	60
9	64	60	60	53	48	46	48	54	57	59	64	60
10	*64	60	60	53	48	46	48	54	57	59	64	60
11	64	60	60	52	48	46	48	54	57	60	64	60
12	64	60	60	52	48	46	49	54	57	60	64	60
13	64	60	60	51	46	46	49	54	57	60	64	60
14	64	60	60	51	46	46	50	54	57	61	64	60
15	64	60	59	51	46	46	52	54	57	61	64	60
16	63	60	59	50	46	46	52	54	*57	61	64	60
17	63	60	59	50	46	46	52	54	57	61	64	*60
18	63	60	59	50	46	46	52	54	57	61	64	60
19	63	60	57	49	46	46	53	54	57	63	64	60
20	63	60	57	49	46	46	53	54	57	63	64	60
21	61	60	57	49	46	46	54	54	57	63	64	60
22	61	60	59	48	46	45	54	56	57	63	64	60
23	61	60	59	48	46	45	54	56	57	63	64	60
24	61	60	57	48	46	45	54	56	57	63	64	60
25	61	60	57	47	46	*45	54	57	57	63	64	60
26	61	60	57	47	46	45	54	57	57	63	64	60
27	61	60	57	47	46	45	54	57	57	63	64	60
28	61	60	57	46	46	45	54	57	57	63	64	60
29	61	60	57	46	46	45	54	57	57	63	64	60
30	*61	60	56	*46	-	45	54	57	57	63	63	60
31	61	-	56	46	-	45	-	57	-	63	63	-
Total	1,955	1,800	1,819	1,565	1,358	1,416	1,509	1,701	1,710	1,884	1,975	1,817
Mean	63.1	60.0	58.7	50.5	46.8	45.7	50.3	54.9	57.0	60.8	63.7	60.6
Ac-ft	3,880	3,570	3,610	3,100	2,690	2,810	2,990	3,370	3,390	3,740	3,920	3,600

Calendar year 1951: Max 73 Min 49 Mean 60.2 Ac-ft 43,550
Water year 1951-52: Max 67 Min 45 Mean 56.0 Ac-ft 40,670

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 28 to Jan. 29; discharge interpolated.

Odell Creek near Crescent, Oreg.

Location.--Lat 43°32'50", long. 121°57'40", in SW¼ sec. 25, T. 23 S., R. 6 E., on left bank 1,000 ft below outlet of Odell Lake, 3½ miles north of Crescent Lake, and 14 miles northwest of Crescent.

Drainage area.--39.0 sq mi.

Records available.--August 1911 to August 1914 (incomplete), December 1923 to June 1924, May 1933 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 4,778.83 ft above mean sea level, datum of 1929.

Average discharge.--19 years (1933-52), 77.7 cfs.

Extremes.--Maximum discharge during year, 241 cfs June 9 (gage height, 0.97 ft); minimum, 40 cfs Apr. 25 (caused by ice jamming at outlet of lake).
1911-14, 1923-24, 1933-52: Maximum discharge, 405 cfs Dec. 30, 1945 (gage height, 1.37 ft), from rating curve extended above 190 cfs; maximum gage height, 2.03 ft Jan. 5, 1947 (ice jam); minimum discharge recorded, 10 cfs Mar. 4, 5, 1951 (caused by ice jamming at outlet of lake).

Remarks.--Records good. Flow affected occasionally by ice jams in winter and at other times by debris which collects on fish racks or by boards used at outlet of Odell Lake to regulate lake levels; slightly affected at times by seiches on Odell Lake.

Revisions (water years).--W 794: 1933-34.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 28		May 29 to Sept. 30	
0.4	58	0.4	57
.6	124	.7	147
.9	223	1.0	252

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	*95	140	140	127	89	*111	140	204	157	95	63
2	92	95	140	133	136	85	111	140	*200	154	95	66
3	99	95	152	127	136	89	108	133	200	154	95	69
4	95	92	161	127	133	89	105	130	200	154	92	69
5	92	92	178	127	121	92	102	127	204	150	92	69
6	92	*85	178	121	118	92	102	124	214	147	89	69
7	89	82	165	114	111	89	105	130	214	144	86	69
8	85	82	152	111	106	89	105	133	214	141	86	72
9	82	78	146	118	105	89	105	133	225	*141	86	77
10	78	85	136	127	102	92	105	133	225	144	83	77
11	82	102	133	127	102	95	102	133	218	144	83	74
12	89	127	127	124	108	92	102	133	200	144	83	72
13	89	133	124	121	105	92	105	143	190	144	*83	69
14	89	136	118	121	102	85	108	149	183	144	80	66
15	99	127	111	121	102	85	108	152	173	141	80	66
16	95	121	114	114	105	85	105	152	167	135	77	69
17	92	114	108	111	105	82	105	155	160	132	77	69
18	89	111	121	108	105	89	105	158	160	125	74	69
19	92	105	133	108	108	99	108	168	157	116	72	69
20	102	102	127	114	108	99	108	175	157	116	72	69
21	105	99	124	124	105	95	108	181	157	110	69	69
22	105	99	140	133	105	92	108	185	157	*107	69	69
23	127	95	143	127	111	102	108	185	160	104	69	69
24	133	89	140	130	105	118	111	188	160	101	69	*69
25	130	92	136	124	102	124	114	194	160	101	69	69
26	121	95	136	121	99	121	124	197	154	101	69	69
27	114	102	143	114	95	118	130	203	154	101	66	69
28	111	111	146	111	92	114	140	208	154	101	66	66
29	108	114	149	108	89	111	140	207	160	98	69	66
30	102	124	155	111	-	114	140	211	160	98	66	66
31	99	-	152	114	-	114	-	211	-	98	66	-
Total	3,052	3,079	4,328	3,731	3,150	3,021	3,338	5,011	5,441	3,947	2,427	2,073
Mean	98.5	103	140	120	109	97.5	111	162	181	127	78.3	69.1
Cfsm	2.53	2.64	3.59	3.08	2.79	2.50	2.85	4.15	4.64	3.26	2.01	1.77
In.	2.91	2.94	4.13	3.56	3.00	2.88	3.18	4.78	5.19	3.76	2.31	1.98
Ac-ft	6,050	6,110	8,580	7,400	6,250	5,990	6,620	9,940	10,790	7,830	4,810	4,110

Calendar year 1951: Max 189 Min 22 Mean 108 Cfsm 2.77 In. 37.55 Ac-ft 78,090
Water year 1951-52: Max 225 Min 63 Mean 116 Cfsm 2.97 In. 40.62 Ac-ft 84,480

* Discharge measurement made on this day.

Deschutes River below Wickiup Reservoir, near Lapine, Oreg.

Location.--Lat 43°41'20", long. 121°41'00", in NE¼ sec. 7, T. 22 S., R. 9 E., on left bank 2,000 ft downstream from Wickiup Dam and 9 miles west of Lapine.

Drainage area.--483 sq mi.

Records available.--June 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 4,257.41 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--14 years, 718 cfs.

Extremes.--Maximum discharge during year, 2,180 cfs July 31 (gage height, 7.71 ft); minimum, 10 cfs Jan. 17 (gage height, 1.00 ft).
1938-52: Maximum discharge, 2,220 cfs Sept. 8, 9, 1951 (gage height, 7.79 ft); no flow Oct. 20, 1948.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Crane Prairie Reservoir and since Dec. 24, 1942, by Wickiup Reservoir (see p. 66).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	10	3.0	370
1.2	25	5.0	1,020
1.5	56	7.0	1,860
2.0	127	7.7	2,180
2.5	232		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,220	952	92	85	23	266	942	836	1,460	*1,990	2,150	1,520
2	1,180	938	92	85	38	266	934	746	*1,590	2,000	2,130	1,540
3	1,160	931	94	85	30	266	934	749	1,690	1,990	2,120	1,460
4	1,150	928	94	a85	30	269	942	802	1,680	1,990	2,110	1,400
5	1,150	928	94	a85	30	304	945	861	1,680	1,980	2,110	1,400
6	1,150	*938	95	a85	43	570	945	861	1,680	1,970	2,110	1,400
7	1,150	653	92	a85	*57	685	948	826	1,680	2,040	2,110	1,410
8	1,150	466	89	a85	58	685	942	749	1,680	2,080	2,100	1,390
9	1,160	466	92	a85	58	685	956	749	1,680	2,080	2,100	1,390
10	*1,150	466	94	a85	60	682	942	749	*1,670	*2,080	2,110	1,390
11	1,150	466	95	a85	60	682	924	746	1,690	2,070	2,120	1,390
12	1,150	466	*95	a85	60	682	924	746	1,720	2,070	2,100	1,390
13	1,150	320	95	a85	60	*682	924	746	1,720	2,060	2,100	1,390
14	1,140	a170	96	a85	61	682	924	746	1,720	2,070	*2,110	1,380
15	1,140	a170	96	a85	62	682	*924	746	1,720	2,070	*2,120	1,390
16	1,070	a170	98	*77	63	679	924	746	1,740	2,070	2,120	1,390
17	948	a175	98	10	63	679	928	746	1,790	2,060	2,130	1,390
18	924	a170	113	11	63	*679	724	792	1,780	2,070	2,120	*1,370
19	924	126	120	129	74	679	625	976	1,800	2,080	*2,110	1,360
20	931	92	115	178	100	679	690	976	1,890	2,080	2,120	1,350
21	934	94	107	118	286	679	889	*976	1,880	2,060	2,130	1,360
22	934	87	110	143	511	679	902	1,070	1,880	2,070	2,130	1,350
23	931	*92	110	143	508	679	1,150	1,380	*1,920	2,070	2,110	1,330
24	934	100	108	143	508	679	1,170	1,430	1,950	2,060	1,960	1,330
25	934	96	95	145	315	682	*1,160	1,430	*1,980	2,060	1,700	1,340
26	942	108	82	145	215	682	1,160	1,430	2,000	2,060	1,730	1,330
27	945	91	87	145	276	685	1,150	1,430	2,000	2,050	1,720	1,330
28	945	88	87	108	220	685	1,070	1,430	1,990	2,060	1,600	1,310
29	942	89	88	22	266	685	962	1,430	1,990	2,080	1,540	1,280
30	945	91	88	12	-	685	928	1,430	1,980	*2,080	1,540	1,260
31	*948	-	87	13	-	776	-	1,430	-	2,140	1,540	-
Total	32,481	10,927	2,998	2,817	4,198	19,079	28,482	30,760	53,630	63,690	62,000	41,320
Mean	1,048	364	96.7	90.9	145	615	949	992	1,788	2,055	2,000	1,377
Ac-ft	64,430	21,670	5,950	5,590	8,330	37,840	56,490	61,010	106,400	126,300	123,000	81,960

Calendar year 1951: Max 2,200 Min 55 Mean 1,022 Ac-ft 740,200
Water year 1951-52: Max 2,150 Min 10 Mean 963 Ac-ft 699,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station at Pringle Falls.

Deschutes River at Pringle Falls, near Lapine, Oreg.

Location.--Lat 43°44'20", long. 121°36'50", in SW¼ sec. 23, T. 21 S., R. 9 E., on left bank half a mile upstream from bridge at Pingle Falls, 7 miles northwest of Lapine, and at mile 217.

Drainage area.--507 sq mi.

Records available.--December 1915 to June 1917, June 1922 to September 1952 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 4,243.14 ft above mean sea level (Forest Service benchmark). Prior to June 6, 1922, staff gage at same site at datum 3.09 ft higher. June 6, 1922, to Nov. 9, 1947, water-stage recorder at present site at datum 2.00 ft higher.

Average discharge.--29 years (1923-52), 719 cfs.

Extremes.--Maximum discharge during year, 2,120 cfs July 31, Aug. 21 (gage height, 5.91 ft); minimum, 27 cfs Jan. 19 (gage height, 1.22 ft).
1915-17, 1922-52: Maximum discharge, 2,160 cfs Sept. 4, 8, 1951 (gage height, 5.94 ft); minimum, that of Jan. 19, 1952.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion above station. Flow regulated since 1922 by Crane Prairie Reservoir and since Dec. 24, 1942, by Wickiup Reservoir (see p. 66).

Revisions (water years).--W 1014: 1943(m).

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	25	3.0	390
1.5	52	4.0	820
2.0	120	6.0	2,190
2.5	232		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,200	936	124	b100	35	281	942	836	1,430	1,970	2,100	1,520
2	a1,180	924	115	b100	61	281	930	750	1,550	1,970	2,080	1,520
3	a1,150	919	115	b100	49	284	930	755	1,660	1,970	2,060	1,480
4	a1,140	908	112	b100	49	284	942	800	1,650	1,970	2,060	1,410
5	a1,140	*908	b115	100	48	293	954	858	*1,650	1,960	2,060	1,410
6	a1,140	914	b115	98	53	497	960	858	1,650	1,950	2,060	1,410
7	a1,140	708	b110	97	*71	693	966	842	1,650	1,980	2,060	1,420
8	a1,140	411	b105	97	71	693	948	775	1,650	2,050	2,050	1,400
9	a1,140	437	b105	98	71	693	966	765	1,650	2,050	2,050	1,400
10	*1,140	445	a105	103	71	693	954	760	1,650	*2,050	2,060	1,400
11	1,130	453	a105	97	71	688	930	760	1,670	2,030	2,080	1,400
12	1,130	457	*b105	98	71	688	930	760	1,710	2,020	2,090	1,390
13	1,130	345	b105	98	71	688	930	760	1,710	2,010	2,070	1,400
14	1,130	182	b105	*98	70	688	924	765	1,700	2,010	2,080	1,390
15	1,140	189	b110	98	74	688	919	765	1,700	2,010	2,090	1,390
16	1,090	a191	b110	98	74	688	919	765	1,700	2,000	2,090	1,400
17	984	192	117	60	73	688	919	765	1,740	1,990	2,100	1,400
18	919	192	130	30	73	693	785	785	1,740	1,990	2,100	*1,380
19	919	169	143	71	76	688	644	984	1,740	1,990	*2,090	1,370
20	930	122	135	293	91	688	652	984	1,830	1,990	2,100	1,360
21	936	120	120	124	215	688	*880	978	1,860	1,990	2,110	1,370
22	936	115	126	152	517	688	842	1,030	1,850	1,990	2,110	1,360
23	936	102	126	152	513	693	1,100	1,340	1,900	2,000	2,090	1,340
24	930	117	122	152	513	698	1,130	1,410	1,930	1,980	2,030	1,340
25	930	115	117	154	377	698	1,130	1,410	1,940	1,980	1,650	1,340
26	930	133	97	154	243	698	1,130	1,410	1,970	1,980	1,720	1,340
27	930	118	100	154	284	698	1,130	1,410	1,970	1,980	1,710	1,340
28	936	117	98	143	222	698	1,070	1,420	1,970	1,980	1,640	1,320
29	930	115	100	47	281	698	948	1,420	1,970	1,980	1,540	1,290
30	930	120	b100	29	-	698	919	1,420	1,970	2,010	1,540	1,260
31	930	-	98	30	-	750	-	1,420	-	2,040	1,540	-
Total	32,266	11,174	3,490	3,325	4,488	19,282	28,323	30,760	52,760	61,870	61,210	41,550
Mean	1,041	372	113	107	155	622	944	992	1,759	1,996	1,975	1,385
Ac-ft	64,000	22,160	6,920	6,600	8,900	38,250	56,180	61,010	104,600	122,700	121,400	82,410

Calendar year 1951: Max 2,150 Min 58 Mean 1,006 Ac-ft 728,400
Water year 1951-52: Max 2,110 Min 29 Mean 958 Ac-ft 695,100

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

Fall River near Lapine, Oreg.

Location.--Lat 43°47'50", long. 121°34'20", in SE¼ sec. 31, T. 20 S., R. 10 E., on left bank 50 ft downstream from spillway from ponds at State fish hatchery and 9 miles northwest of Lapine.

Drainage area.--45.1 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--May to September 1912 (fragmentary) and June 1938 to September 1952 in reports of Geological Survey. October 1923 to September 1924 and July 1938 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 4,220 ft (by barometer). May 13 to Sept. 15, 1912, and Oct. 1, 1923, to Sept. 30, 1924, staff gages at two sites within 3½ miles downstream at different datums.

Average discharge.--14 years (1938-52), 142 cfs.

Extremes.--Maximum discharge during year, 250 cfs July 28 (gage height, 1.94 ft); minimum, 171 cfs Mar. 17.
1938-52: Maximum discharge, that of July 28, 1952; minimum, 68 cfs Apr. 6, 1942.

Remarks.--Records good. Water diverted above station only to ponds at fish hatcheries, from which water returns to river above station. Momentary extremes are caused by operation of fish hatchery.

Revisions (water years).--W 984: 1938-42(M,m).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.5	167
2.0	262

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	206	202	198	196	187	189	191	215	217	208	215	212
2	206	202	200	196	186	189	191	217	*214	208	214	212
3	*206	202	200	195	186	189	193	217	214	210	212	210
4	204	198	202	195	186	189	194	217	212	210	210	210
5	204	*198	198	195	186	187	196	221	212	210	212	208
6	204	198	196	194	185	185	196	223	212	210	210	206
7	202	198	196	194	185	185	198	227	210	208	208	206
8	202	198	196	194	*185	185	200	227	210	*208	206	204
9	204	196	196	193	183	185	200	227	210	208	206	202
10	206	198	196	193	183	183	198	227	208	208	204	202
11	206	200	*196	193	185	183	198	229	210	208	202	200
12	206	202	196	192	183	181	196	229	208	208	*202	200
13	208	200	196	192	185	*178	194	232	208	210	202	198
14	208	200	196	192	185	178	191	231	208	210	202	198
15	206	198	196	191	185	178	191	231	208	210	202	198
16	208	196	196	191	185	178	189	232	206	214	202	198
17	208	198	198	*191	185	178	187	234	206	214	204	*200
18	206	198	198	191	185	180	187	232	206	214	204	202
19	208	198	198	191	185	180	187	232	204	215	204	202
20	210	198	200	190	187	181	185	234	204	215	206	202
21	208	198	200	190	187	180	189	234	204	215	208	202
22	210	198	202	190	187	181	193	232	206	217	208	202
23	212	198	200	190	189	181	194	234	208	217	212	202
24	208	198	200	189	189	185	198	232	208	215	212	202
25	210	198	198	189	189	185	202	231	208	217	210	202
26	208	198	198	189	189	185	204	229	208	217	212	204
27	206	200	198	188	189	187	206	229	208	217	212	204
28	206	198	198	188	189	187	210	227	208	217	214	204
29	208	198	198	188	189	187	*214	225	208	215	214	204
30	208	200	198	187	-	189	215	221	208	215	214	204
31	206	-	196	187	-	189	-	219	-	215	214	-
Total	6,408	5,962	6,134	5,934	5,399	5,697	5,887	7,047	6,259	6,583	6,457	6,100
Mean	207	199	198	191	186	184	196	227	209	212	208	203
Ac-ft	12,710	11,830	12,170	11,770	10,710	11,300	11,680	13,980	12,410	13,060	12,810	12,100

Calendar year 1951: Max 244 Min 176 Mean 207 Ac-ft 149,700
Water year 1951-52: Max 234 Min 178 Mean 202 Ac-ft 146,500

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 1-16, Jan. 18 to Feb. 7; discharge interpolated.

Crescent Creek at Crescent Lake, near Crescent, Oreg.

Location.--Lat 43°30'00", long. 121°58'20", in sec. 11, T. 24 S., R. 6 E., on right bank 300 ft downstream from dam at outlet of Crescent Lake and 14 miles west of Crescent.

Drainage area.--60.7 sq mi.

Records available.--January 1911 to July 1915, July 1927 to September 1952.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 4,826.72 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Jan. 11, 1911, to July 31, 1915, staff gages near present site at different datums. July 19, 1927, to June 1936, water-stage recorder near present site at different datum.

Average discharge.--27 years (1911-14, 1928-52), 46.1 cfs.

Extremes.--Maximum discharge during year, 225 cfs Aug. 23, 24, 25 (gage height, 2.67 ft); minimum, 93 cfs Apr. 16 to May 1 (gage height, 1.54 ft).
1911-15, 1927-52: Maximum discharge, 313 cfs July 9, 1929, Aug. 9, 1936; no flow at times.

Remarks.--Records good. Flow regulated since 1922 by Crescent Lake (p. 66), storage being released for diversion below station through Deschutes County Municipal Improvement District Canal at Bend. No diversion above station.

Revisions.--W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.5	89
2.0	142
2.7	229

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	152	95	102	101	100	97	93	216	123	146	215
2	219	151	96	102	101	100	97	94	217	133	146	213
3	219	151	96	102	101	99	97	94	216	149	146	212
4	219	151	96	102	101	99	97	94	216	149	145	211
5	217	151	96	102	101	99	97	94	216	149	145	210
6	217	150	97	102	101	99	96	95	215	150	144	208
7	215	149	97	102	101	99	96	95	215	150	144	207
8	215	149	97	102	101	99	95	96	216	150	143	204
9	213	148	97	102	101	99	95	96	216	*150	142	204
10	213	148	97	102	101	99	94	97	216	150	142	203
11	212	148	97	102	101	99	94	97	215	150	142	203
12	212	148	97	102	101	99	94	98	215	150	141	202
13	212	148	97	102	101	99	94	98	215	150	141	200
14	211	147	97	102	100	99	94	99	213	150	140	200
15	211	147	97	102	100	98	94	99	213	150	140	199
16	210	147	98	102	100	98	93	99	212	150	140	198
17	210	146	99	102	100	98	93	99	*180	150	139	198
18	208	146	99	102	100	98	93	100	119	150	139	195
19	208	146	99	102	100	98	93	101	119	150	139	195
20	207	145	99	102	100	98	93	103	119	150	139	194
21	207	145	100	102	100	98	93	104	119	150	138	193
22	188	145	100	102	100	98	*93	106	120	150	153	191
23	158	123	100	102	100	98	93	107	120	150	189	189
24	158	94	100	102	100	98	93	108	121	150	225	189
25	157	94	101	102	100	98	93	110	121	150	224	190
26	157	94	101	102	100	97	93	153	122	149	224	189
27	155	94	102	102	100	97	93	212	122	149	222	187
28	154	95	102	102	100	97	93	213	122	149	221	186
29	154	95	102	102	100	97	93	215	123	149	220	185
30	153	95	102	102	-	97	93	216	123	149	219	184
31	152	-	102	102	-	97	-	216	-	148	217	-
Total	6,058	4,042	3,055	3,162	2,913	3,048	2,826	3,701	5,192	4,596	5,095	5,954
Mean	195	135	98.5	102	100	98.3	94.2	119	173	148	164	198
Ac-ft	12,020	8,020	6,060	6,270	5,780	6,050	5,610	7,340	10,300	9,120	10,110	11,810

Calendar year 1951: Max 221 Min 34 Mean 126 Ac-ft 91,340
Water year 1951-52: Max 225 Min 93 Mean 136 Ac-ft 98,490

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 12-22, Jan. 17 to Feb. 24, Feb. 26 to Mar. 31, May 4-15, 21-25, Aug. 10-12; discharge interpolated on basis of recorded range in stage.

Little Deschutes River near Lapine, Oreg.

Location.--Lat 43°41'30", long. 121°30'10", in SW¼ sec. 2, T. 22 S., R. 10 E., on right bank just downstream from bridge at former town of Rosland, 1¼ miles north of Lapine.

Drainage area.--859 sq mi.

Records available.--September 1910 to October 1913 (incomplete), June to November 1918, August to October 1920, May 1924 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 4,192.81 ft above mean sea level, datum of 1929. Sept. 22, 1910, to Aug. 31, 1911, staff gage at present site at different datum. Mar. 1 to Sept. 28, 1912, staff gage at site 1¼ miles downstream at different datum. June 1, 1913, to Oct. 28, 1920, staff gage at present site at different datum. May 15, 1924, to Sept. 28, 1928, staff gage and Sept. 29, 1928, to Oct. 14, 1931, water-stage recorder, at datum 1.0 ft higher.

Average discharge.--28 years (1924-52), 177 cfs.

Extremes.--Maximum discharge during year, 1,120 cfs Apr. 29 (gage height, 7.08 ft); minimum daily, 100 cfs Dec. 31, Jan. 1.
1910-13, 1918, 1920, 1924-52: Maximum discharge, 1,320 cfs June 13, 1950 (gage height, 7.25 ft); minimum, 8 cfs Sept. 2, 3, 1931 (gage height, 0.71 ft).

Remarks.--Records good except those for periods of ice effect, which are poor. Diversions for irrigation of about 13,700 acres above station. Flow regulated since August 1922 by Crescent Lake (see p. 66).

Revisions (water years).--W 1218: 1950(M).

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 29		Apr. 30 to Sept. 30	
2.1	97	3.1	192
4.0	313	4.0	304
6.0	635	6.0	635
6.5	755	6.5	755
7.1	1,140	7.1	1,140

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	256	*241	332	100	180	160	335	1,060	950	477	251	270
2	282	236	363	120	180	150	338	1,060	922	440	242	269
3	308	240	364	130	200	160	359	984	887	413	252	268
4	325	239	303	140	220	200	380	929	852	393	244	268
5	317	236	239	160	240	190	402	874	*817	390	246	270
6	301	235	216	180	260	200	426	836	805	384	239	275
7	284	233	200	170	*280	190	453	836	801	378	233	275
8	276	233	200	150	310	170	451	880	809	384	230	273
9	270	235	210	160	330	180	453	922	817	361	230	274
10	266	242	230	170	310	200	450	887	801	*352	233	281
11	262	265	*260	190	270	180	446	836	805	347	234	284
12	272	295	280	150	240	160	453	821	801	343	228	279
13	280	323	260	130	220	170	467	825	782	344	222	270
14	284	320	240	*160	200	180	483	830	770	340	221	264
15	289	303	250	180	200	192	496	858	745	333	216	260
16	308	280	260	150	230	189	504	874	712	324	212	257
17	318	262	260	120	200	*191	504	864	682	308	210	256
18	306	246	250	120	160	192	509	847	651	304	209	*253
19	289	252	230	130	150	186	519	836	605	300	208	250
20	298	263	210	170	150	181	566	847	538	295	*208	248
21	306	264	220	170	150	188	*641	869	469	291	209	246
22	332	254	240	170	150	184	655	908	455	280	204	244
23	349	248	250	160	150	182	672	901	464	270	202	242
24	364	236	190	180	150	210	708	869	469	270	220	241
25	366	202	150	190	160	265	764	847	477	260	250	241
26	331	203	170	180	190	304	836	825	474	258	278	240
27	289	221	200	190	200	327	950	825	470	255	287	238
28	271	259	200	200	180	350	984	847	476	253	288	236
29	260	269	170	220	170	373	*1,080	950	495	248	281	235
30	253	284	140	210	-	354	1,060	950	500	246	277	235
31	248	-	100	200	-	350	-	967	-	248	274	-
Total	9,160	7,619	7,187	5,050	6,030	6,708	17,344	27,464	20,301	10,089	7,338	7,742
Mean	295	254	232	163	208	216	578	886	677	325	237	258
Ac-ft	18,170	15,110	14,260	10,020	11,960	13,310	34,400	54,470	40,270	20,010	14,550	15,360

Calendar year 1951: Max 852 Min 83 Mean 344 Ac-ft 249,100
Water year 1951-52: Max 1,080 Min 100 Mean 361 Ac-ft 261,900

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 7 to Mar. 14.

Deschutes River at Benham Falls, near Bend, Oreg.

Location.--Lat 43°56'20", long. 121°24'40", in SE¼ sec. 9, T. 19 S., R. 11 E., on left bank 150 ft upstream from head of Benham Falls, 1½ miles downstream from dam site for proposed Benham Falls Reservoir, 10 miles southwest of Bend, and at mile 181.1.

Drainage area.--1,759 sq mi.

Records available.--July 1906 to September 1914, August 1920 to September 1921, February 1924 to September 1952. Published as "at West's Ranch near Lava" July 1906 to February 1909 and April to September 1914. Published as "at Benham Falls near Bend" January 1905 to June 1906 and October 1913 to September 1914, but record is sum of flow for stations at Bend and intervening canals; records not equivalent owing to losses between Benham Falls and Bend, which are now known to exist.

Gage.--Water-stage recorder. Altitude of gage is 4,140 ft (from river-profile map). July 21, 1906, to Feb. 20, 1909, and Apr. 2 to Sept. 30, 1914, staff gage at site 7 miles upstream at various datums. Feb. 21, 1909, to Feb. 10, 1924, staff gages at two different sites within 600 ft upstream from present site at various datums. Feb. 11, 1924, to Nov. 12, 1947, water-stage recorder at present site at datum 1.00 ft higher.

Average discharge.--35 years (1906-13, 1924-52), 1,342 cfs.

Extremes.--Maximum discharge during year, 3,090 cfs June 4, 5 (gage height, 5.07 ft); minimum, 753 cfs occurred during period of no gage-height record Dec. 3 to Jan. 24 (gage height, 1.18 ft).

1906-14, 1920-21, 1924-52: Maximum discharge, 5,000 cfs (estimated) Nov. 27, 1909 (gage height not determined); minimum, 448 cfs occurred during period of no gage-height record Jan. 11 to Feb. 3, 1950 (from recorded range in stage); minimum daily, 480 cfs Feb. 12, 1948.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversions above station for irrigation. Flow regulated since 1922 by Crane Prairie Reservoir and Crescent Lake, and since December 1942 by Wickiup Reservoir (see p. 66).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.2	760
2.0	1,090
3.0	1,620
4.0	2,270
5.1	3,110

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,000	1,740	1,010	820	840	1,060	1,820	2,560	2,890	3,030	2,880	2,380
2	2,000	1,720	1,020	800	852	1,060	1,940	2,470	2,910	3,030	2,930	2,360
3	2,000	1,700	1,020	800	872	1,050	1,930	2,390	2,980	3,030	2,910	2,360
4	2,000	1,700	1,060	820	876	1,040	1,960	2,350	*3,070	3,010	2,900	2,350
5	2,000	1,700	1,000	820	880	1,030	1,990	2,350	3,080	2,970	2,890	2,280
6	2,000	1,700	950	820	888	1,060	2,020	2,380	3,060	2,930	2,890	2,250
7	2,000	1,700	850	820	900	1,340	2,030	2,350	3,040	2,920	2,890	2,250
8	2,000	1,450	800	820	920	1,430	2,040	2,370	3,010	2,930	2,880	2,260
9	1,980	1,230	820	840	920	1,460	2,020	2,270	3,010	2,990	2,870	2,260
10	1,960	1,240	860	840	912	1,470	2,040	2,260	3,000	3,000	2,870	2,250
11	1,950	1,260	880	820	900	1,480	2,020	2,270	3,040	2,990	2,870	2,250
12	1,950	1,300	880	820	892	1,490	2,000	2,220	3,050	2,970	2,870	2,250
13	1,950	1,320	880	820	880	1,470	2,000	2,200	3,060	2,960	2,870	2,240
14	1,960	1,200	880	820	880	1,460	2,010	2,180	3,060	*2,950	2,870	2,240
15	1,960	1,080	860	820	864	1,460	2,010	2,170	3,050	2,940	2,870	2,240
16	1,980	1,060	870	800	876	1,460	2,020	2,170	3,030	2,930	2,860	2,220
17	1,900	1,040	860	780	880	1,470	2,020	2,200	3,010	*2,930	2,860	2,220
18	1,850	1,000	860	760	876	1,480	2,040	2,200	3,020	2,910	2,860	*2,220
19	1,790	1,000	860	760	864	1,470	1,850	2,240	3,020	2,890	2,860	2,210
20	1,790	988	860	760	856	1,460	1,760	2,380	3,010	2,890	2,860	2,190
21	1,800	960	860	920	868	1,440	1,820	2,390	3,030	2,890	*2,850	2,180
22	1,800	956	880	850	1,040	1,440	1,980	2,390	3,020	2,890	2,850	2,180
23	1,830	940	900	860	1,240	1,440	2,080	2,470	2,970	2,880	2,850	2,170
24	1,850	912	900	880	1,240	1,480	2,330	2,720	2,970	2,880	2,850	2,150
25	1,840	940	880	884	1,240	1,520	2,420	2,850	2,980	2,870	2,790	2,140
26	1,840	908	880	888	1,100	1,600	2,480	2,840	2,990	2,860	2,540	2,140
27	1,820	916	860	892	1,020	1,640	2,580	2,820	3,010	2,850	2,530	2,140
28	1,800	940	880	896	1,060	1,690	2,660	*2,810	3,040	2,850	2,540	2,140
29	1,780	952	880	884	1,030	1,700	2,650	2,800	3,050	2,840	2,490	2,120
30	1,760	984	860	820	-	1,710	2,580	2,830	3,050	2,850	2,400	2,090
31	1,740	-	840	816	-	1,720	-	2,890	-	2,850	2,380	-
Total	58,880	36,536	27,700	25,750	27,466	44,080	63,100	75,790	90,510	90,710	86,630	66,730
Mean	1,899	1,218	894	831	947	1,422	2,103	2,445	3,017	2,926	2,795	2,224
Ac-ft	116,800	72,470	54,940	51,070	54,480	87,430	125,200	150,300	179,500	179,900	171,800	132,400

Calendar year 1951: Max 2,760 Min 800 Mean 1,890 Ac-ft 1,368,000
Water year 1951-52: Max 3,080 Min 760 Mean 1,896 Ac-ft 1,376,000

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-18, Oct. 26 to Nov. 8, Nov. 16-18, Dec. 3 to Jan. 24, Aug. 12-20; discharge estimated on basis of weather records, recorded range in stage, and unpublished records for station below Benham Falls and at Ryan Ranch.

Reservoirs in Deschutes River basin above Bend, Oreg.

Crane Prairie Reservoir.--Lat 43°45'20", long. 121°46'50", on control structure at dam on Deschutes River in NW¼ sec. 16, T. 21 S., R. 8 E., 15 miles northwest of Lapine. Drainage area, 254 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, November 1922 to September 1952. Staff gage read once daily Oct. 1 to Nov. 12, May 4 to Sept. 30, occasional readings Nov. 27 to Apr. 25. Datum of gage is 4,400.0 ft above mean sea level (levels by Bureau of Reclamation). Maximum contents observed during year, 59,220 acre-ft May 21 (elevation, 4,445.76 ft); minimum observed, 22,260 acre-ft Dec. 18 (elevation, 4,437.34 ft). Maximum contents observed during period 1922-52, 60,500 acre-ft June 5-7, 1943 (elevation, 4,446.0 ft); 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-ft between elevation 4,424 ft (lip of fish-screen structure) and 4,445 ft (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.

Wickiup Reservoir.--Lat 43°41'10", long. 121°41'10", in gate chamber structure at dam on Deschutes River in NE¼ sec. 7, T. 22 S., R. 9 E., 9 miles west of Lapine. Drainage area, 482 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, December 1942, when storage began, to September 1952. Tape gage read daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Maximum contents observed during year, 187,300 acre-ft Mar. 5 (elevation, 4,336.50 ft); minimum observed, 1,980 acre-ft Sept. 30 (elevation, 4,275.25 ft). Maximum contents observed during period 1942-52, 188,800 acre-ft Apr. 17, 1951 (elevation, 4,336.64 ft); minimum observed since reservoir first filled in March 1949, that of Sept. 30, 1952.

Reservoir is formed by rock-faced earth-fill dam completed by Bureau of Reclamation in August 1949. Timber removal practically complete. Capacity, 182,100 acre-ft between elevations 4,265.0 ft (no storage) to 4,336.0 ft (crest of spillway, with earth soft plug to elevation 4,339.0 ft). Natural flow passing through reservoir when outlet gates are open prevents withdrawal of storage below elevation 4,265.0 ft. Sill of trash-rack structure elevation 4,259.75 ft. Water is diverted from Deschutes River at Bend and used for irrigation of lands near Madras. Daily elevations and capacity table furnished by Bureau of Reclamation.

Crescent Lake.--Lat 43°30'00", long. 121°58'20", in sec. 11, T. 24 S., R. 6 E., at center of fish screen 250 ft south of dam, and 14 miles west of Crescent. Drainage area, 60.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, August 1922 to September 1952. Staff gage read about once each week; also staff gage at head of spillway of dam used occasionally. Datum of gage is 4,826.0 ft above mean sea level (levels by Deschutes County Municipal Improvement District); gage readings have been reduced to elevations above mean sea level. Maximum contents observed during year, 54,470 acre-ft July 13 (elevation, 4,840.9 ft); minimum observed, 40,640 acre-ft Sept. 28 (elevation, 4,837.26 ft). Maximum contents observed during period 1922-52, 72,460 acre-ft July 15, 1923 (elevation, 4,845.55 ft); minimum observed, 9,640 acre-ft Oct. 21, 1931 (elevation, 4,828.75 ft).

Reservoir is formed by dam of earth and logs, completed and storage begun in 1922. Capacity, 86,050 acre-ft between elevations 4,826 ft (sill of outlet gate) and 4,849 ft (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.

Revisions (water years).--W 739: 1923 (maximum contents). W 1218: Drainage area.

Monthly elevations and contents, water year October 1951 to September 1952

Date	Crane Prairie Reservoir			Wickiup Reservoir			Crescent Lake		
	Elevation (feet)*	Contents (acre-ft)	Change in contents during month (acre-ft)	Elevation (feet)*	Contents (acre-ft)	Change in contents during month (acre-ft)	Elevation (feet)*	Contents (acre-ft)	Change in contents during month (acre-ft)
Sept.30.....	4,445.38	57,240	-	4,293.40	18,470	-	-	a51,620	-
Oct. 31.....	4,445.36	57,140	-100	4,296.14	22,360	+3,890	-	a46,300	-5,320
Nov. 30.....	-	a39,700	-17,440	4,320.26	77,030	+54,670	-	a44,820	-1,480
Dec. 31.....	-	a27,400	-12,300	4,331.13	136,800	+59,770	-	a47,620	+2,800
Calendar year 1951..	-	-	-5,200	-	-	-27,000	-	-	-5,620
Jan. 31.....	-	a39,400	+12,000	4,334.33	165,300	+28,500	-	a48,430	+810
Feb. 29.....	-	a43,500	+4,100	4,336.34	185,600	+20,300	-	a48,450	+20
Mar. 31.....	-	a47,900	+4,400	4,335.52	177,100	-8,500	4,839.02	47,310	-1,140
Apr. 30.....	-	a53,400	+5,500	4,333.46	157,100	-20,000	4,838.80	46,470	-840
May 31.....	4,445.46	57,650	+4,250	4,332.63	149,600	-7,500	-	a52,760	+6,290
June 30.....	4,445.28	56,740	-910	4,327.63	111,500	-38,100	-	a53,950	+1,190
July 31.....	4,445.16	56,130	-610	4,315.16	61,700	-49,800	4,840.54	53,080	-870
Aug. 31.....	-	a56,740	+610	4,291.73	16,260	-45,440	-	a47,240	-5,840
Sept.30.....	4,445.28	56,740	0	4,275.25	1,980	-14,280	-	a40,170	-7,070
Water year 1951-52....	-	-	-500	-	-	-16,490	-	-	-11,450

* Time of day variable.
a No gage-height record; contents interpolated.

Deschutes River below Lava Island, near Bend, Oreg.

Location.--Lat 44°00'00", long. 121°22'30", in SW¼ sec. 23, T. 18 S., R. 11 E., on right bank three-quarters of a mile downstream from Lava Island, 1½ miles downstream from intake of Arnold Canal, 5 miles southwest of Bend, and at mile 173.0.

Drainage area.--1,829 sq mi.

Records available.--March 1926 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 3,825 ft (by barometer). Prior to May 4, 1927, water-stage recorder at site a quarter of a mile upstream at different datum. May 4, 1927, to Nov. 11, 1947, water-stage recorder at present site at datum 1.00 ft higher.

Average discharge.--26 years, 1,130 cfs.

Extremes.--Maximum discharge during year, 2,780 cfs June 28, 29, 30 (gage height, 3.64 ft); minimum, 683 cfs occurred during period of no gage-height record, Dec. 25 to Feb. 9 (gage height, 1.32 ft).
1926-52: Maximum discharge, that of June 28, 29, 30, 1952; minimum, 416 cfs Jan. 18, 1950 (gage height, 0.79 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Arnold Canal diverts water above station for irrigation (see p.68). Flow regulated by Crescent Lake, and Crane Prairie and Wickiup Reservoirs (see p. 66).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.3	670
2.0	1,190
3.0	2,120
3.7	2,850

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,810	1,630	960	760	740	980	1,690	2,370	2,660	2,770	2,600	2,160
2	1,850	1,630	960	740	760	1,000	1,830	2,310	2,660	2,760	2,640	2,150
3	1,870	1,640	960	760	780	980	1,840	2,230	2,680	2,760	2,650	2,150
4	1,840	1,640	1,000	760	780	960	1,850	2,180	*2,750	2,750	2,640	2,170
5	1,830	*1,640	950	760	790	980	1,880	2,150	2,760	2,720	2,630	2,120
6	1,840	1,630	850	760	800	980	1,920	2,180	2,760	2,670	2,610	2,060
7	1,840	1,640	760	780	820	1,180	1,950	2,170	2,740	2,650	2,610	2,060
8	1,830	1,440	750	780	820	1,340	1,980	2,180	2,720	2,660	2,600	2,060
9	1,820	1,160	750	780	820	1,400	1,970	2,120	2,700	2,710	2,600	2,060
10	1,810	1,170	800	780	821	1,420	1,980	2,070	2,700	2,720	2,590	2,060
11	1,810	1,210	840	760	807	1,420	1,970	2,070	2,730	2,720	*2,590	2,050
12	1,800	1,240	840	760	800	1,420	1,920	2,030	2,740	*2,700	2,600	2,050
13	1,800	1,260	820	760	800	1,420	1,920	2,000	2,750	2,670	2,610	2,050
14	1,810	1,160	820	750	780	1,400	1,920	2,020	2,750	2,660	2,600	2,050
15	*1,820	1,050	820	750	780	1,400	1,900	2,020	2,740	2,660	2,590	2,040
16	1,810	1,000	820	750	780	1,400	1,910	1,970	2,730	2,660	2,590	*2,040
17	1,800	980	820	720	790	1,400	1,920	1,980	2,710	2,650	2,590	2,040
18	1,720	960	820	700	790	1,420	*1,890	1,980	2,710	2,640	2,590	2,040
19	1,670	940	820	690	780	*1,420	1,750	1,990	2,720	2,630	2,590	2,040
20	1,670	920	821	690	770	1,400	1,620	2,130	2,700	2,630	2,590	2,010
21	1,680	900	814	840	770	1,400	1,650	2,170	2,720	2,620	2,590	1,990
22	1,680	880	821	780	930	1,380	1,800	2,180	2,720	2,620	2,590	1,980
23	1,720	830	821	800	1,140	1,390	1,870	2,200	2,700	2,610	2,600	1,980
24	1,730	780	807	820	1,130	1,410	2,070	2,390	2,670	2,610	2,590	1,970
25	1,720	800	830	820	1,140	1,420	2,190	2,560	2,680	2,610	2,560	1,950
26	1,720	780	820	820	1,030	1,450	2,250	2,590	2,700	2,600	2,380	1,950
27	1,720	840	820	820	940	1,500	2,310	2,560	2,720	2,590	2,320	1,950
28	1,700	880	820	820	980	1,550	2,390	2,540	2,760	2,580	2,320	1,940
29	1,660	900	820	820	940	1,600	2,440	2,520	2,770	2,580	2,300	1,930
30	1,660	920	810	750	-	1,630	2,400	2,540	2,780	2,580	2,210	1,910
31	1,620	-	800	740	-	1,640	-	2,610	-	2,590	2,170	-
Total	54,660	34,450	25,964	23,820	24,808	41,690	58,980	69,010	81,630	82,380	78,740	61,010
Mean	1,763	1,148	838	768	855	1,345	1,966	2,226	2,721	2,657	2,540	2,034
Ac-ft	108,400	68,330	51,500	47,250	49,210	82,690	117,000	136,900	161,900	163,400	156,200	121,000

Calendar year 1951: Max 2,530 Min 750 Mean 1,747 Ac-ft 1,264,000
Water year 1951-52: Max 2,780 Min 690 Mean 1,741 Ac-ft 1,264,000

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 26 to Nov. 4, Nov. 15 to Dec. 19, Dec. 25 to Feb. 9, Feb. 12 to Mar. 18, Mar. 21, May 31 to June 3; discharge estimated on basis of weather records, recorded range in stage, and unpublished records for station at Ryan Ranch, adjusted for flow in Arnold Canal.

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 NE¼ 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 is diverted by this canal.

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

North and Swalley Canals diverts 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 1952; records for each canal published separately prior to 1926.

Diversions, in acre-feet, water year October 1951 to September 1952

Month	Arnold Canal	Central Oregon Canal	Deschutes County Municipal Improvement District Canal	North Unit Main Canal	North Canal	Swalley Canal	Total
October	4,510	20,100	3,590	12,730	18,030	4,730	63,690
November	597	1,680	0	0	5,160	547	7,980
December	147	1,510	0	0	2,450	248	4,360
January	14	1,410	0	0	2,040	345	3,810
February	1,310	694	0	0	1,880	736	4,620
March	678	1,900	0	0	270	387	3,240
April	1,570	18,710	54	30,310	19,590	3,600	73,830
May	5,170	30,380	3,510	45,710	30,150	7,020	121,900
June	6,520	30,500	2,900	41,400	28,500	6,890	116,700
July	6,920	32,610	5,470	59,240	30,480	8,330	143,000
August	6,920	34,260	9,530	41,600	33,250	7,890	133,400
September	5,200	27,650	8,280	25,090	26,470	5,980	98,670
Water year 1951-52	39,560	201,400	33,330	256,100	198,300	46,700	775,400

Deschutes River below Bend, Oreg.

Location.--Lat 44°05'00", long. 121°18'20", in SE¼ sec. 20, T. 17 S., R. 12 E., on right bank half a mile downstream from North Canal dam, half a mile north of Bend city limits, and at mile 164.4.

Drainage area.--1,899 sq mi.

Records available.--October 1914 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 3,503.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1931, at site 200 ft downstream at datum 1.00 ft higher.

Average discharge.--38 years, 600 cfs.

Extremes.--Maximum discharge during year, 1,800 cfs Apr. 2 (gage height, 3.90 ft); minimum, 23 cfs Apr. 21 (gage height, 1.16 ft).

1914-52: Maximum discharge, 2,500 cfs Dec. 7, 1921 (gage height, 3.9 ft, present datum); maximum gage height recorded, 4.46 ft, Jan. 26, 1930, present datum (backwater from ice); minimum discharge, 1 cfs Aug. 25, 1930.

Maximum discharge known near this site since 1905, 4,820 cfs Nov. 27, 1909.

Remarks.--Records fair. Six large canals divert water above station for irrigation (see p. 68). Flow regulated by hydroelectric plant at Bend, since 1922 by Crescent Lake and Crane Prairie Reservoir, and since December 1942 by Wickiup Reservoir (see p. 66).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	290	1,270	704	805	400	662	1,660	305	478	1,330	192	352
2	400	1,470	648	812	454	732	1,690	260	490	1,250	295	358
3	536	1,490	753	872	669	739	1,600	206	516	1,180	310	358
4	581	1,480	835	805	704	725	1,520	165	555	1,120	*346	370
5	620	*1,470	850	812	746	775	1,220	137	562	1,030	382	364
6	704	1,460	888	798	753	958	1,050	165	562	880	370	376
7	782	1,470	828	798	768	1,160	1,030	201	600	683	370	412
8	739	1,310	790	798	782	1,360	942	250	588	466	388	472
9	697	1,020	798	820	798	1,380	958	235	*574	346	436	574
10	683	1,030	812	828	805	1,380	872	178	581	280	448	581
11	648	1,050	842	812	790	1,390	805	178	669	260	484	614
12	614	1,100	842	805	775	1,390	739	162	782	240	510	655
13	588	1,100	858	798	775	1,370	725	140	865	230	536	690
14	600	1,050	835	798	782	1,370	725	183	942	225	522	662
15	704	1,050	828	798	782	1,370	676	201	958	373	510	676
16	1,050	1,030	835	790	790	*1,380	594	174	966	421	536	697
17	1,050	1,010	828	*768	782	1,380	798	192	918	188	542	690
18	982	990	842	768	790	1,390	718	158	895	170	588	*641
19	950	974	812	739	782	1,380	536	102	888	158	614	*614
20	966	950	805	711	768	1,370	64	158	888	154	600	555
21	990	902	669	858	768	1,340	39	215	895	151	607	466
22	1,040	872	503	820	842	1,320	72	201	902	137	634	460
23	1,130	828	594	790	1,170	1,320	44	215	910	105	662	430
24	1,160	790	872	746	1,140	1,350	105	334	902	92	683	406
25	1,160	828	872	704	1,140	1,400	140	503	895	92	711	412
26	1,160	798	872	634	942	1,410	148	510	895	110	568	388
27	1,170	812	880	620	746	1,470	188	436	895	97	472	364
28	1,170	760	865	600	732	1,510	260	418	934	74	490	305
29	1,130	725	865	568	690	1,550	358	448	1,130	44	484	275
30	1,100	760	850	510	-	1,600	310	418	1,330	55	424	240
31	1,120	-	835	448	-	1,620	-	466	-	105	364	-
Total	26,514	31,849	24,910	23,233	22,865	39,551	20,586	7,914	23,965	12,046	15,078	14,457
Mean	855	1,062	804	749	788	1,276	686	255	799	389	486	482
Ac-ft	52,590	63,170	49,410	46,080	45,350	78,450	40,830	15,700	47,530	23,890	29,910	28,680

Calendar year 1951: Max 1,680 Min 58 Mean 752 Ac-ft 544,200
Water year 1951-52: Max 1,690 Min 39 Mean 718 Ac-ft 521,600

* Discharge measurement made on this day.

Tumalo Creek near Bend, Oreg.

Location.--Lat 44°05'20", long. 121°22'20", in SE¼ sec. 23, T. 17 S., R. 11 E., on left bank 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.--47.3 sq mi.

Records available.--October 1906 to December 1908 and October 1910 to April 1913 (winters only), November 1913 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 3,566.96 ft above mean sea level, datum of 1929. Prior to November 1910, staff gage at site half a mile upstream at different datum. November 1910, to Apr. 26, 1915, staff gage, and Apr. 27, 1915, to Sept. 30, 1918, staff-gage or water-stage recorder at present site and datum.

Average discharge.--34 years (1913-14, 1916-21, 1923-35, 1936-52), 101 cfs.

Extremes.--Maximum discharge during year, 495 cfs June 6; minimum daily, 60 cfs Dec. 31. 1906-8, 1911-52: Maximum discharge, 1,420 cfs about Jan. 6, 1923 (no flow in canal), from rating curve extended above 200 cfs; minimum daily, 25 cfs Jan. 3, 1924.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. All records presented herein include flow in Columbia Southern Canal, which diverts 8 miles above station for irrigation of lands near Tumalo. No flow in Columbia Southern Canal Nov. 2 to Apr. 26. Crater Creek Canal diverts flow of tributaries of Soda Creek into head of Tumalo Creek.

Revisions (water years).--W 864: 1937. W 1218: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	95	110	62	74	63	68	178	304	202	*111	84
2	98	94	100	65	76	64	68	167	309	200	106	83
3	86	96	96	70	77	62	68	156	326	227	105	86
4	84	100	92	74	74	63	68	152	391	264	107	94
5	83	92	85	78	72	63	74	141	422	277	101	99
6	101	*91	80	80	71	64	78	138	430	242	103	94
7	107	89	78	80	71	64	85	146	372	230	97	90
8	100	89	75	*84	*71	66	90	159	372	240	97	95
9	*93	89	76	78	71	*67	97	159	373	260	104	98
10	92	92	78	78	71	67	*99	174	346	275	102	92
11	93	90	80	77	71	66	106	197	272	*293	99	88
12	97	90	83	76	71	67	109	208	220	278	98	85
13	105	90	83	74	71	67	120	227	192	257	97	80
14	154	90	83	71	71	67	120	*225	176	254	95	78
15	130	88	83	71	71	66	118	208	165	246	92	*75
16	110	87	83	71	71	67	124	226	181	227	92	80
17	100	85	83	71	70	66	130	251	218	196	90	78
18	110	85	86	70	70	66	152	267	239	181	87	78
19	140	83	84	70	70	64	170	304	239	171	84	78
20	120	84	83	68	70	66	160	326	254	171	83	80
21	110	84	83	67	70	64	160	283	224	179	83	81
22	120	83	86	68	71	64	165	279	208	157	84	80
23	170	82	83	67	68	62	175	302	231	161	92	78
24	140	83	80	67	66	64	190	311	258	156	91	76
25	120	83	70	64	63	70	205	328	223	142	87	73
26	110	84	72	63	63	71	208	341	200	146	84	72
27	105	84	75	63	63	68	225	346	219	146	83	74
28	100	86	80	64	63	71	236	388	231	134	81	77
29	98	89	70	68	63	68	206	*377	240	125	81	76
30	96	97	65	72	-	68	194	339	205	118	83	76
31	94	-	60	76	-	67	-	331	-	117	84	-
Total	3,381	2,654	2,525	2,207	2,024	2,042	4,068	7,634	8,040	6,272	2,883	2,478
Mean	109	88.5	81.5	71.2	69.8	65.9	136	246	268	202	93.0	82.6
Ac-ft	6,710	5,260	5,010	4,380	4,010	4,050	8,070	15,140	15,950	12,440	5,720	4,920

Calendar year 1951: Max 365 Min 60 Mean 129 Ac-ft 93,650
Water year 1951-52: Max 430 Min 60 Mean 126 Ac-ft 91,660

* Discharge measurement made on this day.

Note.--No gage-height record on river station Oct. 15 to Nov. 4, Nov. 11-18, Dec. 1, 5-9, Dec. 25 to Jan. 7, Jan. 29, 30, Feb. 2, Apr. 7, 8, July 7-10, Sept. 7-14, 29, 30; discharge estimated on basis of records for Squaw Creek near Sisters. Stage-discharge relation affected by ice Dec. 10, 11, 14, 20, 24, Jan. 8, 11, 12, 15-18, Feb. 13, 18-23.

Squaw Creek near Sisters, Oreg.

Location.--Lat 44°13'50", long. 121°34'20", in NW¼ sec. 32, T. 15 S., R. 10 E., on right bank 600 ft upstream from intake of McCallister ditch and 4 miles south of Sisters.

Drainage area.--54.8 sq mi.

Records available.--July 1906 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 3,490 ft (by barometer). July 1, 1906, to May 29, 1913, staff gage at site 800 ft downstream at different datum, below intake but including flow of McCallister ditch. May 30, 1913, to Sept. 2, 1915, staff gage and Mar. 24, 1916, to Oct. 5, 1928, water-stage recorder at site 100 ft downstream at different datum.

Average discharge.--40 years (1906-18, 1919-20, 1925-52), 104 cfs.

Extremes.--Maximum discharge during year, 445 cfs June 6 (gage height, 2.65 ft); maximum gage height, 3.36 ft, occurred sometime during period Jan. 7-13 (backwater from ice), from recorded range in stage; minimum discharge, 29 cfs Mar. 21, 22.
1906-52: Maximum gage height, about 8.75 ft (over top of gage), Nov. 22, 1909, site and datum then in use (discharge not determined); maximum discharge recorded since that time, 1,130 cfs Dec. 2, 1941 (gage height, 3.33 ft); minimum, 19 cfs Dec. 6, 1922.

Remarks.--Records good except those for periods of ice effect or no 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.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30			
1.3	50	1.2	33	2.0	225
1.6	96	1.5	89	2.7	465
2.0	176	1.7	138		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	86	122	b50	b58	48	60	a130	246	204	166	94
2	169	90	99	b52	49	46	60	a120	240	210	163	96
3	174	91	90	b55	58	48	60	a110	279	234	158	100
4	105	*94	85	b58	64	46	65	a105	362	279	155	105
5	91	88	77	b60	55	48	73	*100	397	282	*160	100
6	88	86	b70	b65	53	48	83	100	397	243	158	96
7	86	85	b65	b62	53	48	94	100	341	231	146	91
8	83	83	b65	a60	49	46	87	105	341	243	141	98
9	80	83	b68	a64	53	48	85	110	348	267	130	100
10	80	93	b70	a66	53	*48	*87	120	338	296	130	91
11	82	86	b75	a70	53	45	89	130	282	*310	130	85
12	85	86	b70	a68	53	45	91	141	*231	282	122	83
13	85	85	b68	*b65	*58	45	91	160	207	261	120	81
14	122	88	b65	b65	58	43	a90	155	189	255	117	77
15	107	85	b65	b70	51	43	a90	144	186	264	115	77
16	91	85	67	b65	51	40	a95	149	207	237	112	*79
17	85	b80	66	b60	51	40	a100	158	246	207	107	79
18	*103	b75	66	b58	b50	40	a110	172	249	201	103	79
19	126	80	b65	b55	b50	40	a115	240	258	192	98	79
20	110	78	b60	b58	b50	38	a110	249	261	195	96	79
21	96	77	b62	b60	b50	* 38	a110	186	234	192	96	77
22	98	75	b64	b62	b50	38	a115	183	219	186	98	77
23	150	74	67	b62	b50	41	a120	210	246	186	100	77
24	116	80	b60	b60	b50	71	a125	249	252	178	100	77
25	105	78	b55	b58	b50	77	a135	267	240	172	96	77
26	98	80	b56	b55	48	67	a140	267	228	180	91	77
27	96	77	b60	b55	48	64	a150	279	228	180	91	75
28	94	78	b65	b55	48	67	a160	313	252	175	91	71
29	94	82	b60	b55	48	64	a150	279	255	175	91	69
30	91	99	b56	b55	-	64	a140	249	213	175	94	69
31	90	-	b54	b55	-	62	-	255	-	172	91	-
Total	3,238	2,507	2,137	1,858	1,512	1,546	3,080	5,535	7,972	6,864	3,666	2,515
Mean	104	83.6	68.9	59.9	52.1	49.9	103	179	266	221	118	83.8
Ac-ft	6,420	4,970	4,240	3,690	3,000	3,070	6,110	10,980	15,810	13,610	7,270	4,990

Calendar year 1951: Max 358 Min 54 Mean 134 Ac-ft 97,170
Water year 1951-52: Max 397 Min 38 Mean 116 Ac-ft 84,160

Peak discharge (base, 300 cfs).--May 19 (9 p.m.) 330 cfs (2.33 ft); May 28 (11 p.m.) 366 cfs (2.43 ft); June 6 (1 to 2 a.m.) 445 cfs (2.65 ft); June 19 (8:30 p.m.) 324 cfs (2.31 ft); July 4 (9 to 10 p.m.) 344 cfs (2.37 ft); July 10 (10 p.m.) 372 cfs (2.45 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Tumalo Creek near Bend.
b Stage-discharge relation affected by ice.

Deschutes River near Culver, Oreg.

Location.--Lat 44°32'30", long. 121°17'10", in SW¼ sec. 10, T. 12 S., R. 12 E., on right bank 0.7 mile downstream from bridge on Cove-Grandview road, 2½ miles above Crooked River, 4 miles northwest of Culver, and at mile 116.5.

Drainage area.--2,723 sq mi.

Records available.--July to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,755 ft above mean sea level (river-profile survey).

Extremes.--Maximum discharge during period, 1,260 cfs July 16 (gage height, 2.90 ft); minimum, 482 cfs July 31 (gage height, 1.23 ft).

Remarks.--Records excellent. Slight regulation by Crescent Lake and Crane Prairie and Wickiup Reservoirs. Many diversions for irrigation above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, July 14 to Sept. 30, 1952 (gage height, in feet, and discharge, in cubic feet per second)

1.2	475
2.0	745
3.0	1,320

Discharge, in cubic feet per second, July to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										-	511	710
2										-	585	705
3										-	663	700
4										-	687	725
5										-	*730	750
6										-	740	740
7										-	730	762
8										-	730	794
9										-	778	914
10										-	812	968
11										-	818	998
12										-	854	1,040
13										-	884	1,080
14										784	908	1,100
15										695	884	1,070
16										902	896	1,100
17										705	902	1,110
18										*613	926	1,090
19										585	974	1,050
20										573	998	1,010
21										564	998	896
22										576	1,010	842
23										561	1,040	836
24										535	1,070	*794
25										527	1,100	762
26										516	*1,080	772
27										535	896	740
28										530	848	710
29										519	872	663
30										498	842	644
31										490	756	
Total										-	26,522	26,075
Mean										-	856	869
Ac-ft										-	52,610	51,720

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.

South Fork Beaver Creek near Paulina, Oreg.

Location.--Lat 44°07'50", long. 119°44'50", in N½ sec. 5, T. 17 S., R. 25 E., on right bank at Palmer Ranch, 11 miles east of Paulina.

Drainage area.--90 sq mi, approximately.

Records available.--October 1945 to September 1952 in reports of Geological Survey. June 1944 to September 1945 in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Altitude of gage is 3,920 ft (by barometer). Prior to Sept. 16, 1948, staff gage at same site and datum.

Average discharge.--8 years, 21.9 cfs.

Extremes.--Maximum discharge during year, 614 cfs Mar. 25 (gage height, 7.70 ft), from rating curve extended above 200 cfs on basis of slope-area determination of peak flow; no flow for many days.

1944-52: Maximum discharge, about 900 cfs Dec. 28 or 29, 1945, computed on basis of records for Beaver Creek near Paulina; maximum gage height, that of Mar. 25, 1952; no flow at times.

Remarks.--Records fair except those for periods of ice effect, which are poor. Most of summer flow diverted above station for irrigation and stock water. No regulation.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 28, 29)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
2.2	0	2.9	7.3	2.35	0	3.0	15
2.3	.2	3.2	18	2.4	.2	3.5	42
2.4	.6	3.5	34	2.5	.9	4.0	86
2.5	1.3	3.9	70	2.6	2.5	5.0	224
2.6	2.2	4.5	148	2.8	8.0	6.0	380
2.7	3.5	5.5	304				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	3.8	33	b6	112	b20	88	120	34	13	1.9	
2	0	b4	18	b5	57	b19	117	112	31	11	1.7	
3	0	4.4	14	b6	45	b19	152	102	28	9.8	1.2	
4	0	4.5	12	b6.5	65	b19	227	103	32	8.0	1.2	
5	0	4.5	b9	b7	43	b18	320	*96	28	5.0	1.2	
6	0	4.5	b7.5	7.6	31	b18	309	94	28	1.9	1.4	
7	0	4.5	b7	7.3	28	b17	277	94	28	1.5	1.5	
8	0	4.4	b7.5	b7	27	b18	206	120	24	1.2	1.5	
9	0	4.5	b8	*b6	29	36	195	119	22	1.2	1.7	
10	0	4.5	9.2	6.0	28	38	*186	95	*24	1.0	2.5	
11	0	5.4	8.6	b6	29	29	178	87	24	.7	2.7	
12	0	6.0	b7.5	b6	b22	b25	178	85	23	.5	2.7	
13	0	6.0	b6.5	b6	b22	b23	184	83	20	.5	*2.3	
14	0	6.0	b5	b6	b23	b22	262	79	19	1.5	3.4	
15	0	5.8	6.5	b5	25	b21	203	81	25	2.7	2.3	
16	.2	b3.5	6.5	b5.5	24	39	170	75	21	2.3	1.2	
17	.5	b4	b5.5	b5	b24	32	162	69	18	4.2	1.1	
18	*.6	4.7	b6	b6	b23	26	165	67	22	7.4	.9	
19	.7	5.4	5.8	b6.5	*b22	24	172	62	22	7.7	.9	
20	1.1	5.8	6.7	b6	b20	23	155	54	19	7.7	.8	
21	1.4	6.0	6.7	5.8	b19	22	141	60	28	7.0	.7	
22	2.0	b5	7.3	5.8	b18	24	135	62	20	6.8	.6	
23	4.2	b4	b7	5.6	b18	30	130	46	17	6.1	.6	
24	5.4	4.4	b5.5	6.0	21	285	128	43	17	5.5	.3	
25	4.7	5.2	b5	6.0	b20	*253	133	67	16	5.5	.1	
26	4.4	5.8	b5	6.5	b20	205	138	55	16	3.4	0	
27	4.4	6.2	b5	6.5	b20	171	137	44	16	.4	.6	
28	4.2	*8.9	b5.5	6.2	b20	*179	138	40	18	.4	1.2	
29	4.4	12	b6	b7	b20	133	128	37	16	1.2	1.4	
30	4.4	53	b6	7.8	-	98	119	35	15	1.9	.7	
31	4.2	-	b6	b30	-	90	-	34	-	2.3	.2	
Total	46.8	206.7	254.8	215.6	875	1,976	5,233	2,320	671	129.3	40.5	0
Mean	1.51	6.89	8.22	6.95	30.2	63.7	174	74.8	22.4	4.17	1.31	0
Ac-ft	93	410	505	428	1,740	3,920	10,380	4,600	1,330	256	80	0

Calendar year 1951: Max 240 Min 0 Mean 28.8 Ac-ft 20,840
Water year 1951-52: Max 320 Min 0 Mean 32.7 Ac-ft 23,740

Peak discharge (base, 150 cfs).--Feb. 1 (6 p.m.) 235 cfs (5.07 ft); Mar. 25 (6 p.m.) 614 cfs (7.70 ft); Apr. 5 (6 p.m.) 443 cfs (6.42 ft); Apr. 14 (5 p.m.) 372 cfs (5.95 ft).

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

North Fork Beaver Creek near Paulina, Oreg.

Location.--Lat 44°10'30", long. 119°42'50", in NW¼ sec. 22, T. 16 S., R. 25 E., on left bank 12 miles east of Paulina.

Drainage area.--61.8 sq mi.

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

Gage.--Water-stage recorder. Datum of gage is 3,848.83 ft above mean sea level (survey by Bureau of Reclamation).

Average discharge.--10 years, 27.2 cfs.

Extremes.--Maximum discharge during year, 955 cfs Mar. 25 (gage height, 5.85 ft), from rating curve extended above 330 cfs; minimum, 0.1 cfs July 21-28 (gage height, 0.27 ft).

1942-52: Maximum discharge, that of Mar. 25, 1952; no flow July 30 to Aug. 7, Aug. 19, 20, 1951.

Remarks.--Records good except those for periods of ice effect and those below 2 cfs, which are fair. Several small dams above station store water for irrigation and stock watering. Most of summer flow diverted above station for irrigation.

Revisions.--W 1218: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.4	68	b5	159	b16	165	74	2.4	2.7	0.2	0.2
2	.5	.5	26	b5	243	b15	268	58	1.8	1.8	.2	.2
3	.5	.5	18	b5.5	131	b14	304	43	1.6	1.4	.2	.3
4	.4	.5	16	b5.5	127	b14	382	44	1.3	1.0	.2	.3
5	.4	.5	b15	b5.5	113	14	480	35	1.1	.8	.2	.3
6	.4	.5	b12	b5.5	82	15	469	*35	1.4	.6	.2	.3
7	.4	.5	8.8	b5.5	66	15	388	36	1.7	.5	.2	.3
8	.4	.4	6.3	b5.5	52	16	260	54	1.2	.4	.2	.3
9	.3	.4	5.2	*b5	44	39	210	49	1.1	.4	.3	.3
10	.3	.5	5.4	b5	38	94	*207	40	*2.2	.3	.3	.3
11	.4	.7	5.7	b5	34	72	211	38	3.0	.3	.3	.3
12	.4	1.0	6.3	b5	27	43	184	36	2.8	.3	.2	.3
13	.4	.6	5.7	b5.5	b22	37	205	34	1.8	.3	*.2	.3
14	.4	.6	5.0	b5.5	b23	31	278	32	1.7	.2	.3	.3
15	.4	.5	4.8	b5.5	24	29	208	27	1.6	.2	.2	.3
16	.5	.4	5.0	b5.5	29	47	178	22	1.3	.2	.2	.3
17	.5	.4	5.2	b5	24	51	180	19	1.1	.2	.2	.3
18	*.5	.4	b5	b5	b22	39	216	16	1.1	.2	.2	.3
19	.5	.5	b5	b5.5	*21	34	*266	16	1.4	.2	.2	.3
20	.5	.6	5.0	b5.5	19	31	170	20	1.5	.2	.2	.3
21	.5	.8	5.2	b6	b18	26	139	15	2.5	.1	.2	.3
22	.6	.7	6.0	b6	b15	24	128	11	1.8	.1	.2	.3
23	.6	.6	5.2	b7	16	34	135	8.8	1.6	.1	.2	.3
24	.6	.6	5.2	b9	16	350	*145	8.5	1.7	.1	.2	.3
25	.5	.6	4.6	b8	b16	592	158	11	1.7	.1	.2	.3
26	.5	1.1	b4.4	b8	b15	496	159	7.5	1.7	.1	.2	*.3
27	.5	1.5	b4.2	b9	b16	408	146	5.0	2.2	.1	.2	.3
28	.5	*23	b4.4	b9	b16	*410	130	4.1	3.6	.1	.2	.4
29	.5	34	b4.6	b9	b16	295	94	3.0	3.4	.2	.2	.4
30	.5	117	b5	b22	-	197	78	2.7	3.2	.2	.2	.4
31	.5	-	b5	68	-	169	-	2.4	-	.2	.2	-
Total	14.5	190.3	287.2	267.0	1,444	3,667	6,541	813.0	56.4	13.6	6.6	9.1
Mean	0.47	6.34	9.26	8.61	49.8	118	218	26.2	1.88	0.44	0.21	0.30
Ac-ft	29	377	570	530	2,860	7,270	12,970	1,610	112	27	13	18

Calendar year 1951: Max 424 Min 0 Mean 32.2 Ac-ft 23,300
Water year 1951-52: Max 592 Min 0.1 Mean 36.4 Ac-ft 26,390

Peak discharge (base, 400 cfs).--Mar. 25 (7 p.m.) 955 cfs (5.85 ft); Apr. 5 (10 p.m.) 708 cfs (4.93 ft).

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

Beaver Creek near Paulina, Oreg.

Location.--Lat 44°09'50", long. 119°55'20" (revised), in NE¼ sec. 26, T. 16 S., R. 23 E., on right bank three-quarters of a mile downstream from Paulina Creek, 1¾ miles downstream from Wolf Creek, and 3 miles northeast of Paulina.

Drainage area.--425 sq mi.

Records available.--October 1945 to September 1952 in reports of Geological Survey. October 1941 to September 1945 in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Altitude of gage is 3,690 ft (by barometer).

Average discharge.--11 years, 103 cfs.

Extremes.--Maximum discharge during year, 3,450 cfs Mar. 26 (gage height, 10.38 ft), from rating curve extended above 1,700 cfs on basis of discharge of Crooked River near Post; minimum, 0.4 cfs for many days in July and August.
1941-52: Maximum discharge, 4,310 cfs Dec. 28, 1945 (gage height, 10.2 ft), from rating curve extended above 900 cfs on basis of discharge of Crooked River near Post; no flow Oct. 13-29, 1945.

Remarks.--Records good except those for periods of ice effect or shifting control, which are fair. No regulation. Diversions for irrigation above station, and one on left bank diverting past station for irrigation of about 700 acres.

Rating tables, water year 1951-52, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
0.1	0.5	1.2	78	0.13	0.4	1.5	143
.2	1.7	1.5	128	.2	1.0	2.0	257
.3	4.1	2.0	275	.3	3.3	3.0	610
.4	7.6	3.0	665	.4	6.9	4.0	1,010
.6	18	5.0	1,600	.6	18	6.0	1,900
.9	42			1.0	51	8.0	2,850

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	5.5	237	b27	854	71	532	312	13	23	0.4	0.6
2	1.2	5.5	112	b28	1,340	65	770	294	11	17	.4	.6
3	2.4	5.5	72	29	564	64	1,120	254	9.2	13	.4	.6
4	3.3	5.8	60	30	508	71	1,220	228	6.9	7.8	.4	.6
5	3.3	5.5	56	32	432	67	1,950	*213	6.1	6.9	.5	.6
6	3.3	5.5	43	32	289	64	2,110	195	6.9	6.1	.5	.6
7	3.3	5.8	32	32	216	67	1,840	198	6.5	4.9	.5	.6
8	3.5	6.6	24	31	177	77	1,220	225	5.7	3.9	.5	.6
9	3.5	6.6	22	*28	153	149	910	244	6.1	3.6	.6	.6
10	3.5	6.9	24	31	143	352	*834	213	*9.2	3.3	.6	.6
11	3.8	7.6	27	31	133	320	826	184	14	3.3	.5	.6
12	3.8	9.0	29	31	108	198	770	170	15	3.0	*.5	.6
13	3.5	9.5	27	32	89	157	758	157	14	2.8	.5	2.2
14	3.5	10	25	33	89	128	918	*150	12	2.8	.5	4.2
15	3.0	9.0	24	31	102	128	914	153	11	2.8	.5	4.2
16	3.0	8.1	25	31	112	210	694	137	11	2.8	.5	4.2
17	3.3	6.9	22	24	94	317	642	112	11	1.8	.6	3.9
18	*6.2	7.2	28	25	75	219	690	102	7.8	.6	.6	3.9
19	5.8	8.1	27	27	*82	172	*790	95	18	1.6	.6	3.9
20	5.8	9.5	24	28	81	146	674	91	24	1.0	.6	3.9
21	5.8	10	25	27	70	133	535	79	25	.4	.6	3.9
22	5.8	10	28	28	60	122	482	65	29	.4	.6	3.6
23	5.8	10	28	29	72	148	470	52	23	.4	.6	3.3
24	6.2	9.0	24	32	75	1,520	*454	46	19	.4	.6	2.8
25	5.5	8.5	22	36	67	2,660	468	45	19	.4	.6	2.2
26	5.5	10	b20	38	71	2,650	479	48	20	.4	.6	*1.6
27	5.5	12	b20	40	67	*1,850	465	39	21	.4	.6	3.9
28	5.5	*15	b20	42	67	1,760	434	34	24	.4	.6	3.9
29	5.5	34	b22	44	70	*1,240	384	29	25	.4	.6	3.9
30	5.2	159	b24	50	-	750	332	22	26	.4	.6	3.9
31	5.2	-	b26	182	-	594	-	13	-	.4	.6	-
Total	133.0	421.6	1,199	1,141	6,260	16,469	24,685	4,199	449.4	116.4	16.8	70.6
Mean	4.29	14.1	38.7	36.8	216	531	823	135	15.0	3.75	0.54	2.35
Ac-ft	264	836	2,380	2,260	12,420	32,670	48,960	8,330	891	231	33	140

Calendar year 1951: Max 1,600 Min 0.4 Mean 117 Ac-ft 84,600
Water year 1951-52: Max 2,660 Min 0.4 Mean 151 Ac-ft 109,400

Peak discharge (base, 600 cfs).--Feb. 2 (2 a.m.) 1,620 cfs (5.03 ft); Mar. 26 (2:30 a.m.) 3,450 cfs (10.38 ft): Apr. 6 (8:30 a.m.) 2,440 cfs (7.37 ft); Apr. 15 (6 a.m.) 1,040 cfs (4.07 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Shifting-control method used Oct. 1 to Nov. 19, Mar. 24 to Apr. 7.

North Fork Crooked River above Deep Creek, Oreg.

Location.--Lat 44°20', long. 120°05', in SW¼ sec. 21, T. 14 S., R. 22 E., on left bank three-quarters of a mile upstream from Deep Creek, 14 miles northwest of Paulina, and 38 miles east of Prineville.

Drainage area.--159 sq mi.

Records available.--October 1945 to September 1952 in reports of Geological Survey. November 1941 to September 1945 (incomplete) in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Datum of gage is 4,356.00 ft above mean sea level (surveys of Bureau of Reclamation). Prior to Oct. 1, 1946, at datum 0.33 ft higher.

Average discharge.--9 years (1943-52), 93.8 cfs.

Extremes.--Maximum discharge during year, 1,690 cfs Apr. 7 (gage height, 4.09 ft); maximum gage height, 4.38 ft Mar. 28 (ice jam); minimum discharge, 0.7 cfs Aug. 25, 26.
1941-52: Maximum discharge, 2,060 cfs Apr. 7, 1943 (gage height, 4.17 ft), from rating curve extended above 910 cfs; maximum gage height, 8.01 ft (present datum) Jan. 1, 1943 (ice jam); minimum discharge, 0.5 cfs Aug. 14, 15, 1942, Aug. 3 to Sept. 24, 1951.

Remarks.--Records good except those below 10 cfs, which are fair, and those for periods of ice effect or no gage-height record, which are poor. No diversion or regulation above station.

Revisions.--W 1094: Drainage area.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.3	0.6	1.1	34
.4	1.5	1.3	57
.5	3.0	1.5	96
.6	5.3	2.0	285
.7	8.2	3.0	820
.9	18	4.0	1,600

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	4.8	270	15	25	27	716	446	60	56	1.5	0.8
2	3.7	4.8	119	15	28	28	721	380	50	43	1.4	.8
3	4.6	5.3	59	16	28	30	844	345	45	27	1.3	.9
4	5.6	6.5	30	17	28	32	1,020	310	41	20	1.3	.9
5	4.6	6.5	19	17	27	31	1,400	270	37	16	1.2	.9
6	3.5	5.9	16	16	27	31	1,560	255	72	12	1.2	.8
7	2.4	5.9	15	16	27	31	1,600	270	69	9.9	1.2	.8
8	2.4	5.9	13	*15	27	31	1,230	385	43	8.6	1.2	1.0
9	2.4	6.2	14	16	27	32	1,120	340	38	7.6	1.2	1.1
10	2.4	7.5	16	17	29	35	1,110	295	52	6.8	1.2	1.0
11	2.6	8.6	15	16	29	36	1,160	305	*55	5.9	1.2	1.0
12	2.7	8.6	14	16	29	38	1,140	305	71	4.6	1.5	1.1
13	2.8	6.2	13	17	26	38	1,110	315	46	4.2	1.3	1.3
14	3.5	6.2	12	17	25	38	1,010	315	34	3.5	*1.0	1.5
15	3.5	6.8	14	16	27	38	844	*270	37	3.0	1.0	1.2
16	3.7	7.3	15	16	28	38	826	226	42	2.7	1.0	1.2
17	*3.5	9.5	14	16	28	38	*838	222	30	2.6	.9	1.1
18	3.5	7.9	13	17	28	38	*929	208	22	2.2	.9	1.1
19	4.8	8.2	12	17	26	38	1,030	204	22	2.2	.9	1.1
20	5.1	10	13	17	26	38	748	217	21	2.2	.8	1.1
21	5.1	11	14	18	23	38	638	190	23	2.1	.8	1.1
22	5.6	10	16	18	23	38	606	162	25	2.0	.8	1.1
23	7.0	8.5	15	18	25	60	611	142	20	2.0	.8	1.0
24	9.9	7	14	18	27	140	644	132	28	1.8	.8	1.0
25	8.2	6	12	17	29	250	710	129	25	1.8	.7	1.0
26	6.5	6	12	17	29	400	738	109	22	1.6	.7	1.0
27	5.9	*8	13	17	29	550	710	96	19	1.6	.8	*1.1
28	5.9	15	14	17	29	800	699	85	29	1.5	.8	1.1
29	5.9	20	15	*19	27	826	545	78	40	1.5	.8	1.1
30	5.6	100	16	20	-	792	474	71	42	1.5	.8	1.1
31	5.6	-	16	22	-	754	-	62	-	1.5	.8	-
Total	141.3	330.1	863	526	786	5,334	27,331	7,139	1,160	258.9	31.8	31.1
Mean	4.56	11.0	27.8	17.0	27.1	172	911	230	38.7	8.35	1.03	1.04
Ac-ft	280	655	1,710	1,040	1,560	10,580	54,210	14,160	2,300	514	63	62

Calendar year 1951: Max 1,000 Min 0.5 Mean 102 Ac-ft 73,480
Water year 1951-52: Max 1,600 Min 0.7 Mean 120 Ac-ft 87,130

Peak discharge (base, 850 cfs).--Apr. 7 (4 to 5 a.m.) 1,690 cfs (4.09 ft); Apr. 19 (9 to 11 a.m.) 1,140 cfs (3.46 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 20-30, Dec. 6 to Mar. 28 (no gage-height record Jan. 3-28, Feb. 21 to Mar. 25; discharge estimated on basis of 1 discharge measurement, weather records, and records for station below Deep Creek).

North Fork Crooked River below Deep Creek, Oreg.

Location.--Lat 44°19', long. 120°05', in SW¼ sec. 27, T. 14 S., R. 22 E., on left bank a quarter of a mile downstream from Deep Creek, 14 miles northwest of Paulina, and 38 miles east of Prineville.

Drainage area.--264 sq mi.

Records available.--September 1946 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 4,320 ft (by barometer).

Average discharge.--6 years, 179 cfs.

Extremes.--Maximum discharge during year, 3,620 cfs Apr. 5 (gage height, 7.10 ft); minimum, 8 cfs Aug. 17-21 (gage height, 1.10 ft).
1946-52: Maximum discharge, that of Apr. 5, 1952; maximum gage height, 7.69 ft Feb. 12, 1947 (ice jam); minimum discharge, 7 cfs for many days during period July to September 1947 and for Aug. 3, 4, 5, 6, 1949.

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

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	6	3.5	315
1.2	12	4.0	460
1.5	25	4.5	660
2.0	61	5.0	960
2.5	116	6.0	1,900
3.0	200	7.0	3,430

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	14	320	30	60	65	820	735	93	83	9.5	8.5
2	15	14	159	33	65	65	850	628	81	60	9.5	8.5
3	16	15	91	35	65	70	1,200	572	74	46	9.5	9
4	15	16	57	37	65	75	1,580	492	66	36	9.5	9
5	14	16	53	37	60	75	2,670	442	63	31	9.5	8.5
6	12	16	45	36	65	73	3,010	442	129	26	9.5	8.5
7	12	15	40	35	65	73	2,890	476	103	24	9.5	9
8	11	15	30	33	65	75	2,070	472	70	22	10	9.5
9	11	16	34	35	65	75	1,850	532	62	20	10	12
10	11	18	40	35	70	83	1,970	476	79	19	11	10
11	12	20	38	35	70	86	2,150	484	*96	18	10	9.5
12	12	21	34	36	70	88	2,190	476	92	16	9.5	9.5
13	13	18	32	37	60	89	2,180	480	66	15	9.5	9.5
14	13	17	30	38	65	89	1,950	464	57	15	*9	9.5
15	13	18	32	37	70	87	1,540	*427	66	14	8.5	9
16	13	20	36	35	70	89	1,560	373	60	13	8.5	9
17	13	23	34	36	70	90	*1,800	340	47	13	8	9
18	*13	21	30	37	65	91	*2,350	320	40	13	8	9
19	15	22	30	38	65	91	2,300	310	43	12	8	8.5
20	15	25	32	38	60	92	1,460	330	41	12	8	8.5
21	16	29	34	38	55	91	1,310	298	51	12	8	8.5
22	17	25	36	38	60	88	1,310	245	45	12	8.5	8.5
23	21	22	35	38	65	91	1,410	216	40	11	8.5	8.5
24	22	20	32	38	70	182	1,490	200	51	11	8.5	8.5
25	19	18	28	38	70	474	1,600	202	44	11	9	8.5
26	17	17	26	36	70	*700	1,580	169	40	11	9	8.5
27	16	*18	25	35	70	860	1,430	149	40	10	9.5	*9.5
28	16	20	30	35	70	1,130	1,270	135	67	10	9.5	9.5
29	16	30	34	*38	65	1,150	925	122	67	9.5	9	9
30	15	120	36	45	-	1,000	814	107	77	9.5	9	9
31	15	-	35	50	-	920	-	97	-	9.5	8.5	-
Total	457	679	1,548	1,142	1,905	8,307	51,529	11,211	1,950	624.5	281.5	271.5
Mean	14.7	22.6	49.9	36.8	65.7	268	1,718	362	65.0	20.1	9.08	9.05
Ac-ft	906	1,350	3,070	2,270	3,780	16,480	102,200	22,240	3,870	1,240	558	539

Calendar year 1951 : Max 2,260 Min 7.5 Mean 205 Ac-ft 148,300
Water year 1951-52 : Max 3,010 Min 8 Mean 218 Ac-ft 158,500

Peak discharge (base, 1,400 cfs).--Apr. 5 (6:30 p.m.) 3,620 cfs (7.10 ft); Apr. 19 (8 p.m.) 3,280 cfs (6.92 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Oct. 31 to Dec. 1, Dec. 6 to Mar. 4, Mar. 27, Mar. 29 to Apr. 2.

Crooked River near Post, Oreg.

Location (revised).--Lat 44°07'00", long. 120°16'50", in NW¼NW¼ sec. 7, T. 17 S., R. 21 E., on right bank 1 mile downstream from North Fork and 11½ miles southeast of Post.

Drainage area.--2,160 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--November 1908 to August 1911, December 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 3,461.72 ft above mean sea level, datum of 1929. Prior to Dec. 30, 1939, staff gage at site half a mile upstream at different datum.

Average discharge.--12 years (1940-52), 342 cfs.

Extremes.--Maximum discharge during year, 7,550 cfs Mar. 26 (gage height, 7.31 ft), from rating curve extended above 3,800 cfs; minimum, 13 cfs Aug. 22-25; minimum gage height, 0.94 ft Aug. 24.
1908-11, 1939-52: Maximum discharge. that of Mar. 26, 1952; minimum, 4.4 cfs July 12, 1940.

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

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 8				May 9 to Sept. 30			
1.2	22	3.0	570	0.9	10	1.7	101
1.4	45	3.5	980	1.1	24	2.0	177
1.7	99	4.0	1,540	1.4	51		
2.0	177	5.0	2,990	Note.--Same as preceding table above 1.9 ft.			
2.5	350	7.0	6,900				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	45	820	85	1,300	221	2,040	1,220	128	148	18	16
2	40	41	470	85	1,740	211	2,170	1,090	114	130	16	17
3	40	50	272	95	1,060	205	2,640	960	90	95	16	17
4	36	50	202	100	850	208	3,110	860	77	77	16	19
5	58	48	168	100	860	205	4,200	764	75	64	15	18
6	83	48	135	100	612	199	5,030	*700	121	58	15	20
7	41	51	120	110	488	205	4,700	693	151	51	15	21
8	40	51	70	110	422	224	3,750	860	99	46	*14	21
9	37	51	110	*110	382	392	3,140	890	80	41	14	23
10	29	54	150	110	366	772	*3,060	780	*90	38	24	23
11	29	62	160	110	362	679	3,190	740	110	36	25	24
12	31	74	140	110	316	488	3,180	708	133	34	22	24
13	33	76	130	110	266	406	3,140	686	105	30	20	25
14	35	76	120	110	255	350	3,060	665	88	26	20	25
15	40	67	110	110	269	335	2,760	651	86	22	19	25
16	40	56	110	100	260	382	2,520	576	93	21	19	32
17	45	60	120	100	240	637	2,470	516	79	25	19	31
18	41	60	130	110	210	516	2,820	475	68	24	18	30
19	*45	60	120	115	*220	414	*3,190	448	72	24	19	26
20	48	65	110	120	220	366	2,410	466	75	23	18	24
21	50	73	120	120	200	335	2,020	448	90	20	16	21
22	50	73	130	120	192	308	1,860	390	90	21	13	23
23	56	65	120	120	228	339	1,840	331	86	19	13	24
24	57	65	100	130	228	1,680	1,920	298	82	16	13	25
25	57	60	85	140	218	4,920	1,970	294	88	14	13	*25
26	54	65	75	140	215	6,230	2,020	269	80	15	14	23
27	51	73	75	145	218	*4,350	1,920	244	80	16	15	21
28	48	*88	75	150	224	4,350	1,810	211	93	16	15	20
29	48	113	80	160	228	3,660	1,520	174	128	16	16	24
30	48	339	85	180	-	2,710	1,310	151	136	15	16	24
31	48	-	80	400	-	2,260	-	138	-	16	17	-
Total	1,388	2,159	4,792	3,905	12,649	38,557	80,770	17,696	2,887	1,197	523	691
Mean	44.7	72.0	155	126	436	1,244	2,692	571	96.2	38.6	16.9	23.0
Ac-ft	2,750	4,280	9,500	7,750	25,090	76,480	160,200	35,100	5,730	2,370	1,040	1,370

Calendar year 1951: Max 2,870 Min 6.7 Mean 385 Ac-ft 278,400
Water year 1951-52: Max 6,230 Min 13 Mean 457 Ac-ft 331,700

Peak discharge (base, 1,600 cfs).--Feb. 1 (9 p.m.) 2,470 cfs (4.68 ft); Mar. 26 (1 a.m.) 7,550 cfs (7.31 ft); Apr. 5 (12 p.m.) 5,540 cfs (6.35 ft); Apr. 19 (3 to 4 a.m.) 3,430 cfs (5.26 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 17-19, 25, Dec. 6 to Feb. 1, Feb. 16-21.

Crooked River above Hoffman Dam, near Prineville, Oreg.

Location.--Lat 44°08'40", long. 120°49'40", in NE¼ sec. 32, T. 16 S., R. 16 E., on right bank 0.9 mile upstream from Hoffman diversion dam and 11 miles south of Prineville.

Drainage area.--2,810 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--October 1908 to September 1914, January 1940 to February 1941 (discharge measurements only), March 1941 to September 1952. Published as "near Prineville" October 1908 to December 1912 and as "at Hoffman's Ranch, near Prineville" January 1913 to September 1914.

Gage.--Water-stage recorder. Datum of gage is 2,981.23 ft above mean sea level, datum of 1929. Prior to December 1912, staff gage at site at Stearns Ranch, 5½ miles downstream at different datum. January 1913 to September 1914, staff gage at site at Hoffman Ranch, 1 mile downstream, below Hoffman diversion, at different datum.

Average discharge.--17 years (1908-14, 1941-52), 386 cfs.

Extremes.--Maximum discharge during year, 8,410 cfs Mar. 26 (gage height, 8.2 ft, from high-water mark); minimum, 6.4 cfs Oct. 1.
1908-14, 1940-52: Maximum discharge observed, 9,080 cfs Mar. 1, 2, 1910 (gage height, 9.4 ft, site and datum then in use), from rating curve extended above 1,000 cfs; no flow at times in 1940.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions above station for irrigation; no regulation.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 26				Mar. 27 to Sept. 30			
1.3	13	3.4	840	1.1	7.0	2.5	281
1.4	20	4.0	1,380	1.2	12	3.0	565
1.6	43	5.0	2,500	1.4	28	4.0	1,460
2.0	111	6.0	4,000	1.7	68	5.0	2,700
2.4	219	8.0	7,970	2.0	128	7.0	5,870
2.9	465						

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	54	494	b85	b500	249	2,460	1,340	158	166	11	7.5
2	23	50	672	b90	2,420	242	2,420	1,190	147	172	10	8.5
3	30	51	383	b90	1,680	230	2,910	1,040	124	160	10	10
4	50	54	257	b100	1,050	227	3,460	947	110	130	12	9.5
5	49	57	209	b110	1,090	227	4,460	832	98	108	17	9.0
6	42	56	b150	b120	808	223	5,400	758	96	94	*15	8.5
7	97	56	b130	b120	612	219	5,370	742	133	82	15	10
8	54	56	134	b120	514	234	4,600	807	160	77	15	13
9	47	56	53	b110	453	283	3,720	974	128	66	17	17
10	46	59	101	*b120	423	778	3,440	866	117	63	56	16
11	42	67	162	b120	423	792	3,520	790	*130	49	24	18
12	39	89	187	b120	388	642	3,560	766	138	49	24	18
13	39	103	152	b120	340	486	3,610	*726	147	49	25	18
14	40	103	152	b120	296	417	3,550	718	142	48	20	18
15	43	91	144	b120	296	383	3,340	695	128	44	20	18
16	44	89	142	b120	320	378	3,020	658	117	37	18	18
17	47	b68	118	b110	b300	591	2,840	586	119	34	19	21
18	47	b75	146	b110	b270	650	3,060	530	104	30	18	29
19	*50	b70	142	b120	b250	514	*3,480	495	98	27	20	28
20	53	80	144	b140	*b250	441	3,020	489	94	27	19	27
21	57	82	132	b140	b240	388	2,430	489	92	24	16	25
22	57	82	146	b140	b230	366	2,160	463	108	23	16	21
23	60	84	146	b140	b240	366	2,080	403	113	21	16	18
24	65	77	132	b140	253	818	2,100	355	113	20	16	18
25	68	75	107	b160	249	3,840	2,130	330	113	19	14	*17
26	67	*82	87	b160	246	7,200	2,220	321	117	16	13	18
27	63	84	b80	b160	246	*5,870	2,160	285	117	15	12	19
28	62	86	b80	b170	257	4,970	2,020	251	124	13	11	21
29	59	97	b80	b180	257	4,480	1,740	220	135	13	10	20
30	54	134	b85	b200	-	3,430	1,460	189	169	13	8.5	20
31	54	-	b90	b270	-	2,740	-	169	-	11	8.0	-
Total	1,562	2,267	5,237	4,125	14,901	42,674	91,740	19,424	3,689	1,700	525.5	519.0
Mean	50.4	75.6	169	133	514	1,377	3,058	627	123	54.8	17.0	17.3
Ac-ft	3,100	4,500	10,390	8,180	29,560	84,640	182,000	38,530	7,320	3,370	1,040	1,030

Calendar year 1951: Max 3,340 Min 1.2 Mean 444 Ac-ft 321,600
Water year 1951-52: Max 7,200 Min 7.5 Mean 515 Ac-ft 373,700

Peak discharge (base, 2,000 cfs).--Feb. 2 (8 a.m.) 2,840 cfs (5.25 ft); Mar. 26 (about 12 m.) 8,410 cfs (8.2 ft); Apr. 6 (12:30 p.m.) 5,730 cfs (6.92 ft); Apr. 19 (1 to 2 p.m.) 3,740 cfs (5.73 ft).

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

Crooked River near Culver, Oreg.

Location.--Lat 44°33'35", long. 121°16'10", in sec. 3 (50 ft west of ¼-corner on line between secs. 2 and 3), T. 12 S., R. 12 E., on right bank 1 mile upstream from mouth, 1 mile downstream from Cove powerplant, and 4 miles northwest of Culver.

Drainage area.--4,330 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--October 1917 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,664.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 2, 1945, staff gages at several sites within 1 mile of present site at various datums.

Average discharge.--35 years, 1,502 cfs.

Extremes.--Maximum discharge during year, 8,000 cfs Mar. 27 (gage height, 8.22 ft); minimum, 1,170 cfs Jan. 25, Sept. 4, 26; minimum daily, 1,290 cfs July 25 to Aug. 2.
1917-52: Maximum discharge observed, 8,260 cfs Mar. 30, 31, 1943 (gage height, 6.70 ft, site and datum then in use); minimum, 920 cfs Oct. 14, 1945 (gage height, 1.67 ft); minimum daily, 970 cfs July 12 to Sept. 5, 1921.

Remarks.--Records excellent. Flow slightly regulated by Ochoco Reservoir (capacity, 47,500 acre-ft); occasional diurnal fluctuation caused by powerplant 1 mile above station. Summer flow above Prineville affected by diversions for irrigation and return flow from irrigated areas. Springs increase flow about 1,000 cfs within an area extending 17 miles above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1252.

Revisions (water years).--W 864: 1922, 1925, 1928, 1932, 1936-37.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 26		Mar. 27 to Sept. 30	
2.6	1,360	2.4	1,260
3.0	1,640	3.0	1,640
4.0	2,490	4.0	2,520
5.0	3,450	6.0	4,820
6.2	4,860	8.2	7,970

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,390	1,420	1,450	1,480	1,680	1,620	4,510	2,780	1,460	1,560	1,290	1,380
2	1,410	1,410	1,850	1,430	2,340	1,610	4,200	2,660	1,460	1,550	1,290	1,380
3	1,420	1,410	2,030	1,400	3,440	1,580	4,240	2,500	1,440	1,540	1,300	1,380
4	1,410	1,390	1,780	1,390	2,830	1,590	4,730	2,380	1,430	1,520	1,300	1,380
5	1,390	1,380	1,650	1,390	2,510	1,600	5,330	2,290	1,420	1,490	*1,310	1,390
6	1,390	1,380	1,570	1,420	2,510	1,610	6,410	2,190	1,470	1,450	1,310	1,390
7	1,380	1,380	1,480	1,430	2,220	1,570	7,550	2,140	1,460	1,420	1,310	1,400
8	1,400	1,370	1,410	1,430	2,040	1,540	7,860	2,150	1,460	1,420	1,310	1,410
9	1,390	1,380	1,400	1,430	1,940	1,560	7,100	2,220	*1,510	1,410	1,310	1,410
10	1,370	1,380	1,410	1,430	1,880	1,620	5,710	2,340	1,470	1,390	1,350	1,410
11	1,370	1,400	1,370	1,430	1,860	2,130	5,350	2,210	1,480	1,360	1,360	1,430
12	1,380	1,430	1,430	1,420	1,840	2,190	5,400	2,150	1,530	1,350	1,370	1,430
13	1,380	1,450	1,430	1,420	1,780	2,040	5,320	2,100	1,530	1,330	1,370	1,440
14	1,390	1,440	1,420	*1,430	1,720	1,930	5,360	2,040	1,550	1,330	1,370	1,430
15	1,390	1,430	1,430	1,410	1,680	1,900	5,250	2,050	1,560	1,330	1,370	1,420
16	*1,390	1,410	1,430	1,420	1,700	1,900	5,030	*2,020	1,550	1,310	1,380	1,430
17	1,390	1,400	1,420	1,380	1,710	1,920	4,920	1,940	1,510	1,300	1,370	1,420
18	1,410	1,390	1,420	1,390	1,690	2,180	5,050	1,860	1,500	1,300	1,370	1,390
19	1,430	1,370	1,430	1,400	1,640	2,100	4,790	1,830	1,460	1,300	1,370	1,380
20	1,430	1,380	1,420	1,400	*1,610	1,940	*5,000	1,820	1,460	1,300	1,370	1,380
21	1,450	1,390	1,430	1,410	1,600	1,870	4,430	1,820	1,460	1,300	1,370	1,380
22	1,450	1,380	1,430	1,420	1,570	1,830	3,880	1,800	1,460	*1,300	1,380	1,390
23	1,460	1,380	1,460	1,420	1,540	1,820	*3,620	1,770	1,460	1,300	1,390	1,390
24	1,460	1,380	1,430	1,420	1,580	1,860	3,420	1,690	1,500	1,300	1,390	1,390
25	1,460	1,380	1,400	1,410	1,600	2,750	3,440	1,620	1,500	1,290	1,390	*1,390
26	1,460	1,380	1,400	1,420	1,590	4,780	3,470	1,600	1,500	1,290	1,390	1,390
27	1,460	1,380	1,380	1,430	1,590	*7,140	3,510	1,600	1,500	1,290	1,380	1,380
28	1,460	1,380	1,390	1,440	1,610	7,560	3,400	1,550	1,520	1,290	1,380	1,380
29	1,450	*1,380	1,460	1,460	1,620	6,840	3,310	1,530	1,540	1,290	1,380	1,380
30	1,430	1,390	1,470	1,480	-	6,400	3,000	1,500	1,570	1,290	1,380	1,390
31	1,430	-	1,500	1,540	-	5,290	-	1,480	-	1,290	1,380	-
Total	43,880	41,820	45,980	44,180	54,920	84,270	144,590	61,630	44,720	42,190	41,990	41,940
Mean	1,415	1,394	1,483	1,425	1,894	2,718	4,820	1,988	1,491	1,361	1,355	1,398
Ac-ft	87,030	82,950	91,200	87,630	108,900	167,100	286,800	122,200	88,700	83,680	83,290	83,190

Calendar year 1951: Max 4,940 Min 1,270 Mean 1,857 Ac-ft 1,344,000
Water year 1951-52: Max 7,860 Min 1,290 Mean 1,891 Ac-ft 1,373,000

Peak discharge (base, 2,500 cfs).--Feb. 3 (6 a.m.) 3,720 cfs (5.25 ft); Mar. 27 (12 p.m.) 8,000 cfs (8.22 ft); Apr. 8 (10 a.m. to 12 m.) 7,960 cfs (8.19 ft).
* Discharge measurement made on this day.

Lake Creek near Sisters, Oreg.

Location.--Lat 44°25'40", long. 121°43'30", in SW¼ sec. 24, T. 13 S., R. 8 E., on left bank a quarter of a mile downstream from Suttle Lake, 6 miles upstream from mouth, and 13 miles northwest of Sisters.

Drainage area.--22.2 sq mi.

Records available.--1911-13 (occasional readings during summers), April 1915 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 3,430 ft (from topographic map). May 31, 1911, to Oct. 30, 1913, and Apr. 7, 1915, to Mar. 31, 1916, staff gages at two sites 1,000 ft upstream at different datums. Apr. 1, 1916, to Oct. 12, 1928, staff gage or water-stage recorder at site 40 ft downstream at different datum.

Average discharge.--36 years (1915-18, 1919-52), 50.1 cfs.

Extremes.--Maximum discharge during year, 148 cfs May 22 (gage height, 2.29 ft); minimum, 29 cfs Aug. 31 (gage height, 0.96 ft).
1911-13, 1915-52: Maximum discharge, 351 cfs Dec. 16, 1946 (gage height, 3.50 ft); minimum, 1.0 cfs Nov. 4, 5, 1940; minimum daily, 8 cfs Nov. 5, 1940, Oct. 6, 1942.

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

Revisions (water years).--W 1124: 1943, 1947. W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	31
1.5	65
2.0	113
2.3	149
3.0	259

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	41	58	56	51	51	56	103	130	59	40	39
2	40	41	65	54	51	51	57	103	128	59	40	39
3	43	41	103	52	56	51	57	102	124	60	40	39
4	41	*39	117	52	60	51	57	100	120	59	40	39
5	40	39	105	51	59	51	57	98	116	57	*41	39
6	40	39	93	51	59	51	58	95	116	56	41	39
7	39	39	79	49	62	51	59	93	117	55	41	39
8	39	39	71	49	63	49	59	92	117	54	40	39
9	39	40	70	49	67	*49	61	90	114	53	41	39
10	39	43	66	52	70	50	*67	90	110	52	41	39
11	39	44	63	51	69	50	71	91	107	*50	41	38
12	39	49	61	50	69	49	70	92	*103	50	41	38
13	40	49	60	*49	66	49	71	97	101	49	41	37
14	39	49	59	50	65	49	72	100	98	49	40	37
15	40	49	54	49	64	48	72	105	82	48	40	37
16	40	47	51	49	63	48	79	109	71	46	39	*37
17	39	46	51	48	61	47	85	111	73	46	38	37
18	40	45	56	47	60	49	80	114	74	46	37	37
19	41	44	58	46	61	49	78	117	73	44	36	37
20	43	44	56	48	60	48	78	121	72	44	36	37
21	43	44	56	49	59	47	78	123	72	43	36	37
22	44	44	59	50	58	46	79	135	71	43	37	37
23	49	42	58	49	59	47	79	139	71	43	38	36
24	50	42	56	49	57	51	81	135	70	43	38	36
25	49	42	55	48	56	51	82	134	70	43	38	36
26	48	43	55	47	55	51	84	131	69	41	38	36
27	47	43	56	46	54	51	87	134	67	40	38	35
28	46	45	56	45	52	51	93	135	63	39	38	35
29	42	49	59	44	51	53	97	131	61	40	38	35
30	42	50	60	46	-	55	102	132	62	41	37	35
31	42	-	58	48	-	56	-	134	-	40	37	-
Total	1,300	1,311	2,024	1,523	1,737	1,550	2,206	3,486	2,722	1,492	1,207	1,120
Mean	41.9	43.7	65.3	49.1	59.9	50.0	73.5	112	90.7	48.1	38.9	37.3
Ac-ft	2,580	2,600	4,010	3,020	3,450	3,070	4,380	6,910	5,400	2,960	2,390	2,220

Calendar year 1951 : Max 157 Min 19 Mean 65.2 Ac-ft 47,230
Water year 1951-52 : Max 139 Min 35 Mean 59.2 Ac-ft 42,990

* Discharge measurement made on this day.

Metolius River near Grandview, Oreg.

Location.--Lat 44°36'40", long. 121°27'10", in NE¼ sec. 19, T. 11 S., R. 11 E., on right bank at Montgomery Ranch, 8 miles northwest of Grandview and 13 miles northwest of Culver.

Drainage area.--324 sq mi (hydrologic drainage boundary uncertain owing to ground-water exchange).

Records available.--April 1910 to February 1912 (gage heights only), March 1912 to December 1913, October 1921 to September 1952. Prior to October 1921, published as "at Hubbards Ranch."

Gage.--Water-stage recorder. Altitude of gage is 1,910 ft (river-profile survey). Apr. 24, 1910, to Dec. 30, 1913, staff gage at site 5 miles upstream at different datum. Oct. 1, 1921, to May 3, 1949, staff gage at site 20 ft downstream at same datum.

Average discharge.--31 years (1921-52), 1,428 cfs.

Extremes.--Maximum discharge during year, 2,080 cfs June 6 (gage height, 1.15 ft); maximum gage height, 1.19 ft Feb. 4; minimum discharge, 1,370 cfs Jan. 17.
1921-52: Maximum discharge, 5,780 cfs Jan. 7, 1923 (gage height, 3.23 ft), from rating curve extended above 2,200 cfs; minimum, 1,080 cfs Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

Remarks.--Records excellent. No diversion or regulation above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-23, Mar. 24 to Sept. 30		Oct. 24 to Mar. 23	
0.5	1,370	0.7	1,390
1.2	2,140	1.2	1,950

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,680	1,420	1,690	1,470	1,710	1,480	1,840	1,900	1,960	1,830	1,670	1,580
2	1,710	1,420	1,600	1,460	1,700	1,470	1,840	1,860	1,950	1,800	1,670	1,590
3	1,770	1,430	1,640	1,470	1,720	1,470	1,830	1,850	1,960	1,800	1,670	1,590
4	1,560	1,440	1,650	1,470	1,910	1,470	1,830	1,830	2,000	1,820	1,670	1,610
5	1,500	1,420	1,650	1,460	1,870	1,460	1,850	1,820	2,050	1,820	1,670	1,620
6	1,490	1,420	1,590	1,440	1,760	1,470	1,910	1,820	2,040	1,780	*1,660	1,590
7	1,480	1,410	1,570	1,440	1,700	1,460	1,930	1,820	1,980	1,770	1,660	1,580
8	1,470	1,410	1,540	1,440	1,660	1,460	1,900	1,820	1,960	1,770	1,660	1,590
9	1,470	1,410	1,530	1,460	1,640	1,470	1,880	1,820	1,980	1,780	1,660	1,600
10	1,470	1,440	1,530	1,470	1,620	1,480	1,860	1,830	1,980	1,790	1,660	1,580
11	1,480	1,500	1,520	1,440	1,610	1,470	1,880	1,860	1,900	1,780	1,660	1,560
12	1,500	1,560	1,510	1,440	1,600	1,470	1,860	1,900	1,840	1,770	1,640	1,550
13	1,500	1,490	1,500	1,440	1,580	1,470	1,890	1,950	1,830	1,760	1,640	1,550
14	1,580	1,470	1,490	*1,440	1,580	1,470	1,880	1,940	1,820	1,740	1,660	1,540
15	1,560	1,430	1,490	1,430	1,580	1,460	1,840	1,900	1,800	1,740	1,640	1,550
16	1,500	1,420	1,480	1,420	1,570	1,460	1,840	*1,910	1,780	*1,760	1,630	1,550
17	*1,490	1,420	1,480	1,420	1,560	1,460	1,840	1,950	1,800	1,730	1,630	1,550
18	1,510	1,420	1,540	1,420	1,540	1,470	1,880	1,950	1,820	1,730	1,620	1,550
19	1,560	1,420	1,510	1,420	1,540	1,460	1,920	2,020	1,850	1,720	1,620	1,550
20	1,600	1,420	1,500	1,420	*1,530	1,440	1,880	2,050	1,860	1,710	1,620	1,560
21	1,550	1,420	1,530	1,420	1,510	1,440	1,850	2,000	1,840	1,710	1,620	1,560
22	1,560	1,420	1,640	1,420	1,520	1,430	1,850	1,960	1,810	1,700	1,620	1,560
23	1,860	1,410	1,570	1,420	1,510	1,480	1,860	1,990	1,810	1,710	1,620	1,560
24	1,570	1,410	1,530	1,420	1,500	1,710	1,880	2,000	1,820	1,700	1,610	*1,550
25	1,520	1,430	1,510	1,420	1,500	1,780	1,910	2,030	1,810	1,690	1,600	1,550
26	1,480	1,480	1,510	1,420	1,500	1,830	1,940	2,020	1,790	1,680	1,590	1,560
27	1,470	1,480	1,500	1,410	1,490	1,830	1,960	2,010	1,800	1,690	1,590	1,550
28	1,460	1,490	1,500	1,410	1,490	1,860	1,980	2,040	1,830	1,680	1,580	1,540
29	1,460	*1,520	1,530	1,410	1,480	1,860	1,930	2,040	2,000	1,680	1,590	1,540
30	1,440	1,580	1,510	1,470	-	*1,880	1,910	2,000	1,900	1,680	1,580	1,520
31	1,430	-	1,480	1,530	-	1,860	-	1,990	-	1,680	1,580	-
Total	47,680	43,410	47,820	44,620	46,480	48,280	56,450	59,880	56,570	54,000	50,590	46,930
Mean	1,538	1,447	1,543	1,439	1,603	1,557	1,882	1,932	1,886	1,742	1,632	1,564
Ac-ft	94,570	86,100	94,850	88,500	92,190	95,760	112,000	118,800	112,200	107,100	100,300	93,080

Calendar year 1951: Max 2,750 Min 1,410 Mean 1,732 Ac-ft 1,254,000
Water year 1951-52: Max 2,050 Min 1,410 Mean 1,647 Ac-ft 1,195,000

* Discharge measurement made on this day.

Deschutes River near Madras, Oreg.

Location.--Lat 44°42'30", long. 121°14'10", in NE¼ sec. 13, T. 10 S., R. 12 E., on right bank 1 mile downstream from Pelton dam site, 5 miles upstream from Shitike Creek, and 7½ miles northwest of Madras at mile 101.6 (U.S.G.S. Plan and Profile).

Drainage area.--7,900 sq mi, approximately.

Records available.--October 1923 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,407.35 ft above mean sea level (levels by Ebasco Services, Inc.). Prior to May 5, 1924, staff gage and May 5, 1924, to June 5, 1933, water-stage recorder, at site 1 mile upstream at different datum.

Average discharge.--29 years, 4,287 cfs.

Extremes.--Maximum discharge during year, 12,700 cfs Mar. 28 (gage height, 6.62 ft); minimum, 3,880 cfs July 31, Aug. 1 (gage height, 2.08 ft).
1923-52: Maximum discharge, 13,300 cfs Jan. 1, 1943 (gage height, 6.89 ft); minimum, 2,940 cfs Sept. 20, 1942 (gage height, 1.41 ft).

Remarks.--Records excellent. Large diversions in upper river basin for irrigation. Some winter and spring runoff stored in Crescent Lake and in Crane Prairie, Wickiup, and Ochoco Reservoirs. Slight fluctuations caused by powerplants on Deschutes River near Redmond and Crooked River near Culver. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.0	3,760
3.0	5,350
4.0	7,120
5.0	9,090
6.5	12,400

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,120	4,990	4,990	4,830	5,380	4,880	9,050	6,030	4,990	5,880	3,920	4,120
2	4,470	5,280	5,180	a4,600	5,790	4,820	8,820	5,860	4,960	5,760	4,030	4,100
3	4,690	5,380	5,380	a4,500	7,040	4,870	8,740	5,660	4,950	5,690	4,150	4,120
4	4,580	5,420	5,370	a4,600	6,970	4,870	9,220	5,450	5,060	5,660	*4,180	4,150
5	4,430	5,370	5,300	a4,700	6,500	4,850	9,640	5,250	5,320	5,590	4,230	4,210
6	4,430	5,350	5,150	a4,700	6,370	4,990	10,500	5,080	4,470	5,450	4,200	4,160
7	4,530	5,330	5,010	4,750	5,980	5,110	11,600	5,060	5,280	5,040	4,200	4,180
8	4,580	5,330	4,830	4,740	5,690	4,330	12,100	5,100	5,260	4,770	4,210	4,230
9	4,480	5,060	4,790	4,770	5,550	5,490	11,300	5,210	*5,300	4,610	4,240	4,340
10	4,430	4,910	4,850	4,820	5,490	5,570	9,760	5,300	5,230	4,510	4,290	4,350
11	4,400	4,990	4,870	4,790	5,420	*6,030	9,340	5,180	5,160	4,500	4,310	4,400
12	4,420	5,210	4,910	4,740	5,370	6,140	9,260	5,150	5,210	4,450	4,340	4,430
13	4,390	5,130	4,910	4,740	5,260	6,010	9,150	*5,180	5,230	4,350	4,350	4,450
14	4,450	5,100	4,870	4,750	5,250	5,890	9,150	5,100	5,330	4,320	4,400	4,450
15	4,640	4,990	4,870	4,710	5,230	5,840	8,980	5,100	5,400	4,290	4,390	4,420
16	*4,690	4,960	4,870	4,710	5,250	5,860	8,620	5,060	5,330	4,740	4,370	4,450
17	4,910	4,960	4,830	4,610	5,230	5,880	8,240	5,030	5,300	4,270	4,350	4,450
18	4,900	4,950	4,910	4,630	*5,180	a6,000	8,240	4,980	5,250	4,090	4,390	4,390
19	4,990	4,900	4,850	4,660	5,150	a6,200	8,380	4,980	5,250	4,030	4,420	4,340
20	5,030	4,880	4,790	4,640	5,040	a6,000	8,380	5,040	5,280	4,030	4,450	4,310
21	4,980	4,850	4,830	4,630	5,010	a5,800	7,630	5,040	5,250	4,020	4,450	4,210
22	4,960	4,790	4,820	4,800	4,990	a5,600	6,880	4,990	5,200	4,020	4,450	4,150
23	5,400	4,740	4,610	4,720	5,160	a5,600	6,590	4,960	5,200	4,020	4,500	*4,160
24	5,300	4,690	4,750	4,720	5,350	5,880	6,370	4,950	5,320	3,980	4,510	4,140
25	5,200	4,690	4,870	4,660	5,380	6,750	6,370	5,110	5,230	3,970	4,530	4,100
26	5,150	4,770	4,880	4,590	5,370	9,050	6,480	5,280	5,180	3,960	4,480	4,100
27	5,130	4,720	4,850	4,530	5,040	11,400	6,590	5,210	5,200	3,960	4,290	4,060
28	5,150	4,820	4,850	4,550	4,930	*12,300	6,620	5,150	5,320	3,960	4,240	4,030
29	5,110	4,670	4,980	4,530	4,930	11,500	6,520	5,180	5,660	3,960	4,260	3,960
30	5,040	*4,720	4,950	4,610	-	11,100	6,340	5,100	5,960	3,920	4,240	3,960
31	4,980	-	4,910	4,750	-	9,950	-	4,990	-	3,910	4,160	-
Total	147,960	149,950	152,830	145,080	159,300	205,560	254,860	160,760	158,080	139,440	133,530	126,920
Mean	4,773	4,998	4,930	4,680	5,493	6,631	8,495	5,186	5,269	4,498	4,307	4,231
Ac-ft	293,500	297,400	303,100	287,800	316,000	407,700	505,500	318,900	313,500	276,600	264,900	251,700

Calendar year 1951: Max 11,000 Min 3,760 Mean 5,443 Ac-ft 3,940,000
Water year 1951-52: Max 12,300 Min 3,910 Mean 5,285 Ac-ft 3,837,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station at Moody near Biggs, weather records, and recorded range in stage.

Warm Springs River at Hehe Mill near Warm Springs, Oreg.

Location.--Lat 44°58'00", long. 121°28'20", in N½ sec. 18, T. 7 S., R. 11 E., on left bank at downstream side of highway bridge, a quarter of a mile east of abandoned Hehe Mill, 10 miles south of Bear Springs ranger station, and 18 miles northwest of Warm Springs.

Drainage area.--108 sq mi.

Records available.--June 1915, August 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 746.26 ft above mean sea level (Oregon State Highway Department benchmark). During June 1915, staff gage at site half a mile downstream at different datum.

Extremes.--Maximum discharge during year, 369 cfs Feb. 4 (gage height, 1.93 ft); maximum gage height, 2.11 ft Jan. 3 (ice jam); minimum discharge, 121 cfs Sept. 14-30.
1915, 1949-52: Maximum discharge, 662 cfs Feb. 11, 1951 (gage height, 2.80 ft), from rating curve extended above 350 cfs; maximum gage height, 4.56 ft Jan. 31, 1951 (ice jam); minimum discharge, 98 cfs Jan. 17, 1950; minimum daily, 102 cfs June 15-17, 1915.
A discharge of 97 cfs was measured on Sept. 5, 1915.

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 4		Feb. 5 to Sept. 30	
0.9	118	1.0	116
1.3	205	1.4	198
1.7	318	1.9	339

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	143	130	192	b140	170	133	227	301	241	172	126	123
2	152	130	182	b140	190	131	221	287	232	150	128	123
3	150	130	170	b140	205	133	219	275	221	144	126	123
4	141	130	170	b140	309	131	214	266	219	142	*130	126
5	137	130	185	b140	272	130	221	261	211	141	130	130
6	135	130	158	b140	227	130	235	252	208	139	130	124
7	135	130	148	*143	206	130	244	249	201	137	130	124
8	135	130	143	141	191	128	244	246	193	137	130	124
9	135	132	139	141	184	133	241	244	188	137	130	126
10	135	135	137	141	176	141	238	246	184	135	128	124
11	135	141	139	141	172	137	235	249	184	135	128	124
12	135	168	137	141	163	135	235	258	*179	135	128	123
13	135	156	137	141	156	133	241	*330	172	135	126	123
14	139	148	135	141	154	133	246	319	176	133	126	121
15	*137	139	135	141	154	133	241	301	184	133	126	121
16	137	135	137	141	152	133	241	296	174	133	126	121
17	135	133	137	139	148	137	235	298	165	133	126	121
18	137	133	154	137	*144	139	246	298	159	131	126	121
19	139	133	150	137	142	137	269	307	156	131	126	121
20	143	133	143	137	141	135	269	319	154	131	126	121
21	146	133	152	137	137	131	264	316	152	313	126	121
22	139	132	210	139	137	130	261	301	152	131	126	121
23	168	130	175	137	137	144	264	293	150	130	124	*121
24	152	130	158	137	133	179	264	290	148	130	126	121
25	141	132	152	135	133	208	272	287	146	130	126	121
26	135	*137	b150	135	133	246	293	278	146	130	*124	121
27	133	139	146	135	135	258	319	275	146	128	124	121
28	132	146	143	135	133	*264	333	272	159	128	124	121
29	132	158	148	135	133	255	316	269	188	128	124	121
30	132	*156	143	137	-	246	307	261	181	128	124	121
31	132	-	141	152	-	244	-	249	-	128	124	-
Total	4,312	4,119	4,746	4,316	4,867	4,977	7,655	8,693	5,369	4,186	3,924	3,674
Mean	139	137	153	139	168	161	255	280	179	135	127	122
Cfsm	1.29	1.27	1.42	1.29	1.56	1.49	2.36	2.59	1.66	1.25	1.18	1.13
In.	1.48	1.42	1.63	1.49	1.68	1.71	2.64	2.99	1.85	1.44	1.35	1.27
Ac-ft	8,550	8,170	9,410	8,560	9,650	9,870	15,180	17,240	10,650	8,300	7,780	7,290

Calendar year 1951: Max 652 Min 130 Mean 214 Cfsm 1.98 In. 26.90 Ac-ft 155,000
Water year 1951-52: Max 333 Min 121 Mean 166 Cfsm 1.54 In. 20.95 Ac-ft 120,600

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

Clear Creek near Government Camp, Oreg.

Location.--Lat 45°10'20", long. 121°41'00", in NW¼ sec. 4, T. 5 S., R. 9 E., on right bank 0.7 mile downstream from Clear Lake Outlet and 9 miles southeast of Government Camp.

Drainage area.--8.9 sq mi, approximately.

Records available.--October 1946 to September 1952 in reports of Geological Survey. December 1940 to September 1941 in reports of Oregon State engineer, published as "at Oakgrave Road near Wapinitia."

Gage.--Water-stage recorder. Datum of gage is 3,450.94 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. December 1940 to September 1941 at different datum.

Average discharge.--6 years, 22.3 cfs.

Extremes.--Maximum discharge during year, 76 cfs May 21 (gage height, 2.38 ft); minimum, 5.1 cfs Mar. 22, 23 (gage height, 1.41 ft).
1940-41, 1946-52: Maximum discharge, 150 cfs Dec. 15, 1946 (gage height, 3.00 ft); minimum observed, 1.6 cfs Nov. 1, 1940.

Remarks.--Records fair. No diversions or regulation.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 19		May 20 to Sept. 30	
1.3	3.0	1.4	5.5
1.4	6.5	1.6	15
1.5	11	1.9	34
1.7	24	2.4	78
2.4	79		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	12	18	8.7	8.7	7.4	18	60	50	24	9.8	6.4
2	18	12	17	8.3	11	6.5	18	*58	47	22	9.8	6.4
3	13	12	17	8.3	12	6.5	19	57	46	21	9.8	6.4
4	8.3	12	20	8.3	14	6.9	22	54	42	21	9.4	6.4
5	8	12	20	7.8	14	6.5	22	52	40	20	9.4	6.4
6	8	11	18	7.4	14	6.5	23	52	37	18	9.4	6.4
7	8	11	17	6.5	14	6.5	24	51	36	17	9.4	6.4
8	8	11	16	6.2	13	6.2	24	53	31	16	8.9	6.4
9	8	11	16	6.2	12	6.2	25	52	30	15	8.9	6.4
10	8	12	15	5.8	11	6.2	25	52	29	15	8.9	6.4
11	*10	12	15	5.4	10	5.8	26	54	28	14	8.9	6.4
12	10	13	14	5.8	10	5.8	26	56	*27	14	8.1	*6.4
13	10	15	13	5.8	9.6	*5.8	27	64	26	14	8.1	6.4
14	11	14	13	5.8	9.6	5.8	29	67	28	14	8.1	5.9
15	11	14	13	5.8	9.1	5.8	30	68	28	13	7.6	5.9
16	11	*13	13	5.8	9.1	5.8	30	67	26	13	7.6	5.9
17	11	13	13	5.8	9.1	5.8	31	69	24	13	7.6	5.9
18	11	13	13	6.2	8.7	5.8	34	70	23	13	7.6	5.9
19	11	12	*12	6.2	8.7	5.8	36	74	22	12	7.6	5.5
20	12	12	12	6.2	8.3	5.4	36	75	22	12	7.6	5.5
21	12	12	12	5.8	8.3	5.4	37	75	22	12	7.2	5.5
22	13	12	12	5.8	8.3	5.1	38	74	21	12	7.2	5.5
23	16	12	12	5.8	7.8	5.8	40	70	20	12	7.2	5.9
24	16	11	12	5.8	7.8	8.3	40	69	19	11	7.2	5.9
25	15	12	12	5.8	7.8	12	45	67	19	11	7.2	5.5
26	15	12	10	5.8	7.4	15	53	64	18	11	6.4	5.5
27	14	13	9.6	5.8	7.4	17	57	64	18	11	6.4	5.5
28	13	13	9.6	*5.8	7.4	18	57	63	21	*11	6.4	5.5
29	13	14	9.6	5.8	7.4	19	56	58	24	11	6.4	5.5
30	13	15	9.6	6.2	-	19	60	56	25	10	6.4	5.5
31	12	-	9.1	6.5	-	18	-	53	-	10	6.4	-
Total	359.3	373	422.5	197.2	285.5	265.6	1,008	1,918	849	443	246.9	179.5
Mean	11.6	12.4	13.6	6.36	9.84	8.57	33.6	61.9	28.3	14.3	7.96	5.98
Cfsm	1.30	1.39	1.53	0.715	1.11	0.963	3.78	6.96	3.18	1.61	0.894	0.672
In.	1.50	1.56	1.77	0.82	1.19	1.11	4.21	8.01	3.55	1.85	1.03	0.75
Ac-ft	713	740	838	391	566	527	2,000	3,800	1,680	879	490	356

Calendar year 1951: Max 82 Min 7 Mean 26.3 Cfsm 2.96 In. 40.09 Ac-ft 19,030
Water year 1951-52: Max 75 Min 5.1 Mean 17.9 Cfsm 2.01 In. 27.35 Ac-ft 12,980

Peak discharge (base, 80 cfs).--No peak above base.
* Discharge measurement made on this day.

White River below Tygh Valley, Oreg.

Location.--Lat 45°14'30", long. 121°05'30", in NW¼ sec. 8, T. 4 S., R. 14 E., on left bank 900 ft below Pacific Power & Light Co.'s plant at White River Falls and 4½ miles east of Tygh Valley.

Drainage area.--393 sq mi.

Records available.--October 1917 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 840 ft (by barometer). Prior to July 28, 1931, water-stage recorder at site 50 ft downstream at datum 0.31 ft higher.

Average discharge.--35 years, 425 cfs.

Extremes.--Maximum discharge during year, 2,410 cfs Feb. 4 (gage height, 5.18 ft); minimum, 118 cfs Sept. 29 (gage height, 1.04 ft); minimum daily, 125 cfs Sept. 25, 29.
1917-52: Maximum discharge, 13,300 cfs Jan. 6, 1923 (gage height, about 13.3 ft), from rating curve extended above 5,000 cfs; minimum, 10 cfs Dec. 11-14, 1919, Aug. 9, 1931; minimum daily, 71 cfs Aug. 31, 1941.

Remarks.--Records good. Diversions above station for irrigation. Some regulation at low flow by powerplant.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 26 to June 8)

1.1	125	3.0	770
1.5	185	4.0	1,440
2.0	331	5.1	2,340

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	214	230	725	270	1,580	426	616	980	640	386	166	148
2	280	227	645	246	1,540	402	598	*848	611	358	162	148
3	347	224	544	249	1,430	394	584	782	598	335	161	146
4	270	238	518	297	2,260	394	580	740	598	316	162	148
5	222	222	570	312	1,590	366	650	700	611	301	164	150
6	198	217	462	280	1,160	350	788	680	611	273	162	146
7	185	217	398	270	*920	343	956	685	562	263	158	146
8	180	212	362	257	776	335	908	700	530	246	158	144
9	176	210	323	254	715	358	836	700	518	240	160	150
10	174	220	323	260	670	386	824	730	502	232	158	148
11	*174	238	331	252	665	366	836	800	*470	222	155	*142
12	180	339	339	240	620	*350	842	842	446	212	154	142
13	189	350	339	238	570	343	890	1,260	414	207	152	142
14	222	301	316	235	552	339	914	1,180	426	203	152	138
15	267	*270	320	238	548	323	872	1,130	462	196	152	136
16	220	249	331	232	534	327	860	1,120	406	192	148	138
17	212	238	320	207	498	327	848	1,150	382	187	146	138
18	200	235	347	235	474	331	986	1,150	354	185	144	138
19	227	232	*358	235	462	320	1,260	1,210	354	183	143	138
20	354	232	343	232	430	312	1,230	1,280	350	181	142	138
21	327	235	347	230	422	301	1,140	1,260	354	181	142	136
22	350	230	830	227	390	293	1,080	1,040	347	181	142	129
23	630	224	552	224	402	312	1,040	974	320	181	148	130
24	486	217	426	222	386	462	1,050	956	308	181	146	131
25	382	217	390	222	386	630	1,210	944	293	*178	142	125
26	323	297	362	222	466	765	1,340	866	276	171	137	127
27	286	308	362	232	506	794	1,400	830	276	169	136	127
28	267	335	343	230	462	812	1,390	824	312	167	142	127
29	263	374	378	230	434	755	1,180	794	522	167	149	125
30	254	410	335	304	-	700	1,010	740	478	164	149	126
31	240	-	308	737	-	660	-	700	-	166	149	-
Total	8,299	7,748	12,847	8,119	21,848	13,576	28,718	28,595	13,331	6,824	4,681	4,147
Mean	268	258	414	262	753	438	957	922	444	220	151	138
Ac-ft	16,460	15,370	25,480	16,100	43,330	26,930	56,960	56,720	26,440	13,540	9,280	8,230

Calendar year 1951: Max 2,660 Min 132 Mean 625 Ac-ft 452,800
Water year 1951-52: Max 2,260 Min 125 Mean 434 Ac-ft 314,800

Peak discharge (base, 1,200 cfs).--Dec. 22 (3 a.m.) 1,320 cfs (3.84 ft); Feb. 1 (7 p.m.) 2,020 cfs (4.73 ft); Feb. 4 (7 p.m.) 2,410 cfs (5.18 ft); Apr. 19 (5 to 10 a.m.) 1,330 cfs (3.85 ft); Apr. 28 (4 a.m.) 1,450 cfs (4.21 ft); May 13 (8 a.m.) 1,380 cfs (4.12 ft).
* Discharge measurement made on this day.

5.04

Deschutes River at Moody, near Biggs, Oreg.

Location.--Lat 45°37'20", long. 120°54'05", in SE¼ sec. 26, T. 2 N., R. 15 E., on right bank at Moody, 1½ miles upstream from mouth and 5 miles southwest of Biggs.

Drainage area.--10,500 sq mi, approximately.

Records available.--October 1897 to December 1899, July 1906 to September 1952. Published as "near Moro" 1897-99.

Gage.--Water-stage recorder. Datum of gage is 167.43 ft above mean sea level, datum of 1929. October 1897 to December 1899, staff gage at site 10 miles upstream at different datum. July 1906 to July 1930, staff gage at site 300 ft downstream at datum 0.5 ft lower.

Average discharge.--47 years (1898-99, 1906-52), 5,771 cfs.

Extremes.--Maximum discharge during year, 15,000 cfs Mar. 28, Apr. 8 (gage height, 5.27 ft); minimum, 4,520 cfs Sept. 30 (gage height, 2.51 ft).
1897-99, 1906-52: Maximum discharge, 43,600 cfs Jan. 7, 1923 (gage height, 10.2 ft, site and datum then in use), from rating curve extended above 15,000 cfs; minimum, 3,380 cfs Sept. 16-19, 1931 (gage height, 2.06 ft).

Remarks.--Records excellent except those for periods of no gage-height, which are good. Many diversions in upper river basin for irrigation. Some winter and spring runoff stored in Crescent Lake and in Crane Prairie, Wickiup, and Ochoco Reservoirs.

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

Revisions.--W 754: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.4	4,210
3.0	6,030
4.0	9,530
5.2	14,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,840	5,670	6,130	5,700	9,720	6,260	11,500	8,500	6,690	7,270	4,610	4,810
2	5,020	5,730	6,760	5,440	10,400	6,100	10,500	8,000	6,590	7,100	4,610	4,750
3	5,540	6,060	6,760	5,290	9,530	5,930	10,500	7,680	6,490	6,930	4,720	4,780
4	5,700	6,130	6,720	5,350	11,500	6,000	11,000	7,300	6,460	6,790	4,810	4,780
5	5,350	6,130	6,930	5,510	11,300	5,930	12,000	7,100	6,690	6,690	4,840	4,870
6	5,200	6,060	6,590	5,600	9,460	5,860	13,000	6,860	6,960	6,560	4,840	4,900
7	5,170	6,000	6,360	5,600	8,650	6,100	13,000	6,720	6,960	6,360	4,840	4,840
8	*5,290	6,000	6,000	5,510	*7,960	6,130	14,500	6,760	6,690	5,860	4,840	4,870
9	5,260	5,930	5,770	5,480	7,540	6,390	12,500	6,830	6,620	5,570	4,870	4,960
10	5,140	5,600	5,730	5,570	7,270	6,660	12,000	7,000	6,620	5,410	4,930	*5,050
11	5,110	5,640	5,800	5,600	7,130	*6,790	11,500	7,100	*6,590	5,350	4,960	5,020
12	5,050	5,930	5,830	5,540	7,030	7,130	11,000	7,100	6,430	5,320	4,990	5,050
13	5,110	6,230	5,860	5,480	6,790	7,060	11,000	7,440	6,430	6,260	4,990	5,080
14	5,080	6,060	5,800	5,480	6,620	6,890	11,000	7,650	6,430	5,140	4,990	5,080
15	5,320	*5,930	5,770	5,480	6,620	6,760	11,000	7,480	6,620	5,050	5,020	5,080
16	5,380	5,770	5,770	5,440	6,660	6,720	10,500	7,340	6,560	5,020	5,020	5,050
17	5,510	5,730	5,770	5,350	6,590	6,720	10,000	7,300	6,460	5,260	5,020	5,110
18	5,570	5,730	*5,700	5,260	6,460	6,830	10,500	7,300	6,430	4,900	5,020	5,110
19	5,600	5,700	5,930	5,380	6,390	7,100	11,000	7,300	6,390	4,810	5,050	4,990
20	5,800	5,670	5,770	5,380	6,290	6,890	11,000	7,480	6,390	4,750	5,080	4,960
21	5,930	5,640	5,670	5,350	6,160	6,690	10,000	7,580	6,430	4,750	5,080	4,870
22	5,830	5,570	6,430	5,410	6,060	6,520	9,500	7,370	6,290	4,750	6,080	4,780
23	6,100	5,510	6,330	5,510	6,130	6,490	9,000	7,170	6,230	*4,750	5,110	4,720
24	6,790	5,440	5,730	5,440	6,330	6,720	8,500	7,130	6,230	4,690	5,140	4,720
25	6,330	5,380	5,770	5,380	6,390	7,400	8,500	7,130	6,290	4,660	5,170	4,690
26	6,100	5,480	5,770	5,320	6,460	9,380	9,000	7,270	6,160	4,640	5,170	4,660
27	5,960	5,640	5,770	5,260	6,660	11,900	9,500	7,270	6,130	4,610	5,110	4,660
28	5,900	5,640	5,770	5,260	6,560	*14,400	9,500	7,170	6,280	4,640	4,930	4,640
29	5,900	5,800	5,800	5,320	6,330	14,000	9,000	7,100	6,720	4,610	4,900	4,580
30	5,800	5,730	5,930	5,480	-	13,000	*8,860	7,060	7,400	4,610	4,900	4,520
31	5,730	-	5,800	7,060	-	12,500	-	6,830	-	4,610	4,870	-
Total	172,410	173,530	186,520	170,230	216,990	239,250	320,360	225,320	195,640	166,720	153,510	145,980
Mean	5,562	5,784	6,017	5,491	7,482	7,718	10,680	7,268	6,521	5,378	4,952	4,866
Ac-ft	342,000	133,200	370,000	337,600	430,400	474,500	635,400	446,900	388,000	330,700	304,500	289,500

Calendar year 1951: Max 19,000 Min 4,410 Mean 7,144 Ac-ft 5,172,000
Water year 1951-52: Max 14,500 Min 4,520 Mean 6,466 Ac-ft 4,694,000

* Discharge measurement made on this day.

Note.--No gage-height record Mar. 29 to Apr. 29, May 1, 2; discharge estimated on basis of records for station at Madras combined with records for White River below Tygh Valley and Warm Springs River near Warm Springs.

Columbia River near The Dalles, Oreg.

Location.--Lat 45°39'00", long. 120°58'00", in NE¼ sec. 20, T. 2 N., R. 15 E., on left bank 300 ft upstream from staff gage in entrance to Celilo Canal, just upstream from Celilo Falls, 3 miles downstream from Deschutes River, 11 miles east of The Dalles, and at mile 201.

Drainage area.--237,000 sq mi, approximately.

Records available.--June 1878 to September 1952. Prior to October 1936 published as "at The Dalles." Maximum stage for each year in period 1858 to 1877 from reading of gage at Lower Cascades Landing in Water-Supply Paper 370.

Gage.--Water-stage recorder. Datum of gage is 0.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1931, staff gage at The Dalles, supplemented for a few periods by gage-height records at Umatilla and Cascade locks; datum of gage at The Dalles was 46.86 ft higher than present datum. Oct. 1, 1931, to May 1, 1935, staff gage in entrance to Celilo Canal 300 ft downstream from present site at datum 37.59 ft higher.

Average discharge.--74 years, 194,900 cfs.

Extremes.--Maximum discharge during year, 561,000 cfs May 28 (gage height, 143.42 ft); minimum, 82,800 cfs Oct. 3 (gage height, 129.29 ft).

1858-1952: Maximum discharge, 1,240,000 cfs June 6, 1894 (gage height, 106.5 ft on gage at The Dalles, 160.1 ft at present site); minimum observed, 35,000 cfs Jan. 12, 1937 (gage height, 126.0 ft).

Revisions.--The maximum discharge for water year 1876 has been revised to 1,030,000 cfs, superseding figure published in Water-Supply Paper 370.

Remarks.--Records excellent. Some regulation by Franklin D. Roosevelt Lake above Grand Coulee Dam and by reservoirs in Kootenai, Flathead, Pend Oreille, Spokane, Chelan, Yakima, and Snake River basins. Records of chemical analyses and water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Cooperation.--Recorder inspected and gages read by Corps of Engineers.

Revisions (water years).--W 370: 1878-93, 1895-1910. W 534: 1920(m). W 1094: 1894. Revised figures of discharge, in cubic feet per second, for a few days in water years 1886, 1888, 1899, and 1909, superseding figures published in Water-Supply Paper 370 and earlier reports, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1886		1888-Con.		1899-Con.	
Jan. 26	90,000	Jan. 31	140,000	Feb. 17	76,000
27	100,000			18	80,000
28	110,000	1899		19	100,000
29	120,000	Feb. 4	105,000		
30	140,000	5	100,000	1909	
		10	80,000	Jan. 20	100,000
1888		11	80,000	21	110,000
Jan. 26	70,000	12	78,000	22	110,000
27	75,000	13	78,000	23	110,000
28	85,000	14	76,000	24	100,000
29	95,000	15	76,000	25	92,000
30	115,000	16	76,000	26	85,000
				27	80,000

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
January 1886.....	159,000	64,400	92,400	0.390	0.45	5,680,000
Water year 1885-86.....	673,000	64,400	210,000	.886	12.03	152,000,000
Calendar year 1886.....	673,000	62,000	202,000	.852	11.57	146,000,000
January 1888.....	140,000	49,400	69,700	.294	.34	4,290,000
Water year 1887-88.....	564,000	49,400	201,000	.848	11.56	146,000,000
Calendar year 1888.....	564,000	49,400	199,000	.840	11.42	144,000,000
February 1899.....	130,000	76,000	98,000	.414	.43	5,440,000
Water year 1898-99.....	787,000	58,000	234,000	.987	13.42	170,000,000
Calendar year 1899.....	787,000	71,400	249,000	1.05	14.28	181,000,000
January 1909.....	110,000	63,400	79,300	.335	.39	4,880,000
Water year 1908-09.....	675,000	63,400	190,000	.802	10.87	137,000,000
Calendar year 1909.....	675,000	63,400	199,000	.840	11.42	144,000,000

Columbia River near The Dalles, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

129	76,500	138	357,000
130	99,000	140	431,000
132	151,000	142	507,000
134	213,000	144	583,000
136	283,000		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103,000	119,000	114,000	114,000	145,000	128,000	209,000	347,000	502,000	337,000	177,000	116,000
2	97,600	119,000	116,000	108,000	143,000	132,000	199,000	325,000	488,000	342,000	176,000	107,000
3	87,900	121,000	121,000	112,000	144,000	130,000	193,000	310,000	478,000	348,000	171,000	98,500
4	111,000	120,000	133,000	109,000	145,000	126,000	188,000	314,000	477,000	344,000	164,000	93,600
5	126,000	117,000	138,000	114,000	148,000	122,000	188,000	341,000	481,000	339,000	166,000	102,000
6	131,000	114,000	143,000	122,000	150,000	125,000	196,000	358,000	487,000	336,000	164,000	107,000
7	138,000	110,000	138,000	121,000	150,000	129,000	214,000	377,000	478,000	325,000	166,000	104,000
8	137,000	113,000	129,000	118,000	146,000	129,000	236,000	392,000	472,000	320,000	161,000	101,000
9	124,000	118,000	125,000	115,000	138,000	128,000	257,000	411,000	461,000	314,000	152,000	95,000
10	113,000	115,000	122,000	119,000	136,000	125,000	252,000	444,000	454,000	303,000	153,000	93,200
11	115,000	115,000	112,000	120,000	134,000	131,000	238,000	452,000	446,000	292,000	156,000	95,400
12	112,000	115,000	105,000	119,000	128,000	132,000	233,000	451,000	440,000	287,000	154,000	97,100
13	114,000	111,000	113,000	117,000	124,000	137,000	232,000	455,000	431,000	279,000	144,000	97,600
14	117,000	105,000	119,000	118,000	125,000	138,000	231,000	465,000	431,000	274,000	137,000	98,800
15	123,000	109,000	119,000	115,000	129,000	132,000	239,000	478,000	419,000	266,000	134,000	96,100
16	120,000	116,000	115,000	114,000	126,000	141,000	253,000	508,000	406,000	259,000	133,000	92,500
17	121,000	117,000	111,000	123,000	124,000	134,000	258,000	518,000	398,000	254,000	132,000	88,800
18	125,000	117,000	107,000	126,000	124,000	133,000	260,000	504,000	387,000	247,000	131,000	92,000
19	122,000	116,000	101,000	125,000	121,000	135,000	269,000	496,000	370,000	240,000	131,000	96,100
20	122,000	107,000	107,000	123,000	116,000	139,000	285,000	496,000	357,000	236,000	128,000	95,900
21	124,000	97,800	115,000	122,000	123,000	142,000	299,000	523,000	350,000	231,000	129,000	94,500
22	127,000	105,000	117,000	118,000	131,000	143,000	289,000	550,000	343,000	223,000	129,000	93,800
23	135,000	112,000	119,000	112,000	125,000	142,000	276,000	553,000	338,000	220,000	128,000	92,500
24	133,000	112,000	118,000	120,000	121,000	142,000	272,000	542,000	337,000	220,000	128,000	88,100
25	135,000	104,000	110,000	123,000	124,000	143,000	270,000	535,000	331,000	212,000	125,000	89,200
26	139,000	104,000	100,000	123,000	123,000	170,000	280,000	534,000	322,000	201,000	123,000	91,100
27	136,000	105,000	97,600	122,000	115,000	203,000	300,000	550,000	321,000	206,000	121,000	92,900
28	128,000	100,000	92,000	124,000	121,000	217,000	325,000	557,000	324,000	198,000	121,000	91,500
29	123,000	106,000	95,900	126,000	126,000	226,000	346,000	547,000	326,000	189,000	125,000	89,900
30	119,000	110,000	111,000	119,000	-	227,000	357,000	535,000	331,000	191,000	126,000	88,800
31	117,000	-	117,000	135,000	-	220,000	-	521,000	-	185,000	120,000	-
Total	‡3,775.5	‡3,349.8	‡3,580.5	‡3,696	‡3,805	‡4,601	‡7,644	‡14,389	‡12,186	‡8,218	‡4,405	‡2,879.9
Mean	121,800	111,700	115,500	119,200	131,200	148,400	254,800	464,200	406,200	265,100	142,100	96,000
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	‡7,489	‡6,644	‡7,102	‡7,331	‡7,547	‡9,126	‡15,160	‡28,540	‡24,170	‡16,300	‡8,737	‡5,712

Calendar year 1951: Max 597,000 Min 87,900 Mean 223,400 Cfsm 0.943 In. 12.80 Ac-ft 161,700,000
Water year 1951-52: Max 557,000 Min 87,900 Mean 198,200 Cfsm 0.836 In. 11.38 Ac-ft 143,900,000

‡ Expressed in thousands.

Fifteenmile Creek near Wrentham, Oreg.

Location.--Lat 45°30'40", long. 121°02'20", in sec. 3, T. 1 S., R. 14 E., on left bank 0.1 mile below Dry Creek, 3 miles southwest of Wrentham, and 9½ miles southeast of The Dalles.

Drainage area.--171 sq mi.

Records available.--October 1946 to September 1952 in reports of Geological Survey. December 1926 to May 1927 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (by barometer).

Average discharge.--6 years (1946-52), 62.9 cfs.

Extremes.--Maximum discharge during year, about 1,700 cfs Feb. 1 (occurred during ice jam); maximum gage height, 7.42 ft Feb. 1 (ice jam); minimum discharge, 1.2 cfs Aug. 14.
1946-52: Maximum discharge, 3,000 cfs Feb. 10, 1949, by slope-area determination; maximum gage height, 8.42 ft Feb. 10, 1949 (ice jam); minimum discharge, 0.8 cfs Aug. 22, 1947.

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair, and those for periods of ice effect, which are poor. The town of Dufur diverts water from creek about 5 miles above station. Several small diversions above station for irrigation of about 3,700 acres.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a9	10	40	b34	b900	90	84	*72	68	36	4.0	4.2
2	a9	10	42	b32	534	82	79	66	64	31	3.3	4.8
3	a11	11	34	b30	447	82	74	60	58	28	4.0	4.8
4	a12	11	33	b29	636	82	69	54	55	25	4.2	4.5
5	a11	11	45	b29	348	76	69	51	60	23	4.2	5.0
6	a10	11	38	b29	243	72	77	50	64	23	3.5	5.0
7	a10	11	29	b32	*218	68	87	47	61	20	2.8	5.5
8	a10	11	26	b34	170	66	84	45	57	17	3.0	6.0
9	*10	10	27	b34	152	74	79	44	57	16	2.6	6.9
10	10	12	26	b32	143	76	74	44	*55	15	2.8	6.9
11	10	15	26	b30	132	74	69	47	54	13	3.8	*5.8
12	10	21	27	30	118	*72	68	52	51	11	2.8	5.5
13	10	18	27	28	101	69	69	76	47	11	2.0	5.5
14	11	*16	20	28	99	68	69	79	43	10	1.4	5.8
15	12	14	26	b25	*92	64	68	76	44	8.8	1.6	5.8
16	12	14	26	b23	90	64	66	76	41	8.4	2.8	5.8
17	11	12	24	b23	79	66	66	76	38	7.9	2.0	5.8
18	10	14	*45	b25	72	66	68	76	35	9.3	3.0	5.8
19	12	13	34	31	74	64	79	84	34	9.8	3.0	5.5
20	17	13	28	31	58	58	79	92	34	9.3	4.0	5.5
21	15	13	38	27	66	52	76	88	34	9.3	5.0	5.2
22	14	12	76	27	60	51	74	82	34	7.9	4.5	5.5
23	18	12	56	b27	63	54	69	80	32	6.9	4.5	5.5
24	18	12	40	b25	58	63	68	79	31	6.9	4.8	5.2
25	14	12	b38	b25	60	82	71	80	29	*6.9	5.8	3.5
26	12	17	b36	b27	84	114	79	80	28	5.8	5.0	2.6
27	12	19	b32	b27	106	118	85	79	27	5.2	5.0	3.5
28	12	19	b36	b30	106	118	88	79	29	4.5	4.2	3.8
29	12	21	b44	41	99	112	85	80	42	4.2	3.5	3.5
30	12	23	b40	226	-	103	80	77	44	4.0	3.8	3.5
31	11	-	b36	860	-	92	-	72	-	4.0	4.0	-
Total	367	418	1,095	1,931	5,408	2,392	2,252	2,143	1,350	398.1	110.9	152.2
Mean	11.8	13.9	35.3	62.3	186	77.2	75.1	69.1	45.0	12.8	3.58	5.07
Ac-ft	728	829	2,170	3,830	10,730	4,740	4,470	4,250	2,680	789	220	302

Calendar year 1951: Max 755 Min 3.2 Mean 84.3 Ac-ft 61,050
Water year 1951-52: Max 900 Min 1.4 Mean 49.2 Ac-ft 35,740

Peak discharge (base, 270 cfs).--Feb. 1 (5 a.m.) about 1,700 cfs.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Fivemile Creek near The Dalles and Eightmile Creek near Boyd.
b Stage-discharge relation affected by ice.
Note.--Shifting-control method used Oct. 15 to Dec. 13, Feb. 2 to May 31.

Eightmile Creek near Boyd, Oreg.

Location.--Lat 45°31'10", long. 121°06'40", in SE¼ sec. 31, T. 1 N., R. 14 E., on left bank at upstream side of bridge 2½ miles northwest of Boyd and 7 miles southeast of The Dalles.

Drainage area.--56 sq mi, approximately.

Records available.--October 1946 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 802.17 ft above mean sea level, datum of 1929 (Oregon State Highway Department benchmark).

Average discharge.--6 years, 24.5 cfs.

Extremes.--Maximum discharge during year, 149 cfs Feb. 4 (gage height, 4.13 ft); minimum, 1.6 cfs Aug. 18.
1946-52: Maximum discharge, 385 cfs Feb. 10, 1949 (gage height, 7.11 ft); minimum, 0.8 cfs Sept. 24, 1947.

Remarks.--Records good except those for period of ice effect or no gage-height record, which are fair. No regulation. Several small diversions above gage for irrigation of about 1,300 acres.

Rating tables, water year 1951-52, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30	
1.7	4.9	1.4	1.8
1.9	6.8	1.7	4.5
2.1	10	2.0	8.1
2.3	18	2.2	14
2.5	29	2.5	29
		3.0	66
		4.0	140

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	6.5	14	6.5	a40	31	52	*31	25	12	3.5	2.8
2	6.0	6.4	14	6	a55	29	51	29	24	11	3.6	2.8
3	6.5	6.6	12	6	a65	28	44	27	22	9.6	3.5	2.8
4	6.7	6.8	12	6	a120	27	43	27	22	8.9	3.2	2.4
5	6.0	6.8	14	6.5	a85	25	43	25	22	8.7	3.4	3.0
6	5.8	6.7	11	6.5	a65	24	47	24	22	9.2	3.0	3.1
7	5.6	6.7	8.9	7	*56	22	50	24	20	8.5	3.3	3.2
8	5.6	6.8	8.1	7.5	52	22	49	24	20	6.8	3.5	3.6
9	*5.6	6.8	8.3	7.5	49	28	44	23	20	6.6	3.3	3.8
10	5.5	7.1	10	7.5	47	31	42	22	*19	6.1	3.3	3.7
11	5.6	8.0	9.6	7.5	47	30	40	22	21	5.6	3.1	*3.4
12	5.7	12	8.9	7	44	*27	40	22	20	6.0	2.9	3.3
13	5.8	10	8.1	7	39	25	40	27	18	5.7	2.6	3.3
14	6.0	*8.5	7.1	6.5	37	24	40	28	19	5.2	2.6	3.3
15	6.6	8.1	8.3	6.5	35	24	39	29	22	5.0	2.6	3.1
16	6.4	8.0	8.1	6	34	26	37	29	18	5.0	2.7	3.3
17	6.1	7.7	7.7	6	30	28	35	30	15	4.8	2.9	3.2
18	6.3	8.0	*8.5	6.5	26	27	37	30	14	4.7	2.4	3.0
19	6.5	7.7	8.9	6.5	27	27	38	32	13	4.7	2.6	3.0
20	7.1	7.8	8.3	7	22	25	37	33	13	4.7	2.7	3.0
21	7.3	7.8	8.1	7	25	24	35	33	13	4.7	2.8	3.0
22	6.9	7.7	13	6.5	22	23	34	32	13	4.8	2.9	3.1
23	8.3	7.4	12	6.5	24	25	31	31	12	4.4	3.0	2.7
24	8.3	7.3	8.9	6.5	22	32	30	30	10	*4.4	3.3	2.9
25	7.2	7.3	8.5	6.5	22	49	30	29	9.8	4.5	3.7	2.9
26	6.8	8.7	8	6.5	27	70	32	28	9.4	4.1	3.4	2.7
27	6.7	9.4	8	6.5	33	76	34	28	9.8	4.1	3.4	2.9
28	6.6	8.9	8.5	7	37	78	35	28	11	4.0	3.5	2.8
29	6.6	9.4	9	a9	35	73	33	28	14	3.4	3.3	2.8
30	6.5	9.8	8.5	a15	-	68	32	27	15	3.5	3.0	2.9
31	6.5	-	7	a25	-	61	-	27	-	3.2	3.1	-
Total	199.1	236.7	295.3	235.5	1,222	1,109	1,174	859	506.0	183.9	96.1	91.8
Mean	6.42	7.89	9.53	7.60	42.1	35.8	39.1	27.7	16.9	5.93	3.10	3.06
Ac-ft	395	469	586	467	2,420	2,200	2,330	1,700	1,000	365	191	182

Calendar year 1951: Max 260 Min 3.8 Mean 34.1 Ac-ft 24,720
Water year 1951-52: Max 120 Min 2.4 Mean 17.0 Ac-ft 12,300

4.13

Peak discharge (base, 60 cfs).--Feb. 4 (time unknown) 149 cfs (4.13 ft); Mar. 28 (1 p.m.) 83 cfs (3.21 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Fivemile Creek near The Dalles and Fifteenmile Creek near Wrentham.

Note.--Stage-discharge relation affected by ice Dec. 25 to Jan. 28.

Fivemile Creek near The Dalles, Oreg.

Location.--Lat 45°32'30", long. 121°08'30", in W½ of sec. 25, T. 1 N., R. 13 E., on left bank 4½ miles southeast of The Dalles.

Drainage area.--32.4 sq mi.

Records available.--October 1948 to September 1952 in reports of Geological Survey. December 1925 to May 1926, December 1927 to May 1928, and February 1930 to May 1931 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 740 ft (by barometer). December 1925 to May 1926 staff gage at approximately present site at different datum. December 1927 to May 1931 at site half a mile upstream at different datum.

Extremes.--Maximum discharge during year, 133 cfs Feb. 4 (gage height, 2.62 ft); no flow July 28 to Aug. 16.
1925-26, 1927-28, 1930-31, 1948-52: Maximum discharge recorded, 315 cfs Feb. 10, 1949 (gage height, 3.66 ft), from rating curve extended above 130 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those for periods of ice effect and those below 3 cfs, which are fair. No regulation. Diversions for irrigation of about 50 acres above station.

Rating table, water year 1951-52, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.5	0	1.1	7.1
.6	.2	1.4	18
.7	.6	1.7	37
.8	1.6	2.0	62
.9	2.9	2.5	118

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	0.7	4.0	b3.2	21	19	43	18	9.1	2.4	0	0.2
2	.6	.7	6.2	b3.0	38	18	39	18	7.8	1.6	0	.1
3	.6	.9	5.5	b2.8	45	17	36	16	6.9	1.0	0	.2
4	.5	.9	5.3	b2.8	79	17	34	15	6.0	.6	0	.2
5	.5	.8	6.0	2.9	70	15	34	14	5.5	.6	0	.4
6	.5	.9	5.5	2.9	55	14	40	13	5.0	.6	0	.4
7	.5	.9	4.0	b2.8	46	13	49	13	4.6	.4	0	.4
8	.5	.9	3.5	b2.7	*39	13	47	13	3.7	.6	0	.5
9	*.5	.9	3.1	2.6	34	15	42	12	3.1	.5	0	.5
10	.5	1.0	2.8	2.8	32	18	36	12	*2.9	.4	0	*.4
11	.5	1.4	2.8	2.8	31	18	31	12	2.8	.3	0	.3
12	.6	2.8	2.6	2.6	30	*18	29	14	2.7	.3	0	.2
13	.6	3.5	2.6	2.6	26	17	29	17	2.6	.3	0	.3
14	.6	*2.8	2.6	2.6	24	16	29	18	2.5	.2	0	.3
15	.6	2.5	2.5	2.5	23	16	28	18	3.1	.1	0	.2
16	.6	2.1	2.6	b2.4	22	17	26	18	2.5	.1	0	.2
17	.6	2.0	2.6	b2.3	20	18	25	17	2.0	.2	.2	.2
18	.6	2.0	*2.9	b2.5	18	18	25	17	1.6	.2	.1	.2
19	.7	2.0	3.5	2.4	17	18	28	17	1.3	.1	.2	.2
20	.7	1.9	3.8	2.5	15	17	28	18	1.3	.1	.2	.2
21	.6	1.7	3.8	2.5	15	16	26	17	1.6	.2	.2	.2
22	.8	1.7	6.2	2.5	14	15	23	16	1.3	.3	.2	.2
23	.9	1.6	9.5	2.5	14	16	21	14	1.2	.2	.4	.2
24	.8	1.6	6.6	2.4	13	20	20	14	1.1	*.2	.4	.2
25	.7	1.7	b4.8	b2.4	13	36	20	13	1.0	.1	.5	.2
26	.6	2.0	b4.2	2.5	15	64	22	13	.9	.1	.4	.2
27	.7	2.0	b3.9	2.5	18	72	23	12	1.1	.1	.4	.3
28	.7	2.1	b4.0	2.5	21	71	23	11	1.7	0	.3	.3
29	.6	2.5	b4.4	2.9	21	62	22	10	2.5	0	.2	.4
30	.7	2.9	4.2	3.7	-	57	*20	10	3.3	0	.2	.3
31	.7	-	3.8	7.1	-	50	-	9.1	-	0	.2	-
Total	19.4	51.4	129.8	87.2	829	811	898	449.1	92.7	11.8	4.1	8.1
Mean	0.63	1.71	4.19	2.81	28.6	26.2	29.9	14.5	3.09	0.38	0.13	0.27
Ac-ft	38	102	257	173	1,640	1,610	1,780	891	184	23	8.1	16

Calendar year 1951: Max 204 Min 0 Mean 23.2 Ac-ft 16,800
Water year 1951-52: Max 79 Min 0 Mean 9.27 Ac-ft 6,720

Peak discharge (base, 130 cfs).--Feb. 4 (5 p.m.) 133 cfs (2.62 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Klickitat River above West Fork, near Glenwood, Wash.

Location.--Lat 46°15'40", long. 121°14'30", in S½ sec. 18, T. 9 N., R. 13 E., on right bank half a mile upstream from Swamp Creek, 1½ miles upstream from West Fork, and 17 miles north of Glenwood.

Drainage area.--151 sq mi.

Records available.--November 1944 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 2,720 ft (from topographic map).

Average discharge.--7 years (1945-52), 369 cfs.

Extremes.--Maximum discharge during year, 1,560 cfs Apr. 26 (gage height, 3.18 ft); maximum gage height, 3.92 ft Jan. 6 (backwater from ice); minimum discharge, 84 cfs Sept. 25-27 (gage height, 1.12 ft).
1944-52: Maximum discharge, 3,280 cfs May 27, 1948 (gage height, 4.28 ft); minimum, 48 cfs Nov. 14, 15, 1945 (gage height, 0.98 ft), but may have been less during period of ice effect.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.1	79	2.1	465
1.3	129	2.4	680
1.5	193	2.7	960
1.8	311	3.1	1,450

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	183	414	150	160	132	257	832	774	362	147	95
2	234	183	339	135	160	132	253	756	756	343	141	95
3	265	204	298	140	160	132	250	706	784	334	138	97
4	204	230	265	145	190	132	253	672	890	343	132	97
5	169	212	253	150	180	126	307	640	930	325	129	93
6	159	204	230	140	170	126	408	616	841	294	129	95
7	150	197	210	135	165	126	497	608	756	273	126	95
8	144	193	200	135	160	126	471	664	697	273	126	97
9	135	186	190	135	160	129	454	714	697	286	132	97
10	129	212	180	130	160	129	459	794	656	286	150	95
11	126	230	180	130	160	129	497	940	586	286	166	93
12	129	219	180	125	150	126	529	1,040	484	277	144	93
13	141	215	180	120	145	126	557	1,240	431	261	132	90
14	169	197	180	130	155	121	572	1,180	414	246	129	90
15	176	183	180	130	150	118	572	1,070	398	238	124	88
16	*166	173	180	125	150	118	564	1,150	367	*230	*121	90
17	153	169	180	120	145	124	608	1,310	362	215	118	90
18	153	173	186	130	140	124	748	1,350	377	208	116	88
19	223	173	173	130	150	121	860	1,450	398	197	116	88
20	348	166	179	130	145	121	765	1,410	414	193	116	88
21	261	*156	179	125	140	116	740	1,230	398	190	113	86
22	238	150	169	125	145	116	748	1,120	372	183	110	86
23	290	141	160	125	150	129	765	1,090	343	176	110	86
24	246	138	150	125	145	166	841	1,110	348	176	107	*86
25	215	153	160	125	145	226	1,090	1,180	352	173	107	84
26	204	173	165	125	*141	282	1,420	1,140	367	169	107	84
27	197	183	165	125	141	*298	1,440	*1,090	377	166	107	86
28	200	179	170	125	135	325	1,270	1,120	388	162	105	86
29	223	179	175	120	135	311	1,040	1,070	393	156	105	86
30	219	215	160	130	-	294	930	900	388	153	102	86
31	204	-	160	150	-	277	-	832	-	150	97	-
Total	6,036	5,569	6,190	4,065	4,432	5,058	20,165	31,024	15,738	7,324	3,802	2,710
Mean	195	186	200	131	153	163	672	1,001	525	236	123	90.3
Cfsm	1.29	1.23	1.32	0.868	1.01	1.08	4.45	6.63	3.48	1.56	0.815	0.598
In.	1.49	1.37	1.52	1.00	1.09	1.25	4.97	7.64	3.88	1.80	0.94	0.67
Ac-ft	11,970	11,050	12,280	8,060	8,790	10,030	40,000	61,540	31,220	14,530	7,540	5,380

Calendar year 1951: Max 2,340 Min 105 Mean 422 Cfsm 2.79 In. 37.94 Ac-ft 305,600
Water year 1951-52: Max 1,450 Min 84 Mean 306 Cfsm 2.03 In. 27.62 Ac-ft 222,400

Peak discharge (base, 700 cfs).--Apr. 18 (10:30 p.m.) 920 cfs (2.66 ft); Apr. 26 (8 p.m.) 1,560 cfs (3.18 ft); May 13 (9 to 10 p.m.) 1,320 cfs (3.00 ft); May 19 (1 a.m.) 1,490 cfs (3.13 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 7-17, Dec. 23 to Feb. 25 (no gage-height record Jan. 17 to Feb. 25; discharge estimated on basis of records for stations on nearby streams).
Shifting-control method used June 5 to Aug. 11.

Klickitat River near Glenwood, Wash.

Location.--Lat 46°05'30", long. 121°15'30", in SE¼ sec. 14, T. 7 N., R. 12 E., on left bank half a mile downstream from Dairy Creek, 5 miles north of Glenwood, and 7 miles upstream from Trout Creek.

Drainage area.--360 sq mi.

Records available.--October 1909 to September 1952 (1920-28 incomplete).

Gage.--Water-stage recorder. Datum of gage is about 1,703 ft above mean sea level, datum of 1929. Prior to July 19, 1910, staff gage and July 19 to Dec. 16, 1910, water-stage recorder, at site 1 mile upstream at different datum. Dec. 17, 1910, to Nov. 6, 1928, water-stage recorder at site 50 ft downstream at datum 1 ft higher and Nov. 7, 1928, to Sept. 30, 1934, at present site at datum 1 ft higher.

Average discharge.--35 years (1909-20, 1928-52), 827 cfs.

Extremes.--Maximum discharge during year, 2,810 cfs May 19 (gage height, 6.03 ft); minimum, 346 cfs Sept. 30.
1909-52: Maximum discharge, 9,870 cfs Dec. 22, 1933 (gage height, 7.9 ft, present datum), from rating curve extended above 2,000 cfs; minimum, 204 cfs Nov. 28, 1931.

Remarks.--Records good except those for periods of no gage-height record, which are fair. All low-water flow of Hellroaring Creek, a tributary of Big Muddy Creek, is diverted for irrigation. No regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 18				Apr. 19 to Sept. 30			
3.3	370	4.3	1,040	3.3	310	4.6	1,270
3.5	490	4.6	1,280	3.5	430	5.0	1,650
3.7	615	5.0	1,650	3.7	560	5.5	2,180
4.0	820			4.0	770	6.0	2,770
				4.3	1,010		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	764	563	1,260	460	628	490	799	*1,980	1,800	1,030	574	394
2	848	563	1,020	430	634	490	792	1,840	1,780	986	567	400
3	799	648	932	454	641	490	778	1,760	1,820	970	567	418
4	687	680	869	508	862	484	799	1,690	1,960	970	581	412
5	628	634	827	538	785	472	904	1,640	2,060	930	574	400
6	608	615	764	520	715	472	1,090	1,580	1,950	882	546	394
7	589	602	680	496	667	460	1,240	1,570	1,840	850	532	388
8	563	589	a600	484	634	466	1,200	1,630	1,740	850	532	388
9	544	596	a550	490	622	472	1,160	1,700	1,730	866	560	388
10	538	674	a520	478	615	484	1,150	1,840	1,690	882	553	382
11	532	722	a510	472	622	472	1,200	2,040	1,540	898	574	382
12	532	729	a500	454	608	472	1,240	2,180	1,370	882	525	376
13	538	701	a500	430	576	472	1,310	2,480	1,260	858	539	370
14	608	654	a500	460	596	460	1,330	2,450	1,190	826	518	364
15	634	615	a500	460	582	460	1,340	2,270	1,170	*818	497	364
16	*602	576	a500	448	570	460	1,360	2,400	1,120	786	*478	358
17	582	563	a500	424	556	472	1,400	2,570	1,110	749	472	364
18	582	576	a560	442	520	472	1,590	2,650	1,110	728	466	370
19	722	570	*556	448	563	466	1,830	2,730	1,120	700	460	382
20	897	563	570	448	538	448	1,710	2,670	1,130	686	454	382
21	715	550	589	436	514	442	1,630	2,550	1,080	658	442	376
22	694	*538	596	430	520	448	1,670	2,410	1,050	630	448	376
23	862	514	526	436	526	478	1,680	2,370	1,010	651	448	382
24	750	502	454	436	520	582	1,780	2,400	994	637	430	382
25	660	532	508	430	520	715	2,070	2,460	994	630	412	382
26	634	615	526	436	*514	841	2,540	2,310	1,000	630	406	376
27	608	641	526	436	508	*883	2,700	*2,270	1,010	616	400	364
28	602	654	532	424	496	925	2,590	2,280	1,030	609	400	358
29	628	660	550	430	496	904	2,270	2,220	1,070	595	406	352
30	628	764	514	576	-	876	2,140	1,990	1,080	581	400	346
31	602	-	496	596	-	834	-	1,880	-	609	400	-
Total	20,180	18,403	19,035	14,410	17,148	17,362	45,292	66,810	40,808	23,993	15,161	11,370
Mean	651	613	614	465	591	560	1,510	2,155	1,360	774	489	379
Cfsm	1.81	1.70	1.71	1.29	1.64	1.56	4.19	5.99	3.78	2.15	1.36	1.05
In.	2.08	1.90	1.97	1.49	1.77	1.79	4.68	6.90	4.22	2.48	1.57	1.17
Ac-ft	40,030	36,500	37,760	28,580	34,010	34,440	89,840	132,500	80,940	47,590	30,070	22,550

Calendar year 1951: Max 3,690 Min 406 Mean 1,067 Cfsm 2.96 In. 40.25 Ac-ft 772,600
Water year 1951-52: Max 2,730 Min 346 Mean 847 Cfsm 2.35 In. 32.02 Ac-ft 614,800

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station near Pitt.

Little Klickitat River near Wahkiacus, Wash.

Location.--Lat 45°50'30", long. 121°03'20", in SE¼ sec. 9, T. 4 N., R. 14 E., on right bank half a mile downstream from Bowman Creek, three-quarters of a mile upstream from mouth, and 2 miles northeast of Wahkiacus.

Drainage area.--280 sq mi, approximately (revised).

Records available.--November 1944 to September 1948, October 1950 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (by altimeter). Prior to Dec. 29, 1950, staff gage and crest-stage indicator at same site and datum.

Average discharge.--5 years (1945-48, 1950-52), 208 cfs.

Extremes.--Maximum discharge during year, 4,450 cfs Feb. 4 (gage height, 8.0 ft), from rating curve extended above 2,600 cfs; minimum, 29 cfs Aug. 29, Sept. 3, 4, 5, (gage height, 2.43 ft).
1944-48, 1950-52: Maximum discharge, that of Feb. 4, 1952; maximum gage height, 9.4 ft Jan. 7, 1948, from high-water mark; minimum discharge observed, 17 cfs Aug. 3-6, 11, 16-27, Aug. 29 to Sept. 3, 1945, Aug. 30, 1947; minimum gage height observed, 1.24 ft Aug. 25, 26, 27, 1945.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 17		Dec. 18 to Sept. 30			
2.6	44	2.4	26	4.5	650
2.8	72	2.7	62	5.0	970
3.0	109	3.0	110	5.5	1,370
3.5	239	3.5	225	6.0	1,850
4.0	430	4.0	405	7.1	3,150
4.5	681				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	77	58	438	108	949	280	304	*243	121	77	33	31
2	74	58	286	108	1,370	262	300	225	116	72	34	30
3	60	60	436	103	1,270	290	286	212	112	68	33	30
4	53	60	522	107	3,060	297	290	198	110	62	32	30
5	50	58	546	108	*1,860	262	322	186	110	61	32	31
6	50	58	294	112	1,190	246	393	178	112	59	31	31
7	49	58	215	112	893	228	454	173	108	58	32	32
8	49	58	180	105	770	228	410	171	103	56	33	34
9	48	58	150	107	752	237	373	168	98	52	33	36
10	48	80	140	116	722	272	341	171	95	49	33	35
11	49	150	140	110	668	*255	329	180	100	47	35	35
12	50	250	130	105	565	252	329	186	96	47	34	34
13	*50	180	120	102	477	246	333	209	90	47	33	34
14	54	130	110	107	464	237	333	201	88	44	31	34
15	56	100	110	100	454	234	322	190	90	43	31	34
16	54	80	110	98	414	237	311	186	85	*43	32	34
17	52	74	150	90	357	246	300	186	82	*42	*32	35
18	52	72	*472	100	333	258	311	178	79	41	31	35
19	56	70	232	100	318	246	341	188	76	41	31	34
20	87	*70	176	102	300	231	322	203	72	40	31	33
21	70	69	284	100	280	217	304	180	74	40	31	34
22	80	68	343	98	258	209	286	171	71	41	31	34
23	155	63	209	100	249	214	280	164	68	40	30	33
24	95	64	160	100	252	231	276	159	66	38	31	34
25	77	70	140	105	272	266	290	155	66	38	32	33
26	70	178	150	105	418	345	314	150	66	36	32	33
27	66	141	137	120	314	381	325	144	68	35	32	32
28	64	150	140	125	286	410	314	*142	74	35	31	33
29	63	165	180	131	280	393	286	140	98	35	30	33
30	62	202	152	164	-	365	262	131	96	34	31	33
31	60	-	133	*369	-	333	-	125	-	34	32	-
Total	1,980	2,952	6,985	3,617	19,795	8,408	9,641	5,493	2,690	1,455	990	994
Mean	63.9	98.4	225	117	683	271	321	177	89.7	46.9	31.9	33.1
Ac-ft	3,930	5,860	13,850	7,170	39,260	16,680	19,120	10,900	5,340	2,890	1,960	1,970

Calendar year 1951: Max 2,650 Min 38 Mean 310 Ac-ft 224,400
Water year 1951-52: Max 3,060 Min 30 Mean 178 Ac-ft 128,900

Peak discharge (base, 1,600 cfs).--Feb. 4 (4 p.m.) 4,450 cfs (8.0 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 4-19, Dec. 8-17, 24-26; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Klickitat River near Pitt, Wash.

Location.--Lat 45°45', long. 120°12', in SW¼ sec. 8, T. 3 N., R. 13 E., on left bank 3½ miles south of Pitt, 5 miles upstream from Silvias Creek, and 7 miles upstream from mouth at Lyle.

Drainage area.--1,290 sq mi, approximately.

Records available.--July 1909 to January 1912, October 1928 to September 1952. Published as "at Klickitat" 1909-12 and as "at Pitt" 1928-35.

Gage.--Water-stage recorder. Altitude of gage is 285 ft (from river-profile map). July 3, 1909, to Jan. 31, 1912, staff gage at Klickitat just downstream from Snider Creek, 7 miles upstream at different datum. Oct. 1, 1928, to Sept. 30, 1935, staff gage at site 175 ft downstream from highway bridge at Pitt, 3.5 miles upstream from present site at different datum.

Average discharge.--26 years (1909-11, 1928-52), 1,539 cfs.

Extremes.--Maximum discharge during year, 13,500 cfs Feb. 4 (gage height, 9.83 ft); minimum, 733 cfs Sept. 29, 30 (gage height, 3.97 ft).
1909-12, 1928-52: Maximum discharge observed, 21,000 cfs Dec. 22, 1933 (gage height, 12.5 ft, site and datum then in use), from rating curve extended above 3,000 cfs; minimum discharge, 466 cfs Feb. 4, 1937.

Remarks.--Records good. Small diversions above station for irrigation, 73.2 cfs measured in Hellroaring Irrigation Canal on Aug. 25, 1948. No regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 794: 1934. W 1218: Drainage area.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,220	997	2,980	1,170	3,480	1,680	2,570	3,180	2,520	1,530	1,020	798
2	1,380	985	2,260	1,120	5,180	1,610	2,550	*2,960	2,460	1,450	986	808
3	1,290	1,030	2,420	1,080	5,290	1,650	2,520	2,780	2,470	1,410	976	808
4	1,180	1,120	2,660	1,090	10,500	1,680	2,500	2,650	2,600	1,410	966	817
5	1,060	1,080	2,730	1,150	*8,570	1,580	2,700	2,550	2,760	1,380	966	788
6	1,010	1,020	2,120	1,140	5,940	1,520	3,030	2,470	2,700	1,330	945	798
7	986	1,030	1,780	1,140	4,820	1,460	3,420	2,420	2,540	1,280	935	788
8	966	1,010	1,620	1,090	4,160	1,460	3,300	2,440	2,380	1,260	945	798
9	955	997	1,510	1,090	3,820	1,480	3,110	2,490	2,320	1,280	966	798
10	945	1,080	1,510	1,120	3,670	*1,620	2,980	2,620	2,280	1,290	976	788
11	955	1,290	1,500	1,090	3,480	1,650	2,960	2,870	2,160	1,300	1,030	788
12	945	1,630	1,460	1,070	3,210	1,650	2,990	3,040	1,950	1,320	955	779
13	*935	1,320	1,410	1,040	2,870	1,640	3,040	3,350	1,780	1,280	945	770
14	986	1,190	1,340	1,060	2,760	1,600	3,100	3,460	1,690	1,260	955	760
15	1,060	1,100	1,340	1,060	2,620	1,580	3,040	3,230	1,660	1,240	925	760
16	1,020	1,030	1,330	1,040	2,450	1,610	3,010	3,250	1,600	1,200	905	770
17	986	997	1,330	1,010	2,240	*1,680	2,980	3,480	1,570	*1,190	*875	760
18	976	986	*1,950	1,020	2,090	1,790	3,150	3,510	1,560	1,190	885	770
19	1,040	986	1,610	1,020	2,030	1,750	3,530	3,660	1,530	1,170	875	779
20	1,450	*997	1,510	1,030	1,930	1,660	3,350	3,660	1,560	1,170	895	788
21	1,280	986	1,780	1,010	1,820	1,600	3,180	3,420	1,560	1,140	865	770
22	1,220	976	2,100	997	1,750	1,560	3,160	3,280	1,510	1,080	865	760
23	1,510	955	1,700	966	1,720	1,520	3,150	3,180	1,460	1,080	855	770
24	1,350	945	1,390	997	1,650	1,320	3,160	3,150	1,410	1,100	836	770
25	1,200	976	1,300	1,010	1,890	2,340	3,390	3,210	1,420	1,080	817	779
26	1,140	1,200	1,330	1,020	2,060	2,860	3,970	3,210	1,400	1,070	808	770
27	1,090	1,260	1,300	1,060	1,910	3,010	4,210	3,130	1,420	1,060	798	760
28	1,070	1,340	1,320	1,070	1,750	3,130	4,100	*3,100	1,480	1,060	798	751
29	1,060	1,450	1,450	1,070	1,700	3,060	3,670	3,100	1,580	1,040	798	742
30	1,060	1,640	1,360	*1,820	-	2,990	3,370	2,810	1,650	1,030	788	742
31	1,040	-	1,280	1,910	-	2,760	-	2,630	-	1,030	788	-
Total	34,365	33,474	52,700	34,060	97,200	59,100	95,190	94,290	56,980	37,710	27,942	23,327
Mean	1,109	1,116	1,700	1,097	3,352	1,906	3,173	3,042	1,899	1,216	901	778
Cfsm	0.860	0.865	1.32	0.850	2.60	1.48	2.46	2.36	1.47	0.943	0.698	0.603
In.	0.97	0.97	1.52	0.98	2.80	1.70	2.74	2.72	1.64	1.09	0.81	0.67
Ac-ft	68,160	66,390	104,500	67,440	192,800	117,200	188,800	187,000	113,000	74,800	55,420	46,270

Calendar year 1951: Max 12,100 Min 826 Mean 2,415 Cfsm 1.87 In. 25.43 Ac-ft 1,748,000
Water year 1951-52: Max 10,500 Min 742 Mean 1,766 Cfsm 1.37 In. 18.63 Ac-ft 1,282,000

Peak discharge (base, 4,000 cfs).--Feb. 4 (6:30 p.m.) 13,500 cfs (9.83 ft); Apr. 27 (6 to 7 a.m.) 4,370 cfs (6.45 ft).
* Discharge measurement made on this day.

Green Point Creek below North Fork, near Dee, Oreg.

Location.--Lat 45°35'20", long. 121°39'30", in NE¼ sec. 11, T. 1 N., R. 9 E., on left bank three-quarters of a mile upstream from mouth, 1¼ miles downstream from North Fork, and 1½ miles west of Dee.

Drainage area.--20.0 sq mi.

Records available.--August 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,100 ft above mean sea level (by barometer).

Extremes.--Maximum discharge during year, 1,030 cfs Feb. 4 (gage height, 3.80 ft); minimum, 14 cfs Sept. 21-30.
1949-52: Maximum discharge, 1,270 cfs Feb. 24, 1950; minimum, 12 cfs Sept. 18-24, 1951.

Remarks.--Records good except those for periods of no gage-height record and those for April through September, which are fair. Water is diverted above station in NW¼ sec. 10, T. 1 N., R. 9 E., and from North Fork in SE¼SW¼ sec. 30, T. 2 N., R. 9 E., and in SW¼ sec. 3, T. 1 N., R. 9 E., for irrigation outside Green Point Creek basin near Oak Grove. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Mar. 27 to May 31, July 30, 31)

0.5	12	2.0	231
.6	16	2.5	380
.7	22	3.0	570
1.0	54	3.5	840
1.5	127		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	48	387	68	a260	57	108	181	117	64	25	17
2	71	46	239	62	a270	54	119	157	113	58	25	17
3	71	46	226	58	a340	55	117	140	113	54	26	16
4	47	46	198	55	a800	54	119	131	116	52	26	16
5	35	42	185	54	415	52	136	122	117	49	26	16
6	31	40	132	52	*253	50	203	116	114	46	25	16
7	28	39	106	50	187	49	194	119	104	44	24	17
8	26	38	92	49	157	48	155	136	96	42	24	18
9	25	39	81	49	140	65	136	136	*93	40	24	*20
10	*24	58	78	48	140	90	125	151	90	39	23	17
11	25	105	85	47	138	*79	125	165	85	36	23	17
12	28	277	92	46	127	71	125	181	76	35	22	17
13	32	*205	89	44	114	67	129	231	71	34	22	17
14	84	149	83	43	105	62	136	207	76	33	21	16
15	98	110	81	42	98	60	129	187	78	31	21	16
16	85	89	95	40	92	60	129	192	68	31	21	15
17	65	78	*85	39	85	62	140	200	64	29	21	15
18	64	68	181	40	79	67	189	214	62	28	21	15
19	101	61	147	39	76	62	224	229	60	27	20	15
20	203	57	114	39	69	58	179	234	58	27	20	15
21	149	52	161	a38	67	57	163	212	62	27	20	14
22	209	50	224	a38	64	55	159	189	64	*26	20	14
23	*478	47	151	a38	62	76	153	181	58	26	19	14
24	209	44	122	a38	60	a150	167	175	57	26	20	14
25	134	46	102	a40	58	a230	234	175	53	26	20	14
26	105	138	92	a44	61	a230	303	161	52	26	19	14
27	83	151	85	a48	60	196	306	159	50	25	19	14
28	69	181	82	a44	58	185	282	163	50	24	18	14
29	65	239	106	a42	58	147	*205	155	79	24	18	14
30	58	272	89	a80	-	145	196	132	76	23	18	14
31	52	-	78	a150	-	129	-	122	-	23	18	-
Total	2,792	2,861	4,068	1,564	4,493	2,822	5,085	5,253	2,372	1,075	669	468
Mean	90.1	95.4	131	50.5	155	91.0	170	169	79.1	34.7	21.6	15.6
Ac-ft	5,540	5,670	8,070	3,100	8,910	5,600	10,090	10,420	4,700	2,130	1,330	928

Calendar year 1951: Max 720 Min 12 Mean 106 Ac-ft 76,680
Water year 1951-52: Max 800 Min 14 Mean 91.6 Ac-ft 66,490

62.19

Peak discharge (base, 850 cfs).--Feb. 4 (about 10 a.m.) 1,030 cfs (3.80 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for West Fork Hood River near Dee, recorded range in stage when available, and weather records.

West Fork Hood River near Dee, Oreg.

Location.--Lat 45°36'00", long. 121°38'20", in SE¼ sec. 1, T. 1 N., R. 9 E., on left bank a quarter of a mile upstream from Dead Point Creek, half a mile upstream from mouth, and 1 mile northwest of Dee.

Drainage area.--96 sq mi, approximately.

Records available.--September 1913 to February 1916 (incomplete), June 1932 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 802.08 ft above mean sea level, datum of 1929. Prior to Feb. 12, 1916, staff gage at site half a mile upstream at different datum.

Average discharge.--20 years (1932-52), 538 cfs.

Extremes.--Maximum discharge during year, 4,920 cfs Feb. 4 (gage height, 7.81 ft); minimum, 129 cfs Sept. 29, 30 (gage height, 1.40 ft).
1913-14, 1932-52: Maximum discharge, 12,900 cfs Dec. 22, 1933 (gage height, 12.4 ft), from rating curve extended above 5,000 cfs; minimum, 93 cfs Aug. 22, 1941 (gage height, 1.37 ft).

Remarks.--Records good. Diversions above station for irrigation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.4	129	4.0	1,220
2.0	280	5.0	1,940
3.0	660	7.2	4,140

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	438	339	1,980	450	1,720	355	721	754	506	514	206	152
2	620	323	1,300	410	1,840	339	782	660	494	450	199	152
3	1,110	342	1,420	386	2,150	349	770	598	502	410	204	159
4	578	368	1,340	375	4,040	349	716	554	534	389	212	159
5	400	320	1,350	372	2,300	336	804	526	554	368	214	157
6	329	298	958	358	*1,470	326	1,060	506	530	342	201	157
7	283	286	738	349	1,110	316	1,040	510	502	329	199	154
8	253	277	.610	339	963	316	875	598	482	320	199	165
9	236	283	542	345	870	382	765	594	*482	320	201	*172
10	*222	389	522	345	848	542	700	620	466	316	199	152
11	225	676	530	326	831	*470	680	670	434	301	196	148
12	295	1,700	538	310	760	426	675	705	392	286	194	148
13	358	*1,450	522	301	670	400	716	974	368	289	194	146
14	798	1,060	482	295	615	382	765	875	389	292	191	142
15	670	765	470	286	582	372	726	776	438	280	186	140
16	578	606	610	277	546	372	705	782	375	262	179	142
17	462	534	*554	265	510	392	726	858	365	250	174	137
18	462	470	1,240	268	482	414	941	880	368	242	172	140
19	952	434	958	265	462	386	1,040	897	365	236	168	142
20	1,620	406	726	265	442	372	853	985	365	236	165	144
21	1,180	378	1,120	259	418	352	748	963	400	236	163	144
22	1,490	365	1,600	259	400	345	716	798	406	230	170	137
23	3,170	342	1,020	253	389	418	665	732	362	236	172	135
24	1,430	326	798	259	375	831	710	710	345	236	168	142
25	919	362	660	262	368	1,140	908	700	336	222	163	146
26	680	902	582	304	378	1,180	1,010	650	320	222	159	146
27	546	875	534	326	372	1,080	1,030	660	323	219	159	144
28	486	1,020	514	298	365	1,030	1,060	685	339	217	157	135
29	446	1,270	685	292	365	892	*831	645	728	217	157	131
30	396	1,440	562	600	-	963	787	570	660	219	157	129
31	362	-	498	1,120	-	875	-	530	-	214	154	-
Total	21,994	18,606	25,963	10,819	26,641	16,702	24,525	21,965	13,130	8,900	5,632	4,397
Mean	709	620	838	349	919	539	818	709	438	287	182	147
Ac-ft	43,620	36,900	51,500	21,460	52,840	33,130	48,640	43,570	26,040	17,650	11,170	8,720

Calendar year 1951: Max 3,510 Min 144 Mean 642 Ac-ft 464,800
Water year 1951-52: Max 4,040 Min 129 Mean 544 Ac-ft 395,200

Peak discharge (base, 4,100 cfs).--Oct. 23 (5:30 a.m.) 4,790 cfs (7.71 ft); Feb. 4 (10 a.m.) 4,920 cfs (7.81 ft).

* Discharge measurement made on this day.

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

Location.--Lat 45°42'20", long. 121°30'20", 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 1913 to September 1914, January 1916 to September 1952.

Gage.--Venturi meter and electrical-output meter in powerhouse. Venturi meter read hourly. Prior to July 1922, in tailrace of former plant.

Average discharge.--30 years (1922-52), 378 cfs.

Extremes.--1913-14, 1916-52: Maximum daily discharge, 506 cfs Dec. 25, 1951; no flow at times.

Remarks.--Records excellent. Discharge computed from relation between flow in conduit and output of powerplant, 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.--Venturi meter readings and record of daily electrical output furnished by Pacific Power & Light Co.

Revisions (water years).--W 864: 1937.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	491	488	472	502	481	502	492	487	462	484	451	282
2	465	487	481	500	466	501	494	480	466	484	426	284
3	446	486	497	497	484	501	492	488	474	488	429	316
4	481	480	497	490	390	500	492	488	473	490	452	340
5	495	481	493	493	428	498	492	487	470	488	461	346
6	496	302	303	494	447	500	490	489	464	488	441	340
7	496	296	497	494	474	502	486	489	466	487	431	326
8	493	294	496	494	483	504	488	485	465	486	432	*344
9	494	291	495	494	483	503	490	478	466	485	432	372
10	*494	496	496	494	474	*501	492	476	473	486	428	333
11	493	493	493	494	476	498	486	475	475	486	416	315
12	496	473	498	494	478	498	489	475	478	485	399	309
13	498	285	497	494	476	498	493	472	*479	488	395	313
14	495	487	496	493	481	497	491	473	481	486	406	310
15	487	488	496	492	488	494	489	471	466	487	379	302
16	490	492	496	492	486	493	490	463	482	486	376	301
17	488	495	493	490	480	493	487	463	483	484	353	294
18	486	494	484	492	479	493	485	460	486	598	341	301
19	483	494	493	498	466	492	483	461	486	477	330	311
20	464	494	505	498	503	495	486	461	487	476	324	315
21	461	493	503	498	502	496	483	460	487	482	319	321
22	475	494	477	498	500	496	487	457	486	475	333	306
23	436	492	470	497	502	492	487	457	486	480	352	305
24	465	491	501	497	502	487	489	458	490	483	350	312
25	469	489	506	491	501	486	490	455	490	478	334	338
26	470	485	502	488	502	485	486	457	491	472	315	359
27	466	485	502	488	501	488	484	459	493	470	305	357
28	484	474	501	488	500	488	485	453	493	464	296	324
29	493	471	501	487	501	490	486	451	489	462	291	302
30	491	482	500	485	-	482	484	444	486	449	296	297
31	488	-	501	472	-	492	-	459	-	466	291	-
Total	14,929	13,652	15,142	15,278	13,934	15,345	14,650	14,531	14,373	14,800	11,584	9,575
Mean	482	455	488	493	480	495	488	469	479	477	374	319
Ac-ft	29,610	27,080	30,030	30,300	27,640	30,440	29,060	28,820	28,510	29,360	22,980	18,990

Calendar year 1951: Max 506 Min 0 Mean 445 Ac-ft 322,400
Water year 1951-52: Max 506 Min 282 Mean 458 Ac-ft 332,800

* Discharge measurement made on this day.

Hood River near Hood River, Oreg.

Location.--Lat 45°42'00", long. 121°30'40", in SE¼ sec. 36, T. 3 N., R. 10 E., on right bank 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.
Drainage area.--329 sq mi.
Records available.--March 1913 to September 1952.
Gage.--Water-stage recorder. Datum of gage is 106.23 ft above mean sea level, datum of 1929. Prior to Nov. 14, 1934, at site 220 ft upstream at same datum.
Average discharge.--39 years, 1,072 cfs (including flow of Pacific Power & Light Co.'s conduit).
Extremes.--Maximum discharge during year (river only), 7,720 cfs Feb. 4 (gage height, 5.83 ft); minimum, 33 cfs Aug. 6; minimum daily (including discharge of Pacific Power & Light Co.'s conduit), 334 cfs Aug. 29.
1913-52: Maximum discharge, 34,000 cfs Jan. 6, 1923 (gage height, 11.1 ft, site then in use), no diversion by power conduit; minimum, 3 cfs Aug. 9, 1926; minimum daily (including discharge of Pacific Power & Light Co.'s conduit), 165 cfs Aug. 5, 1941.
Remarks.--Records good except those for periods of no gage-height record, which are fair. Many diversions for irrigation of land above station. 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 table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3-19, Mar. 26-31)

0.3	34	2.5	770
.5	51	3.0	1,180
.7	74	4.0	2,430
1.0	124	5.0	4,750
1.5	254	5.6	6,780
2.0	455		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	700	292	2,570	547	2,340	404	909	933	665	a700	49	58
2	1,090	281	1,730	475	2,750	382	933	822	630	a500	40	55
3	1,680	306	1,880	427	3,070	404	917	742	624	a420	42	58
4	808	374	1,840	441	6,510	413	869	665	686	a360	48	66
5	450	281	1,950	417	*5,740	382	941	637	808	a320	60	60
6	325	365	1,540	408	a2,600	361	1,250	559	792	a260	44	54
7	254	357	1,050	369	a1,900	349	1,300	535	700	a210	40	51
8	218	349	853	361	a1,600	337	1,100	637	617	221	42	*62
9	180	361	714	369	a1,300	413	981	658	*630	*213	42	52
10	*151	378	651	386	a1,300	*721	909	665	610	230	48	48
11	142	722	651	341	1,270	610	893	785	a500	216	51	55
12	221	1,960	651	310	1,170	547	893	800	a460	186	44	59
13	306	1,780	604	288	1,040	495	933	1,250	a380	202	46	52
14	890	*1,230	553	288	989	455	965	1,160	a420	202	52	54
15	885	893	517	264	901	436	917	1,000	a480	188	49	56
16	637	665	728	245	830	432	893	997	a420	151	45	60
17	455	547	*617	221	742	446	917	1,140	a320	95	46	60
18	436	465	1,540	221	686	505	1,120	1,160	a320	152	45	60
19	858	408	1,310	218	686	455	1,370	1,260	a320	74	46	66
20	2,050	374	997	218	591	408	1,100	1,450	a360	74	44	74
21	1,370	337	1,350	210	553	369	965	1,380	a420	90	44	60
22	1,680	306	2,280	210	511	349	941	1,120	a420	66	50	54
23	*3,930	281	1,490	204	500	422	877	1,080	a360	*72	62	59
24	1,800	254	1,140	202	455	965	917	1,010	a320	85	52	62
25	1,140	350	933	207	436	1,360	1,120	1,020	a260	60	46	67
26	830	1,100	770	230	460	1,450	1,310	941	a210	56	43	69
27	630	941	700	285	460	1,320	1,350	917	a210	54	41	60
28	517	1,230	658	236	441	1,270	*1,480	997	a300	45	41	55
29	446	1,540	1,030	230	417	1,090	1,110	989	a1,100	45	43	58
30	374	1,700	785	658	-	1,120	1,040	815	a900	62	45	60
31	329	-	637	1,490	-	1,070	-	728	-	61	46	-
Total	25,782	20,427	34,719	10,976	40,248	19,740	31,220	28,832	15,242	5,670	1,436	1,764
Mean	832	681	1,120	354	1,388	637	1,041	930	508	183	46.3	58.8
Ac-ft	51,140	40,520	68,860	21,770	79,830	39,150	61,920	57,190	30,230	11,250	2,850	3,500
Adjusted for diversion in Pacific Power & Light Co.'s conduit												
Mean	1,313	1,136	1,608	847	1,869	1,132	1,529	1,399	987	660	420	378
Ac-ft	80,750	67,600	98,890	52,070	107,500	69,590	90,980	86,010	58,740	40,610	25,830	22,490

Observed

Calendar year 1951: Max 5,700 Min 48 Mean 937 Ac-ft 678,300
Water year 1951-52: Max 6,510 Min 40 Mean 645 Ac-ft 468,200

Adjusted

Calendar year 1951: Mean 1,383 Ac-ft 1,001,000
Water year 1951-52: Mean 1,103 Ac-ft 801,000

Peak discharge (base, 4,200 cfs).--Oct. 23 (8 a.m.) 5,770 cfs (5.32 ft); Feb. 4 (12 m.) 7,720 cfs (5.83 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Hood River near Dee and Pacific Power & Light Co.'s power canal, recorded range in stage when available, and weather records.

White Salmon River near Underwood, Wash.

Location.--Lat 45°45'00", long. 121°31'30", in NW¼ sec. 14, T. 3 N., R. 10 E., on right bank 300 ft downstream from bridge, 1,000 ft downstream from Northwestern Electric Co.'s Condit powerplant, and 2 miles north of Underwood and mouth.

Drainage area.--390 sq mi, approximately.

Records available.--October 1912 to February 1913, March 1915 to September 1930, September 1935 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from river-profile map). Prior to March 1913, reference point at dam, 1 mile upstream at different datum. March 1915 to July 16, 1918, water-stage recorder at site 200 ft upstream at datum 3.24 ft higher. July 17, 1918, to Sept. 30, 1930, water-stage recorder at site 200 ft upstream at datum 2.24 ft higher than present datum.

Average discharge.--32 years (1915-30, 1935-52), 1,071 cfs.

Extremes.--Maximum discharge during year, 5,900 cfs Feb. 4 (gage height, 7.95 ft); minimum, 91 cfs Sept. 27 (gage height, 1.95 ft); minimum daily, 575 cfs Sept. 28.
1915-30, 1935-52: Maximum discharge, 9,700 cfs Dec. 29, 1917 (gage height, 9.5 ft, site and datum then in use); practically no flow at times when powerplant is shut down.

Remarks.--Records excellent. Water diverted to irrigate about 4,000 acres in the Trout Lake area. Low and medium flow regulated by powerplant of the Northwestern Electric Co.

Revisions (water years).--W 484: 1915-17. W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.5	570	5.5	2,170
4.0	865	6.0	2,770
4.5	1,220	7.0	4,250
5.0	1,650	8.0	6,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,010	880	2,510	1,170	1,820	1,150	1,420	1,700	1,550	1,270	809	691
2	1,110	789	2,430	1,130	2,260	1,120	1,420	1,600	1,510	1,240	786	696
3	1,100	860	2,190	1,060	2,580	1,160	1,380	1,490	1,470	1,140	800	690
4	1,090	806	2,190	1,060	4,710	1,190	1,380	1,450	1,470	1,150	790	712
5	948	834	2,280	1,020	3,650	1,120	1,410	1,380	1,550	1,140	795	694
6	862	796	1,890	1,060	2,940	1,130	1,500	1,340	1,540	1,070	778	667
7	804	768	1,610	1,050	2,420	992	1,570	1,310	1,510	1,060	812	648
8	808	777	1,480	1,050	2,160	1,190	1,540	1,320	1,480	1,020	758	676
9	738	773	1,370	1,040	1,960	1,060	1,480	1,370	1,460	1,000	836	664
10	800	887	1,370	975	1,910	1,230	1,500	1,400	1,440	953	790	678
11	818	950	1,270	1,050	1,880	1,240	1,440	1,510	1,390	996	755	680
12	*732	1,350	1,290	992	1,770	*1,260	1,450	1,580	1,350	1,010	768	668
13	837	1,390	1,260	948	1,670	1,240	1,470	1,720	1,300	958	742	628
14	882	1,280	1,200	973	1,610	1,170	1,450	1,790	1,300	925	736	644
15	848	1,200	1,180	1,000	1,550	1,180	1,480	1,740	1,260	926	772	638
16	892	1,040	1,180	958	1,450	1,140	1,460	1,710	1,260	920	771	644
17	833	1,030	1,160	946	1,410	1,160	1,450	1,790	1,220	*908	716	646
18	864	908	1,320	938	1,380	1,250	1,520	1,850	1,220	908	*762	600
19	862	922	1,250	955	1,360	1,200	1,640	1,880	1,190	862	756	620
20	1,170	858	1,230	944	1,300	1,210	1,650	1,930	1,180	882	770	642
21	1,190	998	1,480	960	1,280	1,060	1,580	1,970	1,180	870	736	588
22	1,180	826	1,660	939	1,270	1,200	1,590	1,880	1,180	898	710	609
23	1,530	*823	1,480	948	1,260	1,110	1,580	1,770	1,180	877	734	626
24	1,530	852	1,380	907	1,180	1,170	1,550	1,790	1,160	864	732	612
25	1,280	868	1,260	890	1,170	1,600	1,590	1,780	1,120	879	744	595
26	1,200	968	1,250	948	1,150	1,750	1,790	1,790	1,120	856	728	656
27	1,090	1,150	1,250	884	1,150	1,720	1,890	1,760	1,120	872	704	588
28	976	1,310	*1,240	950	1,170	1,700	1,980	1,750	1,090	842	770	575
29	966	1,480	1,230	952	1,170	1,610	1,870	*1,750	1,120	804	698	599
30	872	1,670	1,260	976	-	1,520	*1,720	1,640	1,290	835	682	580
31	896	-	1,190	*1,240	-	1,500	-	1,600	-	809	716	-
Total	30,718	30,043	46,340	30,913	52,590	39,332	46,750	51,340	39,210	29,744	23,456	19,254
Mean	991	1,001	1,495	997	1,813	1,269	1,558	1,656	1,307	959	757	642
Ac-ft	60,930	59,590	91,910	61,320	104,300	78,010	92,730	101,800	77,770	59,000	46,520	38,190

Calendar year 1951: Max 5,580 Min 662 Mean 1,533 Ac-ft 1,110,000
Water year 1951-52: Max 4,710 Min 575 Mean 1,201 Ac-ft 872,100

* Discharge measurement made on this day.

Little White Salmon River at Willard, Wash.

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

Drainage area.--117 sq mi.

Records available.--November 1903 to August 1906 (fragmentary), December 1944 to September 1952. Published as "below Lava Creek, near Cooks" 1903-6.

Gage.--Water-stage recorder. Altitude of gage is 1,230 ft (from topographic map). Prior to Aug. 6, 1906, nonrecording gage near present site.

Average discharge.--7 years (1945-52), 469 cfs.

Extremes.--Maximum discharge during year 3,070 cfs Feb. 4 (gage height, 8.70 ft); minimum, 37 cfs Sept. 30 (gage height, 1.73 ft).
1903-6, 1944-52: Maximum discharge, 4,140 cfs Dec. 15, 1946 (gage height, 9.50 ft), from rating curve extended above 2,500 cfs; minimum, 8.3 cfs Oct. 26, 1946.

Remarks.--Records good. Broughton Lumber Co. diversion may at times carry as much as 30 cfs past this station (see miscellaneous measurements at end of this volume). Other diversions above station for water supply, irrigation, and hatchery purposes. No regulation.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
1.8	42	4.0	363	1.7	35	4.0	350
2.0	57	4.5	475	1.9	49	4.5	465
2.2	74	5.0	594	2.1	65	5.0	585
2.4	95	6.0	860	2.4	94	6.0	860
2.7	133	7.0	1,340	2.7	129	7.0	1,340
3.0	175	8.0	2,240	3.0	170	8.0	2,240
3.5	260			3.5	252	9.0	3,460

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	313	1,500	560	853	365	561	496	448	424	248	107
2	116	310	1,220	544	*1,060	354	568	487	453	410	243	103
3	130	313	1,060	527	1,230	352	571	*482	460	401	238	98
4	93	304	1,100	512	2,770	348	578	477	467	390	231	96
5	72	296	1,330	500	a1,700	335	652	477	475	379	226	92
6	63	288	1,020	486	*a1,270	323	770	475	477	368	220	91
7	58	280	866	477	1,020	313	770	475	482	361	215	88
8	56	272	794	466	890	215	680	472	484	357	211	85
9	55	274	752	464	830	323	620	470	489	350	206	82
10	56	302	720	452	809	424	588	470	491	346	199	80
11	59	389	694	436	824	429	573	472	496	342	196	77
12	62	686	671	418	797	*403	573	472	489	337	191	73
13	65	777	644	409	743	385	583	475	487	329	187	71
14	*88	707	611	398	700	370	583	475	484	323	182	68
15	114	594	596	385	660	357	568	458	484	319	176	66
16	137	517	587	372	628	357	554	463	475	315	170	63
17	123	486	572	361	595	368	559	448	470	313	166	61
18	111	459	720	355	563	392	592	451	460	*307	*162	59
19	155	443	730	346	547	374	615	448	458	303	159	55
20	346	434	674	344	518	359	573	443	458	299	152	52
21	264	418	752	329	491	340	544	439	453	297	148	51
22	323	405	980	321	475	329	527	434	453	291	142	47
23	857	*394	869	313	455	342	518	436	448	287	138	45
24	580	385	763	308	431	431	515	434	441	283	136	43
25	427	392	712	298	419	575	532	434	436	278	134	42
26	365	480	676	308	410	685	547	434	424	274	128	42
27	340	565	*642	317	396	692	544	434	422	270	124	41
28	327	714	625	308	385	700	530	439	429	266	121	41
29	323	914	668	304	374	650	508	*441	448	263	117	39
30	321	1,060	618	387	-	618	501	441	441	257	113	38
31	319	-	589	544	-	600	-	446	-	254	110	-
Total	6,489	14,171	24,755	12,549	22,843	13,108	17,397	14,198	13,882	9,993	5,389	1,996
Mean	209	472	799	405	788	423	580	458	463	322	174	66.5
Ac-ft	12,870	28,110	49,100	24,890	45,310	26,000	34,510	28,160	27,530	19,820	10,690	3,960

Calendar year 1951: Max 2,580 Min 46 Mean 542 Ac-ft 392,100
Water year 1951-52: Max 2,770 Min 38 Mean 428 Ac-ft 311,000

Peak discharge (base, 1,600 cfs).--Dec. 1 (10 a.m.) 1,600 cfs (7.34 ft); Feb. 4 (10 a.m.) 3,070 cfs (8.70 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement and records for stations on nearby streams.

Little White Salmon River below Lapham Creek, near Willard, Wash.

Location.--Lat 45°46'00", long. 121°37'40", in NW¼ sec. 12, T. 3 N., R. 9 E., on right bank 0.3 mile downstream from mouth of Lapham Creek and 1.2 miles south of Willard.

Drainage area.--123 sq mi.

Records available.--September 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 980 ft (from topographic map).

Extremes.--Maximum discharge during year 3,080 cfs Feb. 4 (gage height, 5.71 ft); minimum, 102 cfs Sept. 30 (gage height, 1.61 ft).
1949-52: Maximum discharge, that of Feb. 4, 1952; minimum, 91 cfs Nov. 7, 1949 (gage height, 1.55 ft).

Remarks.--Records good below 500 cfs and fair above. Broughton Lumber Co. diversion may at times carry as much as 30 cfs past station (see miscellaneous measurements at end of this volume). Other diversions above station for water supply, irrigation, and hatchery purposes. Possibly some regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	100	3.5	822
1.9	166	4.0	1,140
2.2	250	4.5	1,580
2.5	352	5.0	2,140
3.0	562	5.5	2,830

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	313	1,450	600	916	402	645	567	512	485	292	171
2	179	313	1,260	576	*1,130	390	650	562	516	472	285	166
3	195	313	1,150	562	1,290	390	655	557	521	459	282	161
4	159	306	1,200	548	2,740	386	660	553	530	443	276	159
5	135	299	1,370	530	1,860	375	755	548	534	430	272	156
6	127	292	1,150	521	*1,420	363	898	548	544	422	269	154
7	122	285	982	503	1,160	356	916	548	548	418	266	149
8	120	276	898	490	1,020	348	794	544	553	410	263	149
9	120	276	834	485	952	367	717	539	553	402	260	147
10	120	302	783	472	928	507	665	534	553	394	253	142
11	122	398	739	451	940	503	650	534	557	390	250	140
12	127	744	707	430	916	*468	645	534	553	386	247	138
13	131	874	676	418	851	443	655	544	553	382	244	135
14	*154	766	640	406	788	418	660	539	553	371	238	131
15	174	625	625	390	734	402	640	521	548	371	235	129
16	192	544	610	375	702	402	625	516	544	363	235	127
17	179	507	605	363	655	422	630	516	539	360	229	124
18	169	476	794	356	625	455	665	516	525	*360	223	120
19	209	464	811	348	600	434	702	512	521	345	*220	118
20	380	451	734	345	572	406	650	512	516	341	214	116
21	272	430	834	334	548	390	615	507	516	338	212	114
22	320	414	1,140	323	525	382	596	498	512	334	206	114
23	434	394	988	316	507	394	591	498	512	327	203	110
24	605	386	874	309	485	503	586	494	503	325	200	108
25	438	390	794	302	468	670	605	494	498	320	198	106
26	363	498	739	309	459	800	620	494	490	316	192	106
27	334	591	696	316	447	816	615	498	485	309	187	106
28	327	777	*665	313	426	822	605	503	485	309	184	106
29	325	*1,010	723	306	414	761	581	507	512	306	179	104
30	320	1,120	670	386	-	712	*572	*503	512	299	179	104
31	316	-	630	562	-	686	-	507	-	296	174	-
Total	7,318	14,834	26,771	12,945	25,078	15,173	19,863	16,247	15,798	11,481	7,167	3,910
Mean	236	494	864	418	865	489	662	524	527	370	231	130
Ac-ft	14,520	29,420	53,100	25,680	49,740	30,100	39,400	32,230	31,330	22,770	14,220	7,760

Calendar year 1951: Max 2,400 Min 110 Mean 610 Ac-ft 441,600
Water year 1951-52: Max 2,740 Min 104 Mean 482 Ac-ft 350,300

Peak discharge (base, 1,500 cfs).--Dec. 1 (12 m.) 1,510 cfs (4.53 ft); Feb. 4 (9 a.m.) 3,080 cfs (5.71 ft).

* Discharge measurement made on this day.

Wind River above Trout Creek, near Carson, Wash.

Location.--Lat 45°48'30", long. 121°54'30", in NE¼ sec. 26, T. 4 N., R. 7 E., on left bank 30 ft below bridge, three-quarters of a mile upstream from mouth of Trout Creek, and 7 miles northwest of Carson.

Drainage area.--108 sq mi.

Records available.--October 1944 to September 1952.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 850 ft (from topographic map).

Average discharge.--8 years, 574 cfs.

Extremes.--Maximum discharge during year, 4,620 cfs Dec. 1 (gage height, 11.47 ft); minimum observed, 69 cfs Sept. 24-30 (gage height, 1.59 ft).
1944-52: Maximum discharge, 8,880 cfs Feb. 8, 1945 (gage height, 15.5 ft, from high-water mark), from rating curve extended above 5,000 cfs; minimum observed, 52 cfs Oct. 27-30, 1945.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-2*		Oct. 3 to Sept. 30			
3.7	381	1.5	63	4.0	422
4.0	451	1.8	86	5.0	690
4.5	583	2.1	114	7.0	1,500
5.0	730	2.5	158	9.0	2,650
5.6	935	3.0	231	11.0	4,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	390	384	4,080	427	1,380	358	769	966	505	292	113	85
2	924	362	2,350	401	1,540	350	818	864	*498	269	112	83
3	568	369	2,070	384	1,620	358	790	797	498	256	110	82
4	360	346	1,870	377	4,000	352	769	708	505	244	107	82
5	272	319	2,070	373	*2,540	342	909	663	512	234	106	80
6	221	303	1,540	354	1,630	332	1,200	630	500	217	105	80
7	191	288	1,170	346	1,340	323	1,210	618	470	208	104	83
8	172	285	986	332	1,120	321	1,020	660	451	202	104	86
9	158	278	839	350	1,010	336	892	657	448	192	103	89
10	147	490	752	332	966	480	850	684	444	188	101	86
11	*156	892	705	323	978	460	832	769	404	179	100	83
12	184	1,610	678	297	946	444	808	758	369	174	99	82
13	218	1,640	642	290	867	422	867	860	346	166	98	84
14	340	1,300	591	286	786	*406	926	881	342	161	97	80
15	413	998	568	279	711	390	923	814	356	156	97	77
16	528	818	579	267	660	395	884	814	332	151	98	76
17	406	705	555	257	608	408	906	884	326	148	96	76
18	354	621	727	256	560	444	1,070	902	325	146	95	76
19	550	562	825	256	540	420	1,230	895	326	142	94	75
20	1,310	530	702	259	492	390	1,070	881	319	*139	*94	73
21	878	482	724	250	465	375	946	888	315	138	91	72
22	978	446	1,060	242	439	366	920	780	306	136	90	72
23	2,860	420	864	237	417	381	884	741	285	134	92	71
24	1,660	397	762	236	395	573	898	720	276	133	92	70
25	1,130	408	672	229	388	839	1,010	727	271	131	102	69
26	853	1,020	621	261	386	926	1,120	702	261	126	97	69
27	696	978	565	286	379	909	1,110	687	269	122	93	69
28	603	*1,350	532	283	373	962	1,220	696	271	120	91	69
29	530	1,740	*585	276	373	888	*1,030	645	303	118	89	69
30	468	2,020	515	538	-	850	974	576	358	116	87	69
31	417	-	470	695	-	846	-	548	-	115	86	-
Total	18,935	22,361	31,669	10,179	27,907	15,646	28,855	23,415	11,191	5,253	3,043	2,317
Mean	611	745	1,022	328	962	505	962	755	373	169	98.2	77.2
Cfsm	5.66	6.90	9.46	3.04	8.91	4.68	8.91	6.99	3.45	1.56	0.909	0.715
In.	6.52	7.70	10.91	3.51	9.61	5.39	9.94	8.06	3.85	1.81	1.05	0.80
Ac-ft	37,560	44,350	62,810	20,190	55,350	31,030	57,230	46,440	22,200	10,420	6,040	4,600

Calendar year 1951: Max 4,080 Min 74 Mean 616 Cfsm 5.70 In. 77.38 Ac-ft 445,700
Water year 1951-52: Max 4,080 Min 69 Mean 549 Cfsm 5.08 In. 69.15 Ac-ft 398,200

Peak discharge (base, 3,000 cfs).--Oct. 23 (8 a.m.) 3,140 cfs (9.70 ft, observed); Dec. 1 (time unknown) 4,620 cfs (11.47 ft); Feb. 4 (time unknown) 4,340 cfs (11.15 ft).
* Discharge measurement made on this day.

Panther Creek near Carson, Wash.

Location.--Lat 45°48'00", long. 121°52'00", in SW¼ sec. 25, T. 4 N., R. 7½ E., on left bank a third of a mile upstream from Cedar Creek and 6 miles north of Carson.

Drainage area.--30.1 sq mi.

Records available.--December 1944 to September 1952.

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

Average discharge.--7 years (1945-52), 187 cfs.

Extremes.--Maximum discharge during year, 1,770 cfs Feb. 4 (gage height, 5.17 ft); minimum, 60 cfs Sept. 20-24, 29, 30 (gage height, 0.98 ft).
1944-52: Maximum discharge, 2,230 cfs Jan. 7, 1948 (gage height, 5.1 ft, from high-water mark in well); minimum, 47 cfs Aug. 31 to Sept. 2, 1945
A discharge of 40 cfs was measured Oct. 30, 1944.

Remarks.--Records good. No diversion or regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.9	49	3.0	600
1.1	78	3.5	810
1.3	112	4.0	1,060
1.6	175	4.5	1,340
2.0	273	5.0	1,650
2.5	422		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	116	1,040	151	692	126	227	171	112	98	76	68
2	237	110	628	142	660	122	234	160	110	96	75	66
3	205	110	568	138	740	122	237	153	108	94	75	66
4	126	107	616	134	1,540	122	237	145	108	92	75	66
5	99	101	680	130	*801	122	292	138	110	91	74	66
6	88	99	422	126	472	120	355	136	108	91	72	66
7	81	98	322	124	384	120	328	132	108	89	72	66
8	78	94	273	120	340	120	270	136	107	89	72	68
9	75	98	234	124	317	128	224	140	105	88	72	66
10	74	126	215	120	317	200	203	142	105	88	70	64
11	78	256	205	118	325	186	198	155	105	88	70	64
12	*78	472	208	112	314	164	193	155	103	86	70	64
13	81	486	205	110	278	*155	208	164	103	86	69	63
14	116	396	193	110	244	147	222	164	103	84	69	63
15	153	295	189	107	215	140	212	151	103	84	69	62
16	177	234	193	105	196	142	203	149	103	83	69	62
17	145	196	196	101	180	147	212	153	103	83	69	62
18	130	173	318	101	168	157	252	153	101	83	69	62
19	187	157	334	101	157	149	273	151	99	83	*69	62
20	358	147	268	103	147	140	230	145	99	*83	69	60
21	281	136	284	99	138	132	200	136	101	83	69	60
22	352	128	416	99	134	128	189	130	99	81	69	60
23	885	122	325	99	128	134	182	126	98	81	69	60
24	466	118	273	98	124	191	186	126	96	81	69	60
25	300	126	232	98	122	257	217	126	94	81	72	62
26	230	268	205	110	122	292	232	124	94	81	69	62
27	184	343	186	138	124	286	227	122	94	80	68	62
28	160	*469	175	151	126	292	*227	122	94	78	68	62
29	145	568	*186	155	126	265	198	120	103	78	68	62
30	132	688	173	296	-	247	180	*118	105	78	68	62
31	122	-	162	438	-	252	-	114	-	76	68	-
Total	5,941	6,837	9,924	4,158	9,631	5,305	6,848	4,357	3,081	2,637	2,182	1,898
Mean	192	228	320	134	332	171	228	141	103	85.1	70.4	63.3
Cfsm	6.38	7.57	10.6	4.45	11.0	5.68	7.57	4.68	3.42	2.83	2.34	2.10
In.	7.34	8.45	12.26	5.14	11.90	6.55	8.46	5.38	3.81	3.26	2.70	2.35
Ac-ft	11,780	13,560	19,680	8,250	19,100	10,520	13,580	8,640	6,110	5,230	4,330	3,760

Calendar year 1951: Max 1,700 Min 62 Mean 206 Cfsm 6.84 In. 92.78 Ac-ft 148,900
Water year 1951-52: Max 1,540 Min 60 Mean 172 Cfsm 5.71 In. 77.60 Ac-ft 124,500

Peak discharge (base, 1,000 cfs).--Oct. 23 (9 a.m.) 1,090 cfs (4.06 ft); Dec. 1 (6 to 8 a.m.) 1,180 cfs (4.23 ft); Feb. 4 (8 a.m.) 1,770 cfs (5.17 ft).
* Discharge measurement made on this day.

Wind River near Carson, Wash.

Location.--Lat 45°44'10", long. 121°48'10", in SW¼NE¼ sec. 21, T. 3 N., R. 8 E., on right bank three-quarters of a mile upstream from Little Wind River, 1 mile northeast of Carson, and 2½ miles upstream from mouth. Records include flow of Little Wind River.

Drainage area.--225 sq mi, includes that of Little Wind River.

Records available.--December 1934 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map).

Average discharge.--17 years, 1,113 cfs.

Extremes.--Maximum discharge during year, 13,800 cfs Feb. 4 (gage height, 15.28 ft); minimum, 160 cfs Sept. 30 (gage height, 2.97 ft).
1934-52: Maximum discharge, 16,700 cfs Dec. 29, 1937 (gage height, 17.30 ft), from rating curve extended above 5,000 cfs on basis of velocity-area studies; minimum, 136 cfs Nov. 29, Dec. 1, 1936 (gage height, 2.21 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow occasionally affected by pondage at Forest Service powerplant on Trout Creek. No diversion above station.

Revisions.--W 964: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.9	149	6.0	1,100
3.2	195	7.0	1,670
3.6	269	8.0	2,400
4.0	359	10.0	4,380
4.5	491	12.0	7,170
5.0	660	14.2	11,300

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	910	800	8,570	1,040	4,670	840	1,820	2,000	950	544	249	195
2	2,260	748	5,260	960	4,730	812	1,960	1,780	*920	497	247	192
3	1,780	748	5,000	905	5,570	828	1,960	1,600	915	506	243	190
4	1,020	736	4,920	872	11,300	848	1,890	1,480	910	491	240	187
5	724	668	5,300	852	*6,240	844	2,200	1,370	930	469	236	185
6	568	620	3,630	820	4,110	816	2,800	1,290	900	447	234	185
7	488	585	2,730	788	3,240	784	2,700	1,260	864	426	232	189
8	431	560	2,240	756	2,760	772	2,300	1,360	832	413	232	197
9	392	560	1,870	776	2,480	840	2,100	1,380	820	405	230	202
10	364	985	1,620	792	2,340	1,410	1,900	1,440	808	389	226	195
11	*384	2,090	1,510	748	2,400	1,350	1,850	1,590	764	376	225	190
12	436	4,140	1,470	692	2,370	1,180	1,800	1,570	716	372	221	187
13	517	4,370	1,390	664	2,060	*1,110	1,900	1,740	660	362	219	185
14	926	3,410	1,280	660	1,810	1,040	2,000	1,790	656	347	217	182
15	1,240	2,460	1,220	624	1,630	975	1,900	1,630	676	337	217	179
16	1,470	1,880	1,310	585	1,480	970	1,800	1,630	632	330	217	178
17	1,120	1,560	1,270	557	1,360	1,020	1,950	1,750	610	324	216	178
18	935	1,350	2,720	554	1,240	1,160	2,200	1,760	602	319	214	176
19	1,520	1,200	2,470	560	1,190	1,080	2,500	1,730	599	*314	212	174
20	3,530	1,120	1,870	613	1,100	990	2,200	1,680	588	310	*212	172
21	2,500	1,020	2,120	581	1,030	930	1,900	1,660	592	308	207	170
22	3,100	930	3,260	554	965	896	1,800	1,480	585	301	205	168
23	6,870	868	2,420	538	915	935	1,700	1,410	544	294	205	168
24	4,040	820	1,950	526	868	1,510	1,750	1,380	520	292	205	167
25	2,640	880	1,640	523	848	2,190	2,100	1,370	508	288	221	166
26	1,950	3,300	1,440	602	856	2,490	2,300	1,300	494	280	217	166
27	1,520	2,600	1,300	784	868	2,350	2,400	1,260	500	271	210	164
28	1,270	3,480	1,200	800	864	2,370	*2,300	1,270	508	267	207	164
29	1,120	*4,460	*1,440	808	860	2,150	2,150	1,200	582	263	202	162
30	985	5,440	1,280	1,920	-	2,060	2,030	1,080	724	259	197	161
31	876	-	1,150	3,140	-	2,080	-	1,020	-	253	197	-
Total	47,886	54,388	76,850	25,594	72,154	39,630	62,160	46,260	20,909	11,054	6,812	5,374
Mean	1,545	1,813	2,479	826	2,488	1,278	2,072	1,492	697	357	220	179
Cfsm	6.87	8.06	11.0	3.67	11.1	5.68	9.21	6.63	3.10	1.59	0.978	0.796
In.	7.92	8.99	12.70	4.23	11.93	6.55	10.27	7.65	3.46	1.83	1.13	0.89
Ac-ft	94,980	107,900	152,400	50,760	143,100	78,600	123,300	91,760	41,470	21,930	13,510	10,660

Calendar year 1951: Max 8,900 Min 168 Mean 1,420 Cfsm 6.31 In. 85.68 Ac-ft 1,028,000
Water year 1951-52: Max 11,300 Min 161 Mean 1,282 Cfsm 5.70 In. 77.55 Ac-ft 930,400

Peak discharge (base, 5,700 cfs).--Oct. 23 (9 a.m.) 8,260 cfs (12.64 ft); Dec. 1 (7:30 a.m.) 9,880 cfs (13.49 ft); Feb. 4 (8:30 a.m.) 13,800 cfs (15.28 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Apr. 5-29; discharge estimated on basis of recorded range in stage and records for station above Trout Creek, near Carson.

Salmon River near Government Camp, Oreg.

Location.--Lat 45°16'00", long. 121°43'00", in sec. 31, T. 3 S., R. 9 E., on right bank near lower end of Red Top Meadows, 4 miles southeast of Government Camp.

Drainage area.--8.7 sq mi, approximately.

Records available.--May 1910 to May 1912, April 1926 to September 1952. Published as "near Rowe" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 3,446.45 ft above mean sea level, datum of 1929. Prior to Nov. 21, 1910, staff gage at site a quarter of a mile upstream at different datum. Nov. 21, 1910, to May 31, 1912, and Apr. 21, 1926, to Sept. 30, 1933, water-stage recorder at site 75 ft upstream from former site at different datum.

Average discharge.--27 years (1910-11, 1926-52), 42.4 cfs.

Extremes.--Maximum discharge during year, 240 cfs Oct. 23 (gage height, 2.15 ft); minimum, 18 cfs Sept. 30.
1910-12, 1926-52: Maximum discharge, 650 cfs Dec. 22, 1933 (gage height, 3.61 ft); minimum, 12 cfs 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.

Revisions.--W 769: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 25		Mar. 26 to Sept. 30	
0.3	15	0.3	17
.6	32	.6	33
1.0	66	1.0	68
1.6	141	1.7	167

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	35	74	25	37	22	36	74	88	70	34	24
2	54	34	48	24	36	22	36	*66	88	66	32	24
3	77	37	41	24	37	22	37	65	87	58	32	24
4	37	38	40	24	63	22	42	64	96	59	32	24
5	27	33	36	24	45	22	52	60	97	56	32	24
6	24	32	34	24	36	22	65	61	90	54	31	23
7	a21	32	33	23	33	21	60	67	85	52	31	22
8	a19	31	33	23	31	21	52	78	82	52	31	26
9	a19	30	31	23	30	24	51	80	84	51	31	24
10	22	38	31	22	29	25	52	92	82	50	31	22
11	*28	40	31	22	29	24	53	96	76	48	30	22
12	36	57	32	22	28	24	54	108	*68	46	29	*24
13	41	43	31	22	28	*22	59	135	65	46	29	a22
14	68	37	31	22	27	22	59	124	81	45	29	a21
15	41	33	30	22	26	22	56	114	81	43	29	a21
16	40	*33	31	22	25	22	56	122	68	43	28	a21
17	34	30	30	21	25	22	64	123	64	42	27	a21
18	37	30	31	21	25	21	86	123	64	41	26	a21
19	57	30	*28	21	25	21	84	132	64	41	26	a20
20	75	29	30	21	24	20	65	152	67	41	26	a20
21	53	29	31	21	24	20	68	148	75	42	26	a20
22	94	28	40	21	23	19	72	122	69	39	26	a20
23	132	27	31	21	23	32	69	114	61	39	26	20
24	71	26	29	21	23	69	81	117	58	39	26	20
25	55	31	28	21	23	91	104	116	58	37	24	20
26	48	49	28	21	25	82	117	105	57	36	24	20
27	44	40	27	20	25	66	112	111	59	36	24	20
28	43	40	27	*20	24	57	98	112	74	*35	24	20
29	45	41	27	20	23	47	78	106	142	35	24	20
30	40	56	27	26	-	42	79	96	84	34	24	19
31	37	-	26	29	-	39	-	91	-	34	24	-
Total	1,465	1,069	1,027	693	852	1,007	1,997	3,174	2,314	1,410	868	649
Mean	47.3	35.6	33.1	22.4	29.4	32.5	66.6	102	77.1	45.5	28.0	21.6
Cfsm	5.44	4.09	3.80	2.57	3.38	3.74	7.66	11.7	8.86	5.23	3.22	2.48
In.	6.26	4.57	4.39	2.96	3.64	4.30	8.54	13.57	9.89	6.03	3.71	2.77
Ac-ft	2,910	2,120	2,040	1,370	1,690	2,000	3,960	6,300	4,590	2,800	1,720	1,290

Calendar year 1951: Max 151 Min 18 Mean 51.1 Cfsm 5.87 In. 79.66 Ac-ft 36,960
Water year 1951-52: Max 152 Min 19 Mean 45.2 Cfsm 5.20 In. 70.63 Ac-ft 32,790

Peak discharge (base, 150 cfs).--Oct. 23 (3 a.m.) 240 cfs (2.15 ft); May 12 (11 p.m.) 176 cfs (1.75 ft); May 20 (10 p.m.) 189 cfs (1.82 ft); June 29 (11 a.m.) 223 cfs (1.99 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage when available and records for Clear Creek near Government Camp and station above Boulder Creek near Brightwood.

Salmon River above Boulder Creek, near Brightwood, Oreg.

Location.--Lat 45°21'40", long. 122°00'40", in SW¼SE¼ sec. 25, T. 2 S., R. 6 E., on left bank 1 mile upstream from Boulder Creek, 1¼ miles south of Brightwood, and 2¼ miles upstream from mouth.
Drainage area.--106 sq mi.
Records available.--August 1936 to September 1952 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 1,089.2 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).
Average discharge.--16 years, 452 cfs.
Extremes.--Maximum discharge during year, 3,590 cfs Oct. 23 (gage height, 4.17 ft); minimum, 78 cfs Sept. 29, 30 (gage height, 0.51 ft).
1936-52: Maximum discharge, 11,700 cfs Dec. 14, 1946 (gage height, 7.08 ft), from rating curve extended above 4,100 cfs; minimum, 59 cfs Nov. 30, Dec. 1, 1936, Sept. 25, 26, 1940.
Remarks.--Records good. No diversion or regulation above station.
Revisions (water years).--W 1218: 1938(M), 1943(M), 1946(M), 1947, 1948(P). Revised figures of discharge, in cubic feet per second, for a period in the water year 1939, superseding figures published in Water-Supply Paper 904, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1939		1939-Con.		1939-Con.	
Nov. 1	106	Nov. 11	106	Nov. 21	75
2	99	12	99	22	92
3	113	13	94	23	85
4	106	14	90	24	79
5	94	15	85	25	77
6	90	16	83	26	75
7	92	17	79	27	83
8	121	18	81	28	79
9	129	19	79	29	75
10	113	20	75	30	121

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
November 1939.....	2,775	129	75	92.5	0.873	0.97	5,500
Calendar year 1939.	126,047	2,710	67	345	3.25	44.22	250,000
Water year 1939-40.	115,598	2,640	59	316	2.98	40.56	229,300

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	241	1,530	324	1,420	329	602	692	432	533	149	95
2	504	230	1,070	302	1,400	311	589	622	412	432	147	93
3	745	234	1,030	293	1,700	311	589	589	*401	376	144	90
4	504	268	1,050	298	2,000	311	589	564	396	348	141	90
5	*289	234	1,230	281	1,160	298	745	539	391	324	138	101
6	198	215	775	268	805	289	932	522	381	302	136	99
7	167	208	583	260	685	285	851	539	362	285	133	95
8	147	202	492	248	615	281	715	596	348	272	130	101
9	133	198	427	252	589	311	636	589	334	264	130	106
10	128	234	401	265	577	417	622	609	338	260	128	97
11	130	448	412	245	583	*376	622	650	338	252	125	93
12	192	1,160	454	230	539	338	615	657	324	245	123	95
13	281	932	454	222	481	316	657	812	302	237	120	93
14	763	782	406	226	437	293	685	798	343	230	118	88
15	596	602	386	215	422	281	650	790	401	222	118	86
16	396	470	589	208	401	277	636	745	324	219	118	86
17	306	396	539	195	381	277	657	752	302	212	115	84
18	276	352	961	205	362	289	828	738	289	*208	113	84
19	410	324	*768	205	348	277	924	738	281	205	113	82
20	974	306	564	205	324	268	752	798	281	202	111	82
21	782	293	929	202	311	260	685	899	320	198	108	80
22	1,140	285	1,710	198	302	260	*692	745	320	195	106	80
23	2,650	*268	875	202	298	384	664	671	289	195	108	80
24	1,180	256	636	219	289	1,210	708	636	277	192	108	80
25	708	272	516	241	306	1,220	820	602	272	185	106	80
26	510	812	448	256	348	1,070	899	577	264	182	103	80
27	412	685	412	293	381	915	915	557	268	173	*101	80
28	352	843	391	324	367	859	932	545	306	164	99	80
29	329	1,020	454	386	357	715	768	533	978	161	97	80
30	311	1,030	401	788	-	708	722	481	796	155	97	80
31	264	-	367	*1,180	-	708	-	459	-	155	95	-
Total	16,022	13,800	21,260	9,236	18,188	14,444	21,701	20,044	11,072	7,583	3,678	2,640
Mean	517	460	686	298	627	466	723	647	369	245	119	88.0
Cfsm	4.88	4.34	6.47	2.81	5.92	4.40	6.82	6.10	3.48	2.31	1.12	0.830
In.	5.62	4.84	7.46	3.24	6.38	5.07	7.61	7.03	3.88	2.66	1.29	0.93
Ac-ft	31,780	27,370	42,170	18,320	36,080	28,650	43,040	39,760	21,960	15,040	7,300	5,240

Calendar year 1951: Max 2,650 Min 80 Mean 533 Cfsm 5.03 In. 68.28 Ac-ft 386,000
Water year 1951-52: Max 2,650 Min 80 Mean 436 Cfsm 4.11 In. 56.02 Ac-ft 316,700

Peak discharge (base, 2,900 cfs).--Oct. 23 (7 a.m.) 3,590 cfs (4.17 ft); Dec. 21 (11 p.m.) 3,000 cfs (3.84 ft).
* Discharge measurement made on this day.

Sandy River near Marmot, Oreg.

Location.--Lat 45°23'10", long. 122°08'00", in NE¼ sec. 24, T. 2 S., R. 5 E., on right bank 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 sq mi.

Records available.--August 1911 to September 1952. Records for period January 1916 to June 1919 published as "at dam near Marmot" obtained by combining records for Sandy River below dam near Marmot with records for Sandy River Canal near Marmot.

Gage.--Water-stage recorder. Datum of gage is 742.4 ft above mean sea level (Portland General Electric Co. benchmark). Prior to Oct. 19, 1933, water-stage recorder (staff gage for short periods) at several sites ranging from 1¼ miles below to half a mile above present site at various datums.

Average discharge.--41 years, 1,329 cfs.

Extremes.--Maximum discharge during year, 9,120 cfs Oct. 23 (gage height, 9.92 ft); minimum, 276 cfs Sept. 29, 30 (gage height, 3.04 ft).
1911-52: Maximum discharge, 29,200 cfs Jan. 6, 1923 (gage height, 17.5 ft, site and datum then in use), by computation of peak flow over dam; minimum, 205 cfs Sept. 21-24, 1940.

Remarks.--Records excellent. No diversion or regulation above station.

Cooperation.--Water-stage recorder inspected by employee of Portland General Electric Co.

Revisions.--W 594: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.0	260	6.0	2,450
3.5	485	7.0	3,700
4.0	755	8.0	5,300
5.0	1,470	9.0	7,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	815	791	3,760	1,000	4,320	900	1,780	1,840	1,150	1,880	505	350
2	1,310	749	2,850	926	4,480	848	1,780	1,640	1,110	1,480	490	345
3	2,000	761	3,060	893	4,910	854	1,750	1,500	1,090	1,290	495	358
4	*1,290	886	3,120	886	6,430	860	1,720	1,410	1,090	1,170	510	368
5	785	755	3,390	848	4,050	815	2,200	1,340	1,110	1,070	505	381
6	612	690	2,360	815	2,800	797	2,790	1,300	*1,090	964	465	358
7	535	662	1,790	779	2,260	773	2,560	1,360	1,020	893	460	345
8	475	640	1,520	761	1,950	755	2,100	1,700	971	874	460	358
9	445	629	1,340	767	1,810	854	1,830	1,650	971	880	475	372
10	422	749	1,250	822	1,740	1,140	1,710	1,760	971	860	465	332
11	435	1,110	1,230	749	1,760	1,030	1,680	1,940	932	809	450	314
12	634	2,810	1,260	719	1,630	*945	1,630	1,910	880	767	430	327
13	854	2,460	1,260	690	1,410	893	1,820	2,470	809	767	430	322
14	2,120	2,240	1,150	690	1,290	848	1,920	2,420	945	755	440	304
15	1,800	1,830	1,100	662	1,240	803	1,780	2,320	1,140	725	426	300
16	1,310	1,490	1,600	646	1,160	785	1,720	2,170	926	678	412	304
17	1,020	1,290	1,510	618	1,080	785	1,830	2,130	860	*640	399	304
18	926	1,210	2,530	612	1,010	822	2,310	2,200	828	629	386	314
19	1,210	1,030	*2,210	612	971	779	2,620	2,220	809	612	381	332
20	2,990	978	1,660	654	912	743	2,070	2,440	828	607	376	336
21	2,380	*926	2,160	618	867	713	1,830	2,640	978	607	*376	314
22	3,080	886	4,180	607	841	695	1,800	2,160	971	580	390	304
23	7,060	834	2,500	602	828	1,010	*1,710	1,970	874	590	390	309
24	3,840	809	1,880	684	797	3,740	1,850	1,840	834	585	381	322
25	2,340	880	1,580	737	841	4,400	2,220	1,730	822	565	372	336
26	1,700	1,980	1,370	773	932	3,710	2,420	1,610	791	555	354	332
27	1,370	1,800	1,250	860	1,010	2,980	2,490	1,560	815	540	345	314
28	1,170	2,080	1,180	912	984	2,680	2,590	1,550	912	530	345	288
29	1,070	2,430	1,400	1,040	958	2,210	2,040	1,500	3,110	520	350	284
30	990	2,590	1,260	*2,230	-	2,180	1,920	1,320	2,990	535	350	280
31	874	-	1,120	3,520	-	2,140	-	1,240	-	525	345	-
Total	47,862	38,975	59,830	27,712	55,271	43,487	60,470	56,840	32,627	24,482	12,958	9,807
Mean	1,544	1,299	1,930	894	1,906	1,403	2,016	1,834	1,088	790	418	327
Cfsm	5.89	4.96	7.37	3.41	7.27	5.35	7.69	7.00	4.15	3.02	1.60	1.25
In.	6.79	5.53	8.49	3.93	7.85	6.17	8.58	8.07	4.63	3.48	1.84	1.39
Ac-ft	94,930	77,310	118,700	54,970	109,600	86,260	119,900	112,700	64,710	48,560	25,700	19,450

Calendar year 1951: Max 7,060 Min 293 Mean 1,505 Cfsm 5.74 In. 77.97 Ac-ft 1,090,000
Water year 1951-52: Max 7,060 Min 280 Mean 1,285 Cfsm 4.90 In. 66.75 Ac-ft 932,800

Peak discharge (base, 7,700 cfs).--Oct. 23 (7:30 a.m.) 9,120 cfs (9.92 ft).
* Discharge measurement made on this day.

Lake Ben Morrow near Bull Run, Oreg.

Location.--Lat 45°29'00", long. 122°04'50", in SW¼ sec. 16, T. 1 S., R. 6 E., in control house at Bear Creek Dam of city of Portland, 8½ miles northeast of Bull Run.

Drainage area.--74 sq mi.

Records available.--October 1928 to September 1952.

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

Extremes.--Maximum contents during year, 29,260 acre-ft Oct. 23 (elevation, 1,041.88 ft); minimum, 15,970 acre-ft Oct. 1 (elevation, 1,003.37 ft).
1928-52: Maximum contents, 31,600 acre-ft Mar. 31, 1931 (elevation, 1,047.40 ft); minimum after first filling in May 1929, 13,320 acre-ft Sept. 28, 1951 (elevation, 993.77 ft).

Remarks.--Records excellent. Lake Ben Morrow 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-ft at crest of spillway (elevation, 1,036 ft); dead storage, 213 acre-ft at elevation 890 ft (center of outlet valves).

Cooperation.--Water-stage recorder inspected and capacity table furnished by Portland Water Bureau.

Revisions (water years).--W 814: 1935(M).

Monthly elevation and contents, water year October 1951 to September 1952

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30.....	1,003.37	15,970	-
Oct. 31.....	1,036.83	27,250	+11,280
Nov. 30.....	1,038.82	28,030	+780
Dec. 31.....	1,037.07	27,350	-680
Calendar year 1951...	-	-	-380
Jan. 31.....	1,039.22	28,190	+840
Feb. 29.....	1,036.87	27,270	-920
Mar. 31.....	g1,037.9	27,670	+400
Apr. 30.....	1,037.78	27,620	-50
May 31.....	1,037.10	27,360	-260
June 30.....	1,038.02	27,720	+360
July 31.....	1,032.17	25,480	-2,240
Aug. 31.....	1,017.37	20,300	-5,180
Sept.30.....	1,003.83	16,100	-4,200
Water year 1951-52...	-	-	+130

† Elevation at 12 p.m.
g Computed from graph based on observer's once-daily staff-gage readings.

Bull Run River below Lake Ben Morrow, Oreg.

Location.--Lat 45°29'00", long. 122°04'50", in SW¼ sec. 16, T. 1 S., R. 6 E., in gatehouse at Bear Creek Dam on Bull Run River, 500 ft downstream from Bear Creek, 1,000 ft upstream from Fivemile Creek, and 8½ miles northeast of Bull Run.

Drainage area.--74 sq mi, approximately.

Records available.--October 1929 to September 1952.

Gage.--Water-stage recorder above crest of spillway, and scales indicating number of turns outlet needle valves are open. Datum of gage is at mean sea level (levels by Portland Water Bureau). Prior to Oct. 1, 1934, at site half a mile downstream at different datum.

Average discharge.--23 years, 577 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 5,660 cfs Oct. 23 (elevation, 1.041.88 ft); minimum, no flow Oct. 1, 2, 3.
1929-52: Maximum discharge at dam, 16,100 cfs Mar. 31, 1931 (elevation, 1,047.40 ft with one valve open 30 turns, present datum); no flow part of Oct. 27, 1939, and Oct. 1, 2, 3, 1951.

Remarks.--Records good. Daily discharge determined by combining discharge through valves near base of dam and that over crest of spillway (elevation, 1,036 ft). Leakage at dam is less than 1 cfs and is disregarded. Flow regulated by Bull Run Lake and Lake Ben Morrow (see preceding page). 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.

Revisions (water years).--W 904: Drainage area, 1931(M).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	255	1,970	389	2,690	294	925	891	413	891	204	156
2	0	230	1,550	341	2,720	266	735	753	377	630	188	*191
3	583	245	1,550	343	2,850	266	808	648	371	503	201	201
4	1,420	326	1,750	321	4,440	288	725	594	363	419	214	178
5	792	260	1,680	260	2,330	291	848	542	360	360	216	121
6	548	240	1,050	255	1,380	260	1,130	496	360	304	204	109
7	383	218	718	230	984	250	1,100	480	332	266	186	109
8	288	210	568	215	800	245	832	732	310	255	181	101
9	255	215	477	228	690	321	658	808	299	248	190	98
10	218	419	419	260	689	732	627	760	294	220	194	101
11	215	697	413	230	662	614	607	808	302	205	184	98
12	516	2,280	416	215	662	480	568	746	304	196	197	98
13	1,000	2,010	419	200	571	413	600	848	288	187	208	98
14	1,960	1,480	407	187	490	365	753	1,040	299	169	175	98
15	1,640	959	401	182	470	326	792	1,030	470	215	166	126
16	1,110	662	840	172	470	316	721	882	371	*187	148	145
17	771	510	840	169	425	294	725	925	332	161	139	132
18	594	432	1,190	169	377	304	925	900	302	159	135	131
19	1,140	377	1,280	160	354	291	1,110	857	282	159	166	183
20	2,760	348	840	160	319	272	874	968	266	140	184	190
21	1,820	324	620	160	294	266	711	1,210	310	143	164	168
22	2,260	316	2,830	152	250	255	690	984	360	159	173	168
23	4,300	288	1,310	159	235	332	637	840	326	176	158	184
24	2,030	260	840	215	235	1,510	648	739	299	172	130	176
25	1,170	304	607	310	235	2,070	768	690	280	170	108	137
26	776	925	480	371	260	1,650	848	620	266	185	112	130
27	574	1,100	425	484	291	1,280	908	607	255	166	115	121
28	477	1,190	383	490	299	1,100	1,190	597	272	166	138	117
29	401	1,290	648	484	299	925	874	562	972	186	149	118
30	348	1,480	574	1,020	-	1,010	795	503	1,590	206	149	128
31	285	-	444	2,230	-	1,100	-	451	-	211	148	-
Total	30,646	19,850	27,939	10,761	26,751	18,386	24,132	23,511	11,625	7,814	5,224	4,111
Mean	989	662	901	347	922	593	804	758	388	252	169	137
Ac-ft	60,790	39,370	55,420	21,340	53,060	36,470	47,870	46,630	23,060	15,500	10,360	8,150

Adjusted for storage in Lake Ben Morrow

Mean	1,172	675	890	361	906	600	804	754	394	216	84.2	66.4
Cfsm	15.8	9.12	12.0	4.88	12.2	8.11	10.9	10.2	5.32	2.92	1.14	0.897
In.	18.26	10.17	13.87	5.62	13.21	9.34	12.12	11.75	5.93	3.37	1.31	1.00
Ac-ft	72,070	40,150	54,740	22,180	52,140	36,870	47,820	46,370	23,420	13,260	5,180	3,950

Observed

Calendar year 1951: Max 4,300 Min 0 Mean 651 Ac-ft 471,600
Water year 1951-52: Max 4,440 Min 0 Mean 576 Ac-ft 418,000

Adjusted

Calendar year 1951: Mean 651 Cfsm 8.80 In. 119.40 Ac-ft 471,200
Water year 1951-52: Mean 576 Cfsm 7.78 In. 105.95 Ac-ft 418,200

Peak discharge (base, 4,800 cfs).--Oct. 23 (7:30 a.m.) 5,660 cfs (1,041.88 ft); Feb. 4 (1 a.m.) 5,150 cfs (1,041.52 ft).
* Discharge measurement made on this day.

Bull Run River near Bull Run, Oreg.

Location.--Lat 45°27'20", long. 122°07'50" (revised), in SE¼ sec. 25, T. 1 S., R. 5 E., on left bank 1½ miles upstream from intake of pipeline for water supply of city of Portland and 5 miles east of Bull Run.
Drainage area.--102 sq mi.
Records available.--January 1895 to September 1952.
Gage.--Water-stage recorder. Altitude of gage is 760 ft (from surveys by city of Portland). Prior to Aug. 1, 1909, staff gages at site 1½ miles downstream and 1,000 ft above pipeline intake, at different datum. Datum of gage at present site was raised 2 ft July 26, 1916, lowered 0.5 ft July 22, 1924, and lowered 0.5 ft again Aug. 25, 1928. Supplementary staff gage 1½ miles downstream on headwall of intake works is read in general 3 times a day (every half hour during floods) by employees of Portland Water Bureau.
Average discharge.--45 years (1907-52), 741 cfs (adjusted for storage since 1929).
Extremes.--Maximum discharge during year, 7,040 cfs Oct. 23 (gage height, 7.52 ft); minimum, 128 cfs Sept. 12-15.
1895-1952: Maximum discharge, 20,600 cfs Mar. 31, 1931 (gage height, 13.8 ft), by computation of peak flow over dam; minimum, 63 cfs Aug. 13-16, 1926.
Remarks.--Records excellent except those for periods of doubtful or no gage-height record, which are good. Flow regulated by Bull Run Lake and Lake Ben Morrow (see p. 110). Flow from Bull Run Lake is not artificially regulated but reaches river through surface and underground channels. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.
Cooperation.--Water-stage recorder inspected by Portland Water Bureau.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	124	3.0	1,090
1.0	205	4.0	1,950
1.5	350	5.0	3,070
2.0	525	6.0	4,470
2.5	760	7.0	6,090

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	293	374	2,340	525	*3,670	452	1,010	1,010	458	1,090	231	169
2	413	344	1,650	478	3,740	424	1,030	868	434	754	221	194
3	1,250	364	2,080	441	3,960	434	1,050	742	424	601	221	200
4	1,700	446	2,100	420	5,550	476	929	655	413	514	240	189
5	957	374	2,210	396	2,980	462	1,060	605	*420	455	243	150
6	641	335	1,380	364	1,820	441	1,380	569	406	410	223	138
7	500	317	1,030	344	1,340	413	1,290	573	374	364	203	138
8	*402	311	742	332	1,080	388	999	874	350	329	200	138
9	347	314	610	364	964	486	814	922	341	311	210	133
10	311	518	549	406	908	985	748	874	354	290	218	129
11	326	924	537	360	936	826	730	908	378	272	208	a129
12	628	2,590	541	338	901	660	680	856	374	251	215	a128
13	1,190	2,390	529	317	766	*585	760	1,010	332	240	228	128
14	2,480	1,870	504	314	675	529	950	1,220	368	226	d200	128
15	1,980	1,260	483	302	660	483	964	1,150	533	251	d190	148
16	1,360	908	1,040	293	623	452	862	1,010	427	*240	d170	a167
17	957	695	1,010	275	573	434	862	1,050	385	213	d160	a150
18	748	589	2,850	275	522	472	1,890	1,010	357	208	d150	a150
19	1,190	522	1,710	281	500	427	1,310	971	341	208	d180	a200
20	3,280	*494	1,110	299	469	399	1,030	1,120	326	200	203	a210
21	2,210	452	*1,600	290	434	374	838	1,380	413	198	d180	a190
22	2,760	424	3,640	281	399	360	790	1,090	452	205	196	a190
23	5,270	385	1,720	299	392	500	*736	915	392	213	d180	a210
24	2,590	357	1,130	364	382	2,100	748	826	374	215	d150	a200
25	1,470	413	856	518	392	2,810	887	748	357	210	*135	159
26	1,010	1,270	685	581	438	2,140	943	680	338	223	137	148
27	736	1,220	593	700	472	1,540	1,010	670	332	210	138	140
28	601	1,390	565	685	469	1,330	1,360	641	368	205	148	133
29	541	1,530	929	685	472	1,120	1,010	614	1,170	221	165	135
30	476	1,740	778	1,400	-	1,270	929	549	1,910	228	163	142
31	424	-	623	2,990	-	1,370	-	497	-	237	163	-
Total	39,041	25,122	38,124	15,915	36,487	25,142	28,799	26,607	13,901	9,792	5,869	4,763
Mean	1,259	837	1,230	513	1,258	811	960	858	463	316	189	159
Ac-ft	77,440	49,830	75,620	31,570	72,370	49,870	57,120	52,770	27,570	19,420	11,640	9,450

Adjusted for change in contents in Lake Ben Morrow

Mean	1,443	851	1,219	500	1,242	818	959	854	469	279	105	88.2
Cfsm	14.1	8.34	12.0	4.90	12.2	8.02	9.40	8.37	4.60	2.74	1.03	0.865
In.	16.31	9.30	13.78	5.65	13.13	9.24	10.49	9.65	5.13	3.16	1.19	0.97
Ac-ft	88,720	50,610	74,940	30,730	71,450	50,270	57,070	52,510	27,930	17,180	6,460	5,250

Observed

Calendar year 1951: Max 5,270 Min 150 Mean 813 Ac-ft 588,600
Water year 1951-52: Max 5,550 Min 128 Mean 737 Ac-ft 534,700

Adjusted

Calendar year 1951: Mean 812 Cfsm 7.96 In. 108.12 Ac-ft 588,200
Water year 1951-52: Mean 737 Cfsm 7.26 In. 98.00 Ac-ft 534,800

Peak discharge (base, 5,400 cfs).--Oct. 23 (7 a.m.) 7,040 cfs (7.52 ft); Feb. 3 (11:30 p.m.) 6,730 cfs (7.36 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station below Lake Ben Morrow.
d Doubtful gage-height record; discharge estimated as explained in footnote "a."

Little Sandy River near Bull Run, Oreg.

Location.--Lat 45°25'00", long. 122°10'20", in NE¼ sec. 10, T. 2 S., R. 5 E., on right bank 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.

Drainage area.--22.3 sq mi.

Records available.--May 1911 to April 1913 (fragmentary), July 1919 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 710.51 ft above mean sea level, adjustment of 1924 (levels by Portland General Electric Co.). May 23, 1911, to Apr. 29, 1913, staff gage at site seven-eighths of a mile downstream at different datum. July 1, 1919, to Sept. 30, 1931, water-stage recorder at datum 0.28 ft higher.

Average discharge.--33 years (1919-52), 140 cfs.

Extremes.--Maximum discharge during year, 1,550 cfs Oct. 23 (gage height, 5.94 ft); minimum, 13 cfs Sept. 20-30.
1911-13, 1919-52: Maximum discharge, 3,950 cfs Nov. 20, 1921 (gage height, 9.18 ft, present datum), from rating curve extended above 2,000 cfs; minimum, 8 cfs Aug. 20, Sept. 16, 17, 1940.

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

Cooperation.--Water-stage recorder graph furnished by Portland General Electric Co.

Revisions (water years).--W 1154: 1949.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 29				June 30 to Sept. 30			
2.3	34	4.0	388	1.9	12	3.0	140
2.6	62	4.5	605	2.1	22	3.5	275
3.0	120	5.0	890	2.3	36	4.0	470
3.5	230	5.5	1,220	2.6	69	4.5	740

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	59	396	124	748	91	199	179	78	286	23	14
2	242	54	270	106	783	85	232	150	74	195	22	14
3	510	62	366	102	858	90	218	134	70	147	21	14
4	228	85	359	96	903	91	206	120	67	116	20	14
5	128	61	345	90	510	85	242	113	64	98	20	15
6	85	54	255	82	334	84	284	110	62	82	20	16
7	64	50	197	77	255	80	242	118	58	74	20	16
8	*52	50	163	73	218	77	190	260	53	64	20	20
9	44	51	132	84	194	106	165	211	*51	59	20	23
10	38	88	118	91	183	170	159	201	64	54	19	18
11	44	179	113	84	188	144	155	194	74	49	18	16
12	159	400	110	77	172	*126	144	190	77	46	18	19
13	248	342	102	73	146	113	170	225	62	44	18	19
14	464	291	92	72	134	100	218	272	95	41	18	16
15	294	216	91	68	136	91	199	235	134	39	18	15
16	235	168	235	62	126	84	174	213	90	36	19	15
17	150	132	220	58	115	84	185	218	75	*35	18	14
18	124	112	370	59	103	88	232	206	67	34	18	14
19	196	100	304	58	97	81	248	199	60	34	18	14
20	528	98	220	59	88	77	181	230	60	32	17	13
21	400	*91	*324	54	82	75	161	314	113	32	*16	13
22	515	84	556	54	78	72	155	216	126	32	16	13
23	1,020	77	310	60	77	150	142	183	87	31	16	13
24	453	70	225	94	80	858	*161	168	91	30	16	13
25	255	85	176	110	84	948	190	153	85	28	16	13
26	179	235	148	117	97	569	188	132	75	27	16	13
27	134	188	140	130	98	384	211	128	77	27	16	13
28	106	199	134	128	98	307	275	120	97	25	16	13
29	96	261	204	136	100	248	179	126	592	25	15	13
30	80	307	179	*266	-	255	176	102	550	24	15	13
31	68	-	150	582	-	248	-	90	-	23	15	-
Total	7,311	4,249	7,004	3,326	7,085	6,059	5,881	5,510	3,328	1,869	558	449
Mean	236	142	226	107	244	195	196	178	111	60.3	18.0	15.0
Cfsm	10.6	6.37	10.1	4.80	10.9	8.74	8.79	7.98	4.98	2.70	0.807	0.673
In.	12.19	7.09	11.68	5.55	11.82	10.10	9.81	9.19	5.55	3.12	0.93	0.75
Ac-ft	14,500	8,430	13,890	6,600	14,050	12,020	11,660	10,930	6,600	3,710	1,110	891

Calendar year 1951: Max 1,020 Min 14 Mean 157 Cfsm 7.04 In. 95.82 Ac-ft 114,000
Water year 1951-52: Max 1,020 Min 13 Mean 144 Cfsm 6.46 In. 87.78 Ac-ft 104,400

Peak discharge (base, 1,400 cfs).--Oct. 23 (7:30 a.m.) 1,550 cfs (5.94 ft).
* Discharge measurement made on this day.

Bull Run River at Bull Run, Oreg.

Location.--Lat 45°26'20", long. 122°14'05", in NE¼ sec. 6, T. 2 S., R. 5 E., on left bank at Bull Run, 450 ft downstream from tailrace of Portland General Electric Co.'s powerplant and 1.5 miles downstream from Little Sandy River.

Drainage area.--136 sq mi.

Records available.--August 1949 to September 1952.

Gage.--Water-stage and water-temperature recorder. Altitude of gage is 310 ft (by barometer).

Extremes.--Maximum discharge during year, 8,400 cfs Feb. 3 (gage height, 11.47 ft); minimum, 12 cfs Aug. 24; minimum daily, 19 cfs Sept. 14, 28.
1949-52: Maximum discharge, 10,200 cfs (revised) Feb. 24, 1950 (gage height, 12.45 ft); minimum, 9 cfs Sept. 24, 1951; minimum daily, 10 cfs Sept. 23, 1951.
Revisions.--Maximum discharge for water year 1950 has been revised to 10,200 cfs Feb. 24, 1950 (gage height, 12.45 ft), superseding figure published in Water-Supply Paper 1184.

Remarks.--Records good except those for periods of no gage-height record, which are fair. About 85,000 acre-ft annually diverted above station by Portland Water Bureau. Low and medium flows largely regulated by Portland General Electric Co.'s powerplant but only slight regulation at extreme high flows. Water which passes through powerplant is diverted from Sandy and Little Sandy Rivers.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	17	3.0	188	7.0	2,300
1.0	32	3.5	280	9.0	4,600
1.5	56	4.0	430	10.5	6,850
2.0	89	5.0	850		
2.5	132	6.0	1,440		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	636	991	3,270	1,290	4,500	1,100	1,830	1,790	560	1,910	588	26
2	1,200	926	2,570	1,220	4,760	798	1,840	1,600	1,060	1,490	636	*569
3	2,060	910	3,070	1,140	4,840	1,100	1,850	1,460	940	1,280	407	591
4	2,500	403	3,100	1,170	6,550	1,160	1,700	1,240	969	1,090	531	506
5	*748	954	*3,170	1,040	3,930	1,140	1,900	1,270	949	1,050	540	416
6	1,240	912	2,260	949	2,770	1,100	2,170	1,240	*919	733	530	176
7	654	908	1,820	960	2,170	1,040	2,080	1,210	848	926	541	20
8	1,040	910	1,590	1,000	1,850	992	1,770	1,610	272	817	530	*570
9	836	860	1,360	1,040	1,730	823	1,590	1,640	861	810	512	586
10	754	1,100	1,310	a1,200	1,680	1,720	1,500	1,550	890	788	387	581
11	713	1,220	1,190	a1,100	1,680	1,600	1,480	1,660	984	767	534	376
12	1,250	a3,800	1,270	a1,000	1,710	1,380	1,400	1,530	976	704	507	335
13	1,830	a3,300	1,260	a700	1,540	*1,340	1,340	1,680	919	179	492	92
14	2,800	2,800	1,220	a900	1,470	1,270	1,690	2,020	904	752	518	19
15	2,960	2,080	1,130	a850	1,390	1,160	1,730	1,930	787	680	565	*448
16	2,140	1,700	1,670	a800	1,280	845	1,600	1,740	1,000	560	597	430
17	1,670	1,430	1,810	a750	887	1,100	1,580	1,750	970	291	22	449
18	1,390	1,290	2,920	a750	1,230	1,160	1,830	1,650	918	593	466	440
19	1,800	1,500	2,690	a700	1,160	1,110	2,090	1,670	866	552	472	378
20	4,270	*1,150	*1,970	a450	1,100	1,060	1,660	1,840	884	562	459	134
21	3,020	1,130	2,350	a850	1,060	1,030	1,570	2,190	992	581	450	28
22	3,800	1,070	4,760	a850	1,020	864	1,470	1,900	717	618	462	456
23	4,410	1,050	2,670	a850	994	876	1,400	1,650	1,020	616	399	440
24	3,740	975	2,050	a1,000	750	3,320	1,380	1,470	948	640	147	456
25	2,310	782	1,680	a1,100	1,010	4,020	1,560	1,210	995	641	446	468
26	1,760	2,090	1,520	a1,200	1,080	3,180	1,610	1,330	914	582	*456	420
27	1,500	1,970	1,380	a1,100	1,100	2,450	1,730	1,260	892	370	455	73
28	1,250	2,190	1,330	a1,400	1,110	2,200	*2,200	1,260	949	568	459	19
29	1,190	2,330	1,780	a1,400	1,110	1,830	1,790	1,330	1,670	547	464	485
30	1,080	2,640	1,660	a2,000	-	1,860	1,630	1,140	2,980	509	396	438
31	1,050	-	1,410	*3,760	-	2,260	-	1,090	-	500	261	-
Total	57,601	45,371	63,240	34,519	57,461	46,888	50,970	47,910	29,553	22,706	14,229	10,425
Mean	1,858	1,512	2,040	1,114	1,981	1,513	1,699	1,545	985	732	459	348
Ac-ft	114,200	89,990	125,400	68,470	114,000	93,000	101,100	95,030	58,620	45,040	28,220	20,680

Calendar year 1951: Max 5,240 Min 10 Mean 1,418 Ac-ft 1,026,000
Water year 1951-52: Max 6,550 Min 19 Mean 1,314 Ac-ft 953,800

131.55

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage when available, weather records, and records for Sandy River below Bull Run River near Bull Run.

Sandy River below Bull Run River, near Bull Run, Oreg.

Location.--Lat 45°27'20", long. 122°14'50", in NW¼ sec. 30, T. 1 S., R. 5 E., on left bank 1 mile downstream from Bull Run River and 2 miles northwest of Bull Run.

Drainage area.--440 sq mi.

Records available.--April 1910 to September 1914, October 1929 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 202 ft (from river-profile map). Prior to Oct. 31, 1929, staff gage at site three-quarters of a mile upstream at different datum.

Average discharge.--26 years (1910-11, 1912-14, 1929-52), 2,270 cfs.

Extremes.--Maximum discharge during year, 17,900 cfs Feb. 3 (gage height, 11.56 ft); minimum, 58 cfs Sept. 30, but may have been slightly less during August or September when lower intake was sluggish; minimum daily, 66 cfs Sept. 28.
1910-14, 1929-52: Maximum discharge, 58,000 cfs Mar. 31, 1931 (gage height, 20.6 ft), from rating curve extended above 18,000 cfs; minimum, 53 cfs Oct. 4, 1931 (gage height, 0.53 ft); minimum daily, that of Sept. 28, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station for irrigation during year; about 85,000 acre-ft was diverted from Bull Run River by Portland Water Bureau. Flow slightly regulated by Bull Run Lake and Lake Ben Morrow of Portland Water Bureau; considerable diurnal fluctuation by Bull Run powerplant of Portland General Electric Co.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 23				Apr. 24 to Sept. 30			
2.5	730	7.0	5,960	0.7	60	3.0	1,010
3.0	1,020	9.0	10,200	1.0	115	4.0	1,810
4.0	1,810	11.0	16,000	1.5	255	5.0	2,840
5.0	2,840			2.0	445	7.0	5,960

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,000	a1,450	7,080	1,850	*9,260	1,630	a3,600	3,160	1,280	3,410	639	128
2	a1,700	a1,300	5,400	1,710	10,200	1,260	a3,600	2,790	1,730	2,530	682	593
3	a2,800	a1,350	6,070	1,590	10,400	1,560	a3,200	2,500	1,560	2,090	470	629
4	*3,460	a1,450	6,190	1,570	14,400	1,620	a3,000	2,180	1,600	1,790	576	560
5	2,170	a1,350	*6,910	1,480	8,650	1,550	a3,200	2,150	*1,580	1,650	594	462
6	1,390	a1,250	4,730	1,280	5,750	1,480	a4,200	2,060	1,520	1,230	566	288
7	748	a1,200	3,390	1,330	4,460	1,410	a3,900	2,070	1,370	1,310	588	122
8	1,110	a1,200	2,780	1,280	3,610	1,330	a3,600	2,800	742	1,180	576	586
9	a850	a1,200	2,350	1,340	3,250	1,210	a2,900	2,830	1,310	1,140	558	630
10	a750	a1,400	2,160	1,550	3,090	2,430	a2,700	2,750	1,360	1,090	469	622
11	a900	a2,500	2,080	1,430	3,130	2,300	a2,600	2,980	1,480	1,060	552	430
12	a1,300	a5,200	2,100	1,330	3,020	1,970	a2,600	2,890	1,380	954	561	404
13	a2,000	a4,600	2,090	970	2,580	*1,820	a2,800	3,610	1,240	451	544	212
14	a3,400	a4,000	1,910	1,290	2,370	1,710	a3,000	4,020	1,300	1,000	569	*89
15	4,200	a3,500	1,750	1,240	2,280	1,560	a2,900	3,810	1,500	894	618	452
16	a3,200	a2,900	2,770	1,150	2,060	1,410	a2,800	3,390	1,450	728	672	449
17	a2,100	a2,400	2,890	1,080	1,590	a1,600	a3,200	3,490	1,320	724	135	469
18	a1,700	a2,100	5,170	1,080	1,840	a1,600	a3,500	3,320	1,240	*716	510	453
19	a2,700	*1,810	4,860	953	1,730	a1,600	a4,000	3,320	1,150	668	528	404
20	a5,500	1,670	*3,320	664	1,600	a1,500	a3,400	3,720	1,170	679	514	190
21	4,500	1,580	3,700	1,160	1,510	a1,400	a3,200	4,460	1,460	694	514	77
22	a7,000	1,520	9,500	1,140	1,430	a1,300	a2,900	3,590	1,200	703	524	465
23	a10,500	a1,400	5,120	1,150	1,430	a1,400	a2,750	3,140	1,370	694	478	446
24	a9,200	a1,400	3,650	1,300	1,160	a5,000	*2,620	2,850	1,270	736	273	462
25	a5,200	a1,500	2,840	1,490	1,440	a7,000	3,250	2,480	1,330	711	508	486
26	a4,000	3,460	2,430	1,590	1,630	a6,500	3,510	2,490	1,180	666	*507	444
27	a2,800	3,400	2,240	1,460	1,710	a5,000	3,690	2,350	1,190	463	510	128
28	a2,300	3,960	2,070	1,860	1,720	a4,000	4,460	2,340	1,350	643	500	66
29	a2,000	4,500	2,760	1,990	1,670	a3,600	3,370	2,390	4,070	639	508	474
30	a1,800	5,010	2,520	3,780	-	a3,600	3,070	2,020	5,890	589	450	436
31	a1,600	-	2,180	7,620	-	a4,000	-	1,880	-	562	346	-
Total	93,878	71,560	114,990	50,707	108,970	75,350	97,520	89,830	47,592	32,394	16,039	11,656
Mean	3,028	2,385	3,709	1,636	3,758	2,430	3,251	2,898	1,586	1,045	517	389
Cfsm	6.88	5.42	8.43	3.72	8.54	5.52	7.39	6.59	3.60	2.37	1.17	0.884
In.	7.93	6.05	9.72	4.29	9.21	6.37	8.24	7.59	4.02	2.74	1.36	0.99
Ac-ft	186,200	141,900	228,100	100,600	216,100	149,500	193,400	178,200	94,400	64,250	31,810	23,120

Calendar year 1951: Max 11,300 Min 75 Mean 2,587 Cfsm 5.88 In. 79.83 Ac-ft 1,873,000
Water year 1951-52: Max 14,400 Min 66 Mean 2,214 Cfsm 5.03 In. 68.51 Ac-ft 1,608,000

Peak discharge (base, 17,000 cfs).--Feb. 3 (11 p.m.) 17,900 cfs (11.56 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for station at Marmot and Bull Run River at Bull Run.

Washougal River near Washougal, Wash.

Location.--Lat 45°37'20", long. 122°18'00", in SE¼ sec. 27, T. 2 N., R. 4 E., on right bank half a mile upstream from Cougar Creek and 5½ miles northeast of Washougal.

Drainage area.--108 sq mi.

Records available.--September 1944 to September 1952.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 175 ft (from topographic map).

Average discharge.--8 years, 896 cfs.

Extremes.--Maximum discharge during year, 13,000 cfs Feb. 3 or 4 (gage height, 12.84 ft); minimum observed, 51 cfs Sept. 22, 23 (gage height, 1.44 ft).

1944-52: Maximum discharge, 17,600 cfs (revised) Feb. 17, 1949, Feb. 24, 1950 (gage height, 15.5 ft, from graph based on gage readings), from rating curve extended above 12,000 cfs on basis of logarithmic plotting; minimum observed, 46 cfs Sept. 22, 1951 (gage height, 1.39 ft).

Revisions.--The figures of maximum discharge for water years 1945-51 have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
1044.....	1945	Feb. 7, 1945	15,700	14.40
1064.....	1946	Dec. 28, 1945	14,000	‡13.4
1094.....	1947	Dec. 11, 1946	15,300	14.20
1124.....	1948	Feb. 22, 1948	8,300	9.80
1154.....	1949	Feb. 17, 1949	17,600	15.5
1184.....	1950	Feb. 24, 1950	17,600	15.5
1216.....	1951	Dec. 23, 1950	9,650	10.74

‡ From graph based on gage readings.

Remarks.--Records good. No diversion or regulation.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1945-47, 1949-50, superseding those published in Water-Supply Papers 1044, 1064, 1094, 1154, and 1184, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1945		1946-Con.		1949	
Feb. 7	6,630	Nov. 25	4,460	Feb. 10	6,030
Dec. 6	5,470	26	5,890	17	12,300
28	10,900	27	6,030		
29	5,190	Dec. 11	12,200	1950	
		12	10,600	Feb. 24	13,600
1946		13	12,000	25	7,850
Nov. 17	3,830	14	7,430		
18	10,700	15	6,780		

Revised peak discharges.--1948-49: Dec. 2 (10 a.m.) 6,110 cfs; Dec. 9 (4:30 p.m.) 9,200 cfs; Feb. 10 (8 a.m.) 8,450 cfs; Feb. 17 (8 a.m.) 17,600 cfs.

1949-50: Nov. 24 (8 a.m.) 9,800 cfs; Dec. 23 (5 p.m.) 8,320 cfs; Feb. 16 (11 a.m.) 6,280 cfs; Feb. 24 (3 a.m.) 17,600 cfs; Mar. 4 (7 a.m.) 7,920 cfs; Mar. 17 (6 a.m.) 9,500 cfs; Apr. 1 (9 a.m.) 5,440 cfs.

1950-51: Nov. 24 (time unknown) 8,520 cfs (9.46 ft); Dec. 4 (time unknown) 6,990 cfs (8.7 ft); Dec. 23 (time unknown) 9,650 cfs (10.74 ft); Feb. 11 (time unknown) 7,170 cfs (8.75 ft); Mar. 15 (time unknown) 5,120 cfs (7.6 ft).

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
February 1945.....	44,719	6,630	392	1,597	14.8	15.40	88,700
Water year 1944-45..	284,766	6,630	58	780	7.22	98.06	564,800
December 1945.....	53,128	10,900	438	1,714	15.9	18.29	105,400
Calendar year 1945..	352,166	10,900	58	965	8.94	121.27	698,500
Water year 1945-46..	331,105	10,900	67	907	8.40	114.02	656,800
November 1946.....	61,274	10,700	369	2,042	18.9	21.10	121,500
December.....	80,530	12,200	414	2.598	24.1	27.73	159,700
Calendar year 1946..	379,390	12,200	67	1,039	9.62	130.65	752,500
Water year 1946-47..	340,910	12,200	69	934	8.65	117.38	676,100
February 1949.....	59,987	12,300	193	2,142	19.8	20.66	119,000
Water year 1948-49..	311,852	12,300	58	854	7.91	107.39	618,600
Calendar year 1949..	289,938	12,300	58	794	7.35	99.85	575,100
February 1950.....	70,527	13,600	273	2,519	23.3	24.29	139,900
Water year 1949-50..	369,206	13,600	54	1,012	9.37	127.14	732,300
Calendar year 1950..	418,128	13,600	54	1,146	10.6	143.99	829,300

Washougal River near Washougal, Wash.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.4	47	3.0	580	7.0	4,200
1.7	91	3.5	845	8.0	5,770
2.0	164	4.0	1,140	9.0	7,540
2.3	258	5.0	1,890	10.0	9,600
2.6	383	6.0	2,880		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,500	460	*4,200	670	5,600	645	1,240	713	221	370	84	61
2	4,050	402	2,070	645	3,770	600	1,610	645	215	292	84	58
3	3,120	440	3,000	*560	5,770	615	1,530	580	*202	255	82	60
4	1,280	520	3,000	510	*7,920	790	1,350	525	193	224	80	58
5	845	465	3,630	495	3,370	762	1,810	490	193	205	77	57
6	595	383	1,980	470	2,070	718	1,940	440	187	190	77	57
7	515	383	1,350	430	1,650	665	1,530	425	184	173	80	61
8	365	370	1,110	406	1,350	660	1,180	600	173	*156	82	70
9	304	435	900	520	1,210	930	1,020	510	164	148	77	80
10	*273	872	790	610	1,180	2,550	960	490	167	137	73	68
11	313	1,890	713	525	1,320	1,570	990	460	199	140	73	68
12	900	3,630	670	480	1,320	1,140	900	430	196	137	70	73
13	1,890	3,500	625	430	1,050	1,020	1,050	470	173	130	73	70
14	2,600	2,450	575	421	960	845	1,050	525	156	125	68	57
15	1,980	1,380	545	392	845	762	960	520	196	123	*72	54
16	1,890	1,050	1,380	347	762	762	872	475	167	118	73	57
17	1,110	845	1,110	325	702	762	900	470	159	115	70	57
18	845	735	3,370	304	655	*930	960	411	150	113	70	56
19	845	665	2,020	370	610	790	872	388	140	113	70	56
20	3,630	570	1,280	460	565	730	872	383	145	113	70	56
21	1,980	525	2,200	392	520	660	818	500	205	111	70	55
22	2,770	475	3,500	374	490	670	900	421	205	111	67	52
23	8,300	435	1,850	356	480	930	691	378	176	109	67	51
24	*2,880	406	1,320	365	465	3,910	*655	352	167	106	72	54
25	1,610	455	1,050	402	465	3,630	762	330	161	100	89	54
26	1,140	990	900	470	590	2,660	713	300	150	98	84	54
27	930	900	790	790	686	2,020	818	285	159	91	77	54
28	762	1,210	900	818	660	1,890	872	273	196	91	67	55
29	650	1,890	1,420	818	691	1,490	735	273	218	91	67	54
30	590	*2,070	960	2,660	-	1,530	691	255	595	87	67	54
31	510	-	762	3,630	-	1,690	-	241	-	84	62	-
Total	51,972	30,601	49,970	20,445	47,726	39,326	31,251	13,558	5,812	4,456	2,294	1,771
Mean	1,677	1,020	1,612	660	1,646	1,269	1,042	437	194	144	74.0	59.0
Cfsm	15.5	9.44	14.9	6.11	15.2	11.8	9.65	4.05	1.80	1.33	0.685	0.546
In.	17.90	10.54	17.21	7.04	16.43	13.54	10.76	4.67	2.00	1.53	0.79	0.61
Ac-ft	103,100	60,700	99,110	40,550	94,660	78,000	61,990	26,890	11,530	8,840	4,550	3,510

Calendar year 1951: Max 8,300 Min 46 Mean 890 Cfsm 8.24 In. 111.91 Ac-ft 644,500
Water year 1951-52: Max 8,300 Min 51 Mean 817 Cfsm 7.56 In. 103.02 Ac-ft 593,400

Peak discharge (base, 5,000 cfs).--Oct. 23 (time unknown) 9,500 cfs (10.63 ft); Feb. 3 or 4 (time unknown) 13,000 cfs (12.84 ft).

* Discharge measurement made on this day.

Little Washougal River near Washougal, Wash.

Location.--Lat 45°36'45", long. 122°21'30", in SE¼ sec. 31, T. 2 N., R. 4 E., on right bank 20 ft downstream from highway bridge, 1 mile upstream from mouth, and 2½ miles north of Washougal.

Drainage area.--23.8 sq mi.

Records available.--June 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 115 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,130 cfs Oct. 23 (gage height, 6.82 ft); minimum, 4.6 cfs Sept. 22 (gage height, 3.16 ft).
1951-52: Maximum discharge, that of Oct. 23, 1951; minimum, 4.6 cfs Sept. 4, 14, 22, 1951, Sept. 22, 1952.

Remarks.--Records good. Some diversion for domestic use. No regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-22)

3.2	3.8	4.0	61
3.3	6.8	4.5	150
3.5	16.0	5.0	290
3.7	30	5.5	495

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	65	*365	105	495	80	136	40	24	34	9.8	6.8
2	165	62	278	*94	504	74	155	36	23	28	9.8	5.5
3	160	69	373	90	622	92	138	35	*22	25	9.0	5.8
4	96	65	468	87	758	103	130	34	*21	24	8.2	6.1
5	*64	57	446	84	486	114	124	33	21	22	8.2	6.4
6	48	53	341	75	*304	168	116	33	20	19.5	8.6	7.1
7	37	51	257	72	254	142	103	32	20	18	9.0	8.2
8	31	50	209	68	200	122	94	54	19	*16.5	9.8	10
9	28	59	170	87	170	154	84	42	18.5	15.5	8.6	11.5
10	26	85	144	124	144	224	77	38	18.5	15.5	8.2	8.2
11	31	146	126	128	138	221	71	36	27	15	8.2	7.8
12	41	314	116	120	130	188	67	35	26	15	7.4	9.0
13	75	325	103	106	112	165	68	35	22	14	7.8	8.6
14	162	308	92	99	106	165	62	42	27	13	7.8	7.1
15	152	233	97	89	101	142	56	37	29	12.5	*8.2	6.4
16	112	182	132	78	94	126	53	34	22	12.5	8.6	6.8
17	85	150	134	71	89	122	50	31	19.5	12.5	8.2	7.1
18	75	130	251	71	82	*130	49	30	18	12.5	8.2	7.1
19	87	118	254	72	82	128	48	31	16.5	13	8.6	6.8
20	146	103	215	94	75	126	45	31	19	12.5	7.8	6.4
21	192	89	334	87	72	120	42	39	26	12.5	7.4	5.5
22	308	78	459	84	71	120	40	31	25	12	7.1	5.2
23	853	72	308	99	69	171	39	30	19	12.5	7.4	5.5
24	*446	68	236	138	65	620	*37	27	19	13	7.8	5.8
25	278	75	188	146	80	585	36	26	20	12	11.5	6.4
26	200	99	159	144	92	405	35	26	19	11	9.4	6.4
27	152	*97	140	160	90	300	47	24	21	10.5	8.2	7.1
28	126	106	128	158	84	251	53	24	26	9.8	7.4	6.8
29	110	138	168	158	87	203	45	26	47	9.4	7.1	6.4
30	90	198	138	306	-	180	44	24	45	9.4	7.1	6.4
31	75	-	120	459	-	152	-	24	-	9.4	7.1	-
Total	4,547	3,645	6,948	3,753	5,656	5,893	2,144	1,020	700.0	472.0	257.5	210.2
Mean	147	122	224	121	195	190	71.5	32.9	23.3	15.2	8.31	7.01
Cfsm	6.18	5.13	9.41	5.08	8.19	7.98	3.00	1.38	0.979	0.639	0.349	0.295
In.	7.11	5.70	10.86	5.86	8.84	9.21	3.35	1.59	1.09	0.74	0.40	0.33
Ac-ft	9,020	7,230	13,780	7,440	11,220	11,690	4,250	2,020	1,390	936	511	417

Calendar year 1951: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1951-52: Max 853 Min 5.2 Mean 96.3 Cfsm 4.05 In. 55.08 Ac-ft 69,900

Peak discharge (base, 1,100 cfs).--Oct. 23 (8 a.m.) 1,130 cfs (6.82 ft).
* Discharge measurement made on this day.

Middle Fork Willamette River above Salt Creek, near Oakridge, Oreg.

Location.--Lat 43°43'30", long. 122°26'20", in SW¼ sec. 22, T. 21 S., R. 3 E., on right bank 400 ft upstream from Salt Creek and 2 miles southeast (revised) of Oakridge.

Drainage area.--392 sq mi.

Records available.--October 1913 to September 1914, September 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,202.8 ft above mean sea level (river-profile survey). October 1913 to September 1914, staff gage at site 600 ft upstream at different datum.

Average discharge.--18 years, 1,102 cfs.

Extremes.--Maximum discharge during year, 8,060 cfs Feb. 1 (gage height, 6.91 ft); minimum, 352 cfs Sept. 30.

1913-14, 1935-52: Maximum discharge, 34,000 cfs Dec. 28, 1945 (gage height, 12.06 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 201 cfs Nov. 27 to Dec. 2, 1936 (gage height, 1.53 ft).

Revisions.--The maximum discharge for the water year 1914 has been revised to 5,170 cfs Jan. 23, 1914 (gage height, 3.12 ft), superseding figure published in Water-Supply Paper 394.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water year 1914, superseding those published in Water-Supply Paper 394, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1914		1914-Con.		1914-Con.	
Jan. 1	3,130	Jan. 28	2,920	May 8	860
2	3,680	Apr. 15	2,040	9	900
3	2,520	16	2,620	10	1,150
4	2,270	26	900	11	1,250
5	2,140	27	850	12	1,100
7	2,520	28	850	13	1,300
8	2,270	29	830	14	1,400
9	2,140	30	800	15	1,200
21	3,350	May 1	780	16	1,100
22	5,000	2	750	17	1,100
23	5,170	3	800	18	1,050
24	5,000	4	850	19	1,050
25	4,880	5	900	20	1,100
26	5,000	6	900	21	1,500
27	4,160	7	880		

Month	Maximum	Minimum	Mean	Runoff in acre-feet
January 1914	5,170	930	2,430	149,000
April	2,620	700	1,160	69,000
May	1,860	750	1,170	71,900
Water year 1913-14	5,170	280	998	722,000

34.57

Middle Fork Willamette River above Salt Creek, near Oakridge, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.6	355	5.0	2,900
3.0	540	6.0	5,260
3.5	880	7.0	8,370
4.0	1,350		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	552	576	6,350	1,520	6,170	1,300	1,920	1,860	1,530	1,600	490	391
2	702	535	3,730	1,290	6,470	1,170	1,860	1,680	1,460	1,400	485	387
3	856	520	3,710	1,160	4,680	*1,120	1,880	1,510	1,500	1,300	495	387
4	576	510	*3,910	1,080	4,680	1,110	1,860	1,360	1,600	1,200	510	391
5	455	490	3,690	996	3,510	1,050	2,420	1,280	1,700	1,200	485	445
6	408	470	2,350	952	2,720	1,000	3,080	1,250	1,700	1,100	470	404
7	387	455	1,710	888	2,260	960	3,260	1,330	1,600	1,000	465	395
8	359	445	1,420	840	2,050	912	2,720	1,820	1,500	*978	460	408
9	367	445	1,220	832	1,960	920	2,260	1,720	1,600	944	470	530
10	363	654	1,120	1,450	1,850	1,250	2,080	1,700	1,500	920	500	440
11	404	1,580	1,170	1,240	1,900	1,190	2,000	1,850	1,300	880	470	408
12	588	4,320	1,270	1,070	1,810	1,100	1,860	1,920	1,200	840	455	400
13	485	3,000	1,300	936	1,540	1,020	2,060	2,370	1,100	786	450	395
14	485	2,660	1,180	896	1,400	960	2,240	2,280	1,000	737	450	391
15	1,020	1,880	1,070	*816	1,420	904	*2,030	2,000	1,000	716	445	387
16	667	1,380	1,050	765	1,910	864	1,850	1,860	950	681	440	383
17	535	1,150	1,030	702	1,700	824	1,900	2,030	950	648	431	379
18	480	1,010	1,740	681	1,500	848	2,350	2,310	1,000	618	426	375
19	490	952	1,850	667	1,350	856	2,760	2,440	1,000	600	422	371
20	792	936	1,370	709	1,250	800	2,300	2,380	1,100	588	*426	371
21	928	880	1,280	702	1,130	786	1,920	2,140	1,100	570	418	367
22	1,050	793	4,300	674	1,070	779	1,820	1,900	1,000	558	413	363
23	*3,600	730	2,900	895	1,150	1,010	1,850	1,860	1,100	552	408	363
24	2,230	688	2,000	1,000	1,210	6,170	2,080	2,060	1,300	535	404	363
25	1,440	681	1,580	1,240	1,330	4,980	2,490	2,160	1,200	525	404	359
26	1,070	960	1,450	1,190	1,440	4,060	2,680	*2,100	1,100	510	400	355
27	880	1,280	2,550	1,310	1,540	3,340	2,600	2,130	1,100	510	400	355
28	793	2,570	3,450	1,320	1,540	3,200	2,740	2,280	1,300	500	395	355
29	730	2,840	3,660	1,440	1,400	2,680	2,260	2,080	1,700	495	395	355
30	667	5,150	2,840	2,710	-	2,330	1,980	1,810	1,800	490	395	*355
31	612	-	1,960	4,150	-	2,240	-	1,710	-	500	395	-
Total	24,971	40,540	70,210	35,901	63,940	51,733	67,110	59,180	38,990	24,481	13,672	11,628
Mean	806	1,351	2,265	1,158	2,205	1,669	2,237	1,909	1,300	790	441	388
Cfsm	2.06	3.45	5.78	2.95	5.62	4.26	5.71	4.87	3.32	2.02	1.12	0.990
In.	2.37	3.85	6.66	3.41	6.07	4.91	6.37	5.61	3.70	2.32	1.30	1.10
Ac-ft	49,530	80,410	139,300	71,210	126,800	102,600	133,100	117,400	77,340	48,560	27,120	23,060

Calendar year 1951: Max 8,230 Min 320 Mean 1,380 Cfsm 3.52 In. 47.77 Ac-ft 998,800
Water year 1951-52: Max 6,470 Min 355 Mean 1,373 Cfsm 3.50 In. 47.67 Ac-ft 996,400

Peak discharge (base, 4,800 cfs).--Oct. 23 (11 a.m.) 5,700 cfs (6.15 ft); Dec. 1 (8 a.m.) 7,440 cfs (6.72 ft); Dec. 22 (9 to 10 a.m.) 5,610 cfs (6.12 ft); Feb. 1 (11 to 12 p.m.) 8,060 cfs (6.91 ft); Mar. 24 (10 to 11 p.m.) 7,280 cfs (6.67 ft).

* Discharge measurement made on this day.

Note.--No gage-height record June 4 to July 7; discharge estimated on basis of recorded range in stage and records for Salmon Creek near Oakridge.

Salmon Creek near Oakridge, Oreg.

Location.--Lat 43°45'20", long. 122°23'00", in SW¼ sec. 7, T. 21 S., R. 4 E., on right bank a quarter of a mile upstream from Slide Creek and 4 miles east of Oakridge.
Drainage area.--117 sq mi at cable a quarter of a mile above gage, where all discharge measurements are made.
Records available.--October to November 1909 (gage heights and 1 discharge measurement only), February 1913 to October 1919, October 1933 to September 1952. Published as Kelsey River near Hazeldell 1909.
Gage.--Water-stage recorder. Datum of gage is 1,421.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1914, staff gages at several sites within 3 miles of present site at various datums. Oct. 1, 1914, to Oct. 14, 1919, water-stage recorder at site 1 mile downstream at different datum.
Average discharge.--23 years (1913-15, 1917-19, 1933-52), 396 cfs.
Extremes.--Maximum discharge during year, 1,800 cfs Oct. 23 (gage height, 4.34 ft); minimum, 156 cfs Oct. 10, 11 (gage height, 1.41 ft).
1913-19, 1933-52: Maximum discharge, 8,040 cfs Dec. 28, 1945 (gage height, 8.40 ft), from rating curve extended above 4,000 cfs by logarithmic plotting; minimum, 63 cfs Jan. 8, 1937 (gage height, 0.87 ft).
Revisions.--Maximum discharge for the water year 1918 has been revised to 7,150 cfs Jan. 12, 1918 (gage height, 4.35 ft), superseding figure published in Water-Supply Paper 769.
Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. 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 but there is leakage under control gates, 7.9 cfs measured on Aug. 27, 1952.
Revisions (water years).--W 794: 1934. W 814: Drainage area. W 1124: 1935, 1942(M), 1943, 1946(M). Revised figures of discharge, in cubic feet per second, for the water year 1915 (complete daily table given below) and for a period in the water year 1918, superseding figures published in Water-Supply Papers 414 and 484, are given herewith:

Discharge, in cubic feet per second, water year October 1914 to September 1915

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	129	195	180	210	595	d350	390	a280	415	166	142	120
2	230	195	167	230	665	d330	440	a270	a380	164	a141	120
3	340	195	167	230	665	d320	470	a260	a360	164	a140	120
4	270	180	167	250	560	d380	470	a250	a330	164	a139	120
5	230	195	167	250	530	d410	470	a240	a310	166	a138	120
6	230	210	167	250	500	d350	a420	230	a290	222	a137	120
7	195	210	167	250	d480	d310	a390	230	a280	242	a136	120
8	210	195	167	340	d460	d280	a350	210	a270	226	a134	120
9	210	195	167	365	d440	d270	a330	230	a260	230	a133	
10	230	180	172	340	415	d270	a310	415	a250	218	a132	
11	210	180	180	315	365	d260	a310	415	a290	201	a131	a125
12	210	180	167	315	340	d260	a330	470	a380	190	a130	
13	195	290	180	390	d310	d300	365	530	a340	181	a129	
14	195	290	167	630	d300	d400	a350	630	a310	176	128	
15	180	270	154	630	d300	d450	a340	530	a300	171	126	120
16	180	250	167	500	d280	d450	a340	415	a279	168	125	120
17	210	230	167	415	d300	d450	a340	390	270	179	125	120
18	250	230	167	390	d330	d470	a360	500	a262	164	123	119
19	805	210	167	415	d370	d450	a390	665	a254	156	123	119
20	630	210	154	440	d350	d440	415	665	a246	a154	120	119
21	470	195	154	470	d340	d440	a380	665	a237	a152	117	118
22	365	195	154	440	d310	d460	a340	700	a228	a150	117	118
23	290	180	154	365	d300	500	a310	665	a220	a148	119	118
24	270	180	154	290	d300	530	a290	700	a212	a146	120	117
25	230	180	154	250	d320	500	a280	665	204	144	120	117
26	210	180	154	210	d300	470	a280	700	218	138	120	117
27	195	170	167	210	d310	d410	a300	700	204	133	120	116
28	180	160	180	230	d330	d410	a310	735	193	126	120	115
29	167	170	180	230	-	415	a300	630	179	125	120	114
30	180	190	180	250	-	390	290	560	171	136	120	113
31	167	-	180	270	-	365	-	500	-	140	120	-
Total	8,063	6,090	5,169	10,370	11,065	12,090	10,660	15,045	8,142	5,240	3,945	3,590
Mean	260	203	167	335	395	390	355	485	271	169	127	120
Cfsm	2.15	1.68	1.38	2.77	3.26	3.22	2.93	4.01	2.24	1.40	1.05	0.992
In.	2.48	1.87	1.59	3.19	3.40	3.71	3.27	4.62	2.50	1.61	1.21	1.11
Ac-ft	16,000	12,100	10,300	20,600	21,900	24,000	21,100	29,800	16,100	10,400	7,810	7,140

Calendar year 1914: Max 1,430 Min 112 Mean 352 Cfsm 2.89 In. 39.47 Ac-ft 255,000
Water year 1914-15: Max 805 Min 113 Mean 273 Cfsm 2.26 In. 30.56 Ac-ft 197,000

a No gage-height record; discharge estimated on basis of records for Middle Fork Willamette River at Jasper.
d Doubtful gage-height record because of clogged inlets; discharge estimated on basis of records for Middle Fork Willamette River at Jasper.

1917
Nov. 28..... 150
29..... 400
30..... 2,000

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
November 1917.....	-	-	196	1.62	1.81	11,700
Water year 1917-18...	-	-	475	3.93	53.30	344,000

Salmon Creek near Oakridge, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	216	285	1,460	500	1,240	444	775	710	590	535	208	176
2	278	248	1,140	460	1,530	422	740	645	565	480	206	174
3	350	239	1,070	420	1,400	408	700	590	570	458	206	174
4	238	239	*1,110	400	1,520	394	695	535	600	444	211	178
5	188	228	1,100	380	1,290	386	836	502	625	426	202	186
6	174	219	854	360	1,030	374	1,020	498	635	408	199	178
7	167	213	675	340	884	366	1,100	535	585	378	199	178
8	165	208	585	320	775	348	986	745	570	*358	197	192
9	159	206	507	320	720	370	872	705	575	342	204	239
10	156	274	476	360	685	480	808	685	545	326	213	192
11	167	402	480	340	685	462	775	735	502	306	199	182
12	278	998	498	320	655	430	735	750	453	299	197	180
13	222	974	502	320	595	*404	780	896	430	288	195	176
14	254	956	476	*306	560	378	*848	872	426	278	195	174
15	426	745	444	274	590	342	775	775	422	271	192	172
16	306	595	460	255	650	322	710	735	399	264	190	172
17	252	498	440	242	605	318	715	814	404	258	190	170
18	228	458	500	242	550	310	878	872	412	252	188	168
19	236	435	560	239	502	296	980	914	417	248	188	168
20	448	426	500	245	471	285	854	896	435	245	*186	167
21	507	412	500	239	440	278	735	819	440	239	186	165
22	*700	378	1,300	236	417	274	700	740	417	236	184	165
23	1,370	350	1,000	239	422	382	705	735	435	233	184	164
24	998	326	750	245	417	1,570	760	792	462	230	184	164
25	700	310	650	299	430	1,560	938	819	435	228	184	162
26	540	366	550	303	448	1,400	1,010	*797	417	225	182	162
27	453	404	600	322	466	1,220	980	814	417	222	182	162
28	417	615	650	342	471	1,150	1,020	848	480	222	180	162
29	386	786	700	378	458	1,010	860	780	605	219	178	162
30	354	1,190	650	540	-	914	760	695	605	213	176	*160
31	314	-	600	854	-	878	-	630	-	211	176	-
Total	11,645	13,983	21,787	10,640	20,908	18,173	25,050	22,878	14,873	9,342	5,961	5,224
Mean	376	466	703	343	721	586	835	738	496	301	192	174
Cfsm	3.21	3.98	6.01	2.93	6.16	5.01	7.14	6.31	4.24	2.57	1.64	1.49
In.	3.70	4.44	6.93	3.38	6.65	5.78	7.96	7.27	4.73	2.97	1.89	1.66
Ac-ft	23,100	27,730	43,210	21,100	41,470	36,050	49,690	45,380	29,500	18,530	11,820	10,360

Calendar year 1951: Max 2,310 Min 140 Mean 494 Cfsm 4.22 In. 57.27 Ac-ft 357,300
Water year 1951-52: Max 1,570 Min 156 Mean 493 Cfsm 4.21 In. 57.36 Ac-ft 357,900

Peak discharge (base, 1,500 cfs).--Oct. 23 (10 a.m.) 1,800 cfs (4.34 ft); Dec. 1 (7:30 a.m.) 1,600 cfs (4.13 ft); Dec. 22 (about 5 a.m.) 1,740 cfs (4.28 ft); Feb. 3 (9 p.m.) 1,670 cfs (4.21 ft); Mar. 24 (3 p.m.) 1,770 cfs (4.31 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 16 to Dec. 13; discharge estimated on basis of recorded range in stage and records for North Fork of Middle Fork Willamette River near Oakridge and Middle Fork Willamette River near Oakridge.

Waldo Lake Outlet near Oakridge, Oreg.

Location.--Lat 43°46'00", long. 122°03'10", in NW¼ sec. 7, T. 21 S., R. 6 E., on left bank (corrected) on artificial outlet channel of Waldo Lake, 20 miles east of Oakridge.

Drainage area.--30 sq mi, approximately.

Records available.--October 1936 to September 1952.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 5,410 ft (from topographic map).

Average discharge.--16 years, 31.2 cfs.

Extremes.--Maximum discharge during year, 82 cfs Feb. 4 (gage height, 1.96 ft); no flow Oct. 1-22.
1936-52: Maximum discharge, 144 cfs Jan. 2, 1943 (gage height, 2.98 ft), from rating curve extended above 90 cfs; no flow at times.

Remarks.--Records good. At times seiches on Waldo Lake cause rapid changes in stage at gage several times per hour. Lake not artificially 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, 7.9 cfs measured on Aug. 27, 1952.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.0	0	0.6	15
.1	1.3	1.0	31
.3	5.8	2.0	84

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	5.8	27	61	71	64	66	53	55	59	32	8.0
2	0	5.3	28	60	76	62	67	52	55	59	31	7.2
3	0	5.3	31	58	79	62	66	51	54	58	31	6.9
4	0	5.6	35	60	80	62	64	51	54	58	31	6.3
5	0	5.3	40	59	79	64	63	49	55	58	29	6.3
6	0	*4.8	41	58	76	63	62	49	56	58	28	6.1
7	0	4.6	41	57	75	62	62	49	56	57	27	5.8
8	0	4.4	40	57	73	60	61	52	56	56	26	5.8
9	0	4.4	39	57	71	60	60	51	57	55	25	7.2
10	0	6.9	38	62	70	62	58	51	57	54	25	6.6
11	0	10	37	62	70	63	57	49	57	54	24	6.1
12	0	16	36	61	72	62	56	49	57	53	24	5.8
13	0	19	35	60	71	62	56	52	57	53	22	5.6
14	0	22	35	61	70	60	56	53	57	52	22	5.1
15	0	22	34	60	70	58	56	53	57	50	21	4.4
16	0	22	34	60	72	58	55	53	56	49	20	4.4
17	0	20	34	58	73	57	54	52	56	48	19	4.4
18	0	19	37	58	72	60	53	52	55	46	18	3.9
19	0	18	41	58	73	61	54	53	54	45	17	3.6
20	0	18	41	61	73	61	54	54	54	44	16	3.6
21	0	17	43	65	73	61	53	55	56	43	14	3.4
22	0	17	51	70	73	59	52	55	56	*42	13	3.2
23	4.2	16	52	70	76	60	52	55	56	42	13	2.8
24	8.0	16	52	69	75	68	51	54	56	41	12	2.6
25	7.7	16	50	68	72	70	52	54	56	39	11	2.4
26	7.7	17	50	67	70	68	51	54	56	38	11	2.1
27	7.4	18	52	65	68	*67	52	54	56	37	*11	1.9
28	7.4	20	54	64	67	65	54	55	57	36	10	1.9
29	7.2	22	58	63	65	65	53	56	59	35	9.7	1.7
30	6.3	24	62	63	-	66	53	56	60	34	9.1	1.5
31	5.8	-	63	*67	-	68	-	56	-	34	8.2	-
Total	61.7	421.4	1,311	1,919	2,105	1,940	1,703	1,632	1,683	1,487	610.0	136.6
Mean	1.99	14.0	42.3	61.9	72.6	62.6	56.8	52.6	56.1	48.0	19.7	4.55
Ac-ft	122	836	2,600	3,810	4,180	3,850	3,380	3,240	3,340	2,950	1,210	271

Calendar year 1951: Max 124 Min 0 Mean 43.9 Ac-ft 31,800
Water year 1951-52: Max 80 Min 0 Mean 41.0 Ac-ft 29,790

* Discharge measurement made on this day.

North Fork of Middle Fork Willamette River near Oakridge, Oreg.

Location.--Lat 43°45'30", long. 122°30'20", in SW¼ sec. 7, T. 21 S., R. 3 E., on left bank 1 mile upstream from mouth and 2½ miles northwest (revised) of Oakridge.

Drainage area.--246 sq mi.

Records available.--October 1909 to March 1916, September 1935 to September 1952. October 1909 to September 1912 published as "near Hazeldell."

Gage.--Water-stage recorder. Datum of gage is 1,029.6 ft above mean sea level (river-profile survey). Prior to Feb. 26, 1916, water-stage recorder or staff gages at several sites within three-quarters of a mile of present site at various datums. Sept. 16, 1935, to Oct. 3, 1938, staff gage at present site and datum.

Average discharge.--17 years (1935-52), 773 cfs.

Extremes.--Maximum discharge during year, 5,540 cfs Oct. 23 (gage height, 9.49 ft), flow increased about 700 cfs by release from log pond upstream; minimum, 56 cfs July 13 (gage height, 2.23 ft).
1909-16, 1935-52: Maximum discharge, 17,000 cfs Dec. 28, 1945 (gage height, 16.6 ft), from rating curve extended above 8,000 cfs by logarithmic plotting; minimum, 26 cfs Oct. 14, 1939.

Remarks.--Records good. Tunnel and control gates built to divert part of outflow from Waldo Lake into Salmon Creek basin not used during year. Occasional diurnal fluctuations during low-water periods caused by log ponds above station.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Revisions.--Revised figures of discharge, in cubic feet per second, for water years 1914-16, superseding those published in Water-Supply Papers 394, 414, and 444, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1913		1914-Con.		1914-Con.	
Nov. 2	250	Oct. 19	800	Nov. 14	660
6	1,800	20	800	15	600
23	1,000	21	700	16	500
24	1,100	22	600	17	430
25	950	23	470	18	400
		24	350		
1914		Nov. 1	250	1916	
Oct. 1	170	2	320	Feb. 20	1,900
2	200	3	320	21	1,700
3	550	4	290	22	1,600
4	380	6	340	23	1,400
14	240	7	320	24	1,200
15	220	9	270	25	1,100
16	220	10	260	26	1,000
17	240	11	270		
18	300	13	400		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
November 1913.....	1,800	250	748	3.04	3.39	44,500
October 1914.....	800	170	339	1.38	1.59	20,800
November.....	660	250	356	1.45	1.62	21,200
Water year 1914-15.	-	138	492	2.00	27.16	356,000
February 1916.....	5,720	546	1,980	8.05	8.68	114,000

North Fork of Middle Fork Willamette River near Oakridge, Oreg.--Continued

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-22		Oct. 23 to Sept. 30			
3.0	171	2.8	130	5.0	1,090
3.5	330	3.5	310	7.0	2,700
4.0	540	4.0	510	8.1	3,820
5.5	1,470				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	405	465	3,020	1,020	2,700	840	1,590	1,290	912	762	239	174
2	546	424	2,320	900	3,580	780	1,590	1,160	840	665	233	171
3	666	400	2,350	834	*3,400	768	1,570	1,050	846	621	230	171
4	417	388	*2,450	792	3,740	*762	1,540	960	870	570	230	171
5	302	359	2,540	732	2,940	732	1,800	888	936	535	225	188
6	239	342	1,820	704	2,300	709	2,250	852	948	496	222	181
7	226	331	1,440	660	1,890	670	2,360	900	882	456	219	178
8	199	317	1,230	626	1,670	648	2,040	1,290	828	442	219	181
9	188	310	1,050	621	1,530	704	1,750	1,260	840	*420	219	262
10	182	429	954	698	1,450	954	1,640	1,210	798	404	244	206
11	196	800	966	665	1,430	912	1,590	1,290	744	388	225	186
12	385	2,190	978	621	1,360	834	1,520	1,310	665	376	217	178
13	320	2,010	978	590	1,240	774	1,580	1,460	616	358	214	174
14	401	1,900	918	595	1,170	726	1,770	1,480	595	345	212	171
15	772	1,410	846	*555	1,220	692	*1,590	1,360	600	331	206	171
16	525	1,080	870	515	1,360	665	1,470	1,260	550	320	206	160
17	421	894	840	483	1,240	654	1,460	1,340	540	314	209	160
18	373	768	1,120	470	1,120	660	1,750	1,420	555	304	196	158
19	505	692	1,180	465	1,040	638	2,000	1,510	560	298	196	156
20	976	648	966	474	954	616	1,710	1,490	575	292	*199	154
21	1,080	600	978	470	888	600	1,470	1,360	605	283	201	152
22	1,420	570	2,850	465	852	590	1,380	1,220	560	280	196	152
23	*3,220	540	2,020	474	864	816	1,380	1,180	585	277	196	152
24	2,190	510	1,590	575	870	3,310	1,480	1,240	605	274	196	152
25	1,410	506	1,280	626	870	3,110	1,770	1,280	575	268	199	152
26	1,030	580	1,130	610	876	2,760	1,930	1,230	535	262	194	152
27	840	648	1,200	632	900	2,420	1,860	*1,240	530	256	191	152
28	726	1,060	1,390	632	906	2,320	1,900	1,310	654	250	188	146
29	665	1,570	1,520	670	894	2,020	1,590	1,240	924	247	184	142
30	580	2,710	1,410	960	-	1,830	1,380	1,080	930	244	181	*146
31	515	-	1,210	1,600	-	1,810	-	1,020	-	242	176	-
Total	21,920	25,451	45,414	20,734	45,254	36,324	50,710	38,180	21,203	11,580	6,462	5,049
Mean	707	848	1,465	669	1,560	1,172	1,690	1,232	707	374	208	168
Cfsm	2.87	3.45	5.96	2.72	6.34	4.76	6.87	5.01	2.87	1.52	0.846	0.683
In.	3.31	3.85	6.87	3.13	6.84	5.49	7.67	5.77	3.21	1.75	0.98	0.76
Ac-ft	43,500	50,500	90,100	41,100	89,800	72,000	100,600	75,700	42,100	23,000	12,800	10,000

Calendar year 1951: Max 5,250 Min 122 Mean 913 Cfsm 3.71 In. 50.38 Ac-ft 661,300
Water year 1951-52: Max 3,740 Min 142 Mean 897 Cfsm 3.65 In. 49.63 Ac-ft 651,200

Peak discharge (base, 3,500 cfs).--Oct. 23 (11 a.m.) 5,540 cfs (9.49 ft); Dec. 22 (6:30 a.m.) 3,630 cfs (7.93 ft); Feb. 3 (10 p.m.) 4,620 cfs (8.77 ft); Mar. 24 (11 a.m.) 3,740 cfs (8.03 ft).
* Discharge measurement made on this day.

Middle Fork Willamette River below North Fork, near Oakridge, Oreg.

Location.--Lat 43°48'10", long. 122°33'30", in SW¼ sec. 27, T. 20 S., R. 2 E., on left bank half a mile below Whitehead Creek, 4 miles below North Fork of Middle Fork Willamette River, and 7 miles northwest of Oakridge.

Drainage area.--924 sq mi.

Records available.--March 1911 to September 1912, July 1923 to September 1952. Published as "near Hazeldell" 1911-12 and as "at Eula" 1923-50.

Gage.--Water-stage recorder. Datum of gage is 934.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Mar. 22, 1911, to Sept. 30, 1912, staff gage at site 4 miles upstream just below North Fork, at different datum. July 1, 1923, to Aug. 11, 1935, staff gage and Aug. 12, 1935, to Sept. 30, 1950, water-stage recorder at site 4 miles downstream at different datum.

Average discharge.--28 years (1923-26, 1927-52), 2,607 cfs.

Extremes.--Maximum discharge during year, 17,400 cfs Feb. 2 (gage height, 6.86 ft); minimum, 740 cfs Sept. 28.

1911-12, 1923-52: Maximum discharge, 82,200 cfs (revised) Feb. 20, 1927 (gage height, 19.7 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 39,000 cfs by logarithmic plotting; minimum observed, 450 cfs Nov. 24, 25, Dec. 5, 6, 1929, Sept. 4-6, 16, 17, 1931.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
614.....	1925	Dec. 30, 1924	27,000	12.0
634.....	1926	Feb. 6, 1926	19,600	10.5
654.....	1927	Feb. 20, 1927	82,200	19.7
674.....	1928	Mar. 11, 1928	29,600	12.5
694.....	1929	Mar. 21, 1929	21,400	10.9
709.....	1930	Dec. 19, 1929	26,300	12.0
1064.....	1946	Dec. 28, 1945	81,800	18.8

Remarks.--Records good. No diversions; slight regulation above station by log ponds. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 694: 1925-28. W 814: Drainage area for site at Eula. Revised figures of discharge, in cubic feet per second, for scattered periods in the water years 1924, 1926-28, 1930, and 1933, superseding figures published in Water-Supply Papers 594, 634, 654, 674, 709, and 754, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1924		1925-Con.		1926-Con.		1930	
Aug. 1	540	Dec. 31	1,300	Nov. 10	680	Jan. 18	1,200
2	540			11	640	19	1,160
3	540	1926		14	3,000	20	1,080
4	540	Jan. 1	1,300	15	2,200	21	1,060
5	540	2	1,300	16	7,400	22	1,040
6	540	5	2,660	17	4,500	23	1,000
7	540	6	3,190			24	960
8	540	7	3,190	1928		25	925
11	570	8	2,600	Feb. 21	1,900		
12	540	9	2,500	22	2,100	1933	
13	540	10	2,400	23	2,200	May 5	5,500
14	540	18	4,270	24	2,800	6	4,540
15	540	19	4,780	25	2,600	7	4,540
16	540	Apr. 5	3,000	26	2,300	8	4,540
17	540	6	3,500	27	2,100	9	3,750
24	580	7	2,500	28	2,000	10	3,750
28	540	8	2,200	Apr. 17	4,000	11	3,600
29	540	9	2,000	18	4,200	12	3,600
30	540	Nov. 1	750	19	6,200	13	3,450
31	540	2	680	20	5,600	14	3,450
		3	640	21	5,000	15	3,900
1925		4	620	22	4,600	16	4,060
Nov. 25	630	5	600	23	4,300	17	4,220
26	1,020	6	680	24	4,200	18	4,380
27	2,030	7	900	25	4,000	19	3,900
Dec. 18	2,400	8	860	26	3,900	20	3,900
19	2,530	9	740	27	3,900	21	4,060

Middle Fork Willamette River below North Fork, near Oakridge, Oreg.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1924, 1926-28, 1930, 1933

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
July 1924	-	-	610	0.648	0.75	37,500
August	1,080	530	593	.630	.73	36,500
Water year 1923-24	11,400	495	1,990	2.11	28.83	1,450,000
November 1925	3,050	500	1,050	1.12	1.25	62,500
December	7,100	1,110	2,550	2.71	3.12	157,000
January 1926	4,780	1,300	2,910	3.09	3.56	179,000
April	3,500	1,350	2,020	2.15	2.40	120,000
Water year 1925-26	14,400	480	1,800	1.91	25.91	1,300,000
November 1926	14,400	600	3,680	3.91	4.36	219,000
October 1927	-	-	1,600	1.70	1.96	98,400
February 1928	4,530	1,610	2,380	2.53	2.73	137,000
April	7,760	3,310	4,340	4.61	5.14	258,000
Water year 1927-28	22,000	555	2,790	2.96	40.35	2,020,000
January 1930	4,010	1,240	1,660	1.76	2.03	102,000
Water year 1929-30	23,500	450	1,760	1.87	25.35	1,270,000
May 1933	8,960	3,450	5,000	5.31	6.12	307,000
Water year 1932-33	17,800	604	3,040	3.23	43.89	2,200,000

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.7	740	4.0	5,000
2.0	1,050	5.0	8,300
2.5	1,700	6.5	15,300
3.0	2,560		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,410	1,560	13,200	3,880	12,500	3,100	5,210	4,550	3,650	3,300	1,070	870
2	1,780	1,470	*8,900	3,320	*15,100	2,840	5,030	4,080	3,460	2,910	1,060	860
3	*2,180	1,400	*8,540	3,010	*11,200	2,740	4,940	3,680	3,480	2,720	1,060	860
4	1,490	1,380	9,300	2,800	12,400	*2,700	4,790	3,340	3,720	2,660	1,090	860
5	1,160	1,320	9,380	2,600	9,500	2,580	5,900	3,100	3,980	2,520	1,080	962
6	1,020	1,270	6,480	2,480	7,420	2,460	7,320	3,010	4,150	2,270	1,030	910
7	962	1,230	4,880	2,320	6,140	2,340	7,740	3,210	3,820	2,110	1,020	890
8	910	1,200	4,050	2,200	5,510	2,250	6,800	4,520	3,630	2,010	1,020	930
9	880	1,170	3,460	2,180	5,090	2,320	5,780	4,380	3,700	*1,960	1,020	1,220
10	860	1,610	3,100	3,100	4,820	3,170	5,330	4,200	3,510	1,910	1,090	1,030
11	920	3,060	3,210	2,930	4,790	3,080	5,150	4,580	3,150	1,850	1,020	940
12	1,470	9,180	3,340	2,560	4,580	2,840	4,850	4,670	2,820	1,790	995	920
13	1,240	7,460	3,370	2,320	4,050	2,620	5,150	5,540	2,560	1,680	973	900
14	1,290	6,940	3,100	2,290	3,720	2,460	5,720	5,510	2,420	1,610	973	870
15	2,520	5,120	2,840	*2,110	3,850	2,320	*5,180	4,940	2,400	1,560	973	860
16	1,740	3,820	2,820	1,980	4,730	2,230	4,670	4,520	2,230	1,490	973	850
17	1,420	3,150	2,780	1,870	4,320	2,160	4,640	4,940	2,270	1,420	962	850
18	1,270	2,760	4,170	1,800	3,880	2,230	5,690	5,360	2,360	1,380	940	850
19	1,400	2,540	4,760	1,780	3,550	2,180	6,620	5,750	2,460	1,360	940	830
20	2,340	2,460	3,650	1,880	3,230	2,110	5,630	5,690	2,560	1,320	930	830
21	2,860	2,310	3,340	1,850	2,970	2,040	4,820	5,180	2,680	1,290	*930	820
22	3,530	2,100	11,100	1,840	2,820	2,010	4,490	4,640	2,440	1,270	920	820
23	9,680	1,950	7,920	1,840	2,950	2,580	4,550	4,520	2,660	1,240	920	820
24	*6,620	1,850	5,900	2,340	3,080	14,300	4,970	4,880	3,190	1,230	920	810
25	4,220	1,790	4,490	2,840	3,230	12,600	5,930	5,120	2,840	1,200	930	800
26	3,120	2,180	3,980	2,760	3,410	10,300	6,520	4,880	2,580	1,170	920	800
27	2,520	2,600	5,300	2,950	3,550	8,540	6,240	*4,940	2,520	1,160	920	800
28	2,230	4,910	6,860	2,970	3,550	8,020	6,620	5,330	3,010	1,140	910	800
29	2,040	5,960	7,460	3,230	3,370	6,940	5,240	5,000	4,020	1,120	900	*790
30	1,870	10,800	6,440	5,120	-	6,080	4,880	4,550	4,020	1,100	890	780
31	1,700	-	4,850	8,380	-	5,990	-	4,120	-	1,090	880	-
Total	68,652	96,550	172,970	85,530	159,310	130,130	168,400	142,530	92,290	52,840	30,239	26,132
Mean	2,215	3,218	5,580	2,759	5,493	4,198	5,547	4,598	3,076	1,705	975	871
Cfsm	2.40	3.48	6.04	2.99	5.94	4.54	6.00	4.98	3.33	1.85	1.06	0.943
In.	2.76	3.89	6.96	3.44	6.41	5.24	6.70	5.74	3.71	2.13	1.22	1.05
Ac-ft	136,200	191,500	343,100	169,600	316,000	258,100	330,000	282,700	183,100	104,800	59,980	51,830

Calendar year 1951: Max 19,700 Min 750 Mean 3,411 Cfsm 3.69 In. 50.13 Ac-ft 2,470,000
Water year 1951-52: Max 15,100 Min 780 Mean 3,343 Cfsm 3.62 In. 49.25 Ac-ft 2,427,000

Peak discharge (base, 11,000 cfs).--Oct. 23 (12:30 p.m.) 14,800 cfs (6.40 ft); Dec. 1 (10 a.m.) 15,100 cfs (6.46 ft); Dec. 22 (9:30 a.m.) 14,500 cfs (6.34 ft); Feb. 2 (1 a.m.) 17,400 cfs (6.86 ft); Mar. 24 (12 m.) 17,000 cfs (6.80 ft).

* Discharge measurement made on this day.

Middle Fork Willamette River at Lowell, Oreg.

Location.--Lat 43°54'30", long. 122°46'40", in NW¼ sec. 23, T. 19 S., R. 1 W., on left bank at bridge three-quarters of a mile south of Lowell and 4½ miles upstream from Lost Creek.

Drainage area.--994 sq mi.

Records available.--October 1946 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 668.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 23, 1950, staff gage at same site and datum.

Average discharge.--6 years, 3,572 cfs.

Extremes.--Maximum discharge during year, 25,000 cfs Mar. 24 (gage height, 8.37 ft), caused by break in cofferdam upstream; maximum unregulated flow occurring on that same day was 23,300 cfs (gage height, 8.13 ft); minimum, 748 cfs Sept. 29, 30 (gage height, 1.92 ft).

1946-52: Maximum discharge, 62,000 cfs Oct. 29, 1950 (gage height, 13.00 ft), from rating curve extended above 20,000 cfs by logarithmic plotting; minimum observed, 716 cfs Oct. 2, 1947, Oct. 3, 1949; minimum gage height, that of Sept. 29, 30, 1952. Maximum stage known, 13.9 ft Dec. 28, 1945.

Remarks.--Records good. No large diversions above station. Occasional diurnal fluctuations during periods of low water caused by log ponds upstream. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 22)

Oct. 1 to Dec. 22				Dec. 23 to Sept. 30			
2.2	820	4.0	3,780	1.9	730	4.0	4,260
2.5	1,130	5.0	6,600	2.5	1,400	5.0	7,340
3.0	1,810	7.1	15,300	3.0	2,150	6.0	11,300
				3.5	3,070	7.5	19,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,330	1,560	14,900	4,660	14,600	3,570	6,100	5,040	4,050	3,870	1,140	975
2	1,550	1,460	10,200	3,950	19,000	3,280	5,700	4,520	3,720	3,300	1,130	964
3	2,230	1,390	9,400	3,520	14,600	3,130	5,760	4,030	3,720	3,240	1,110	964
4	1,650	1,380	10,700	3,300	15,800	*3,090	5,400	3,620	3,950	2,930	1,130	975
5	1,210	1,320	*11,400	3,010	11,700	2,930	6,480	3,370	4,260	2,790	1,110	1,050
6	1,020	1,250	7,590	2,910	9,050	2,830	8,070	3,180	4,470	2,590	1,090	1,030
7	946	1,200	5,430	2,720	7,340	2,720	8,780	3,320	4,210	2,390	1,080	997
8	896	1,170	4,310	2,610	6,350	2,630	7,920	4,660	3,920	2,290	1,080	942
9	868	1,140	3,640	2,520	5,820	2,630	6,550	4,920	3,920	2,180	1,080	1,210
10	848	1,510	3,190	3,720	5,400	3,550	6,000	4,550	3,840	2,130	1,140	1,020
11	877	2,410	3,250	3,670	5,400	3,620	5,700	4,860	3,460	2,090	1,080	953
12	1,320	9,840	3,360	3,150	5,280	3,280	5,370	5,070	3,070	1,960	1,050	931
13	1,330	8,500	3,410	2,810	4,600	3,030	5,550	5,820	2,760	1,880	1,030	910
14	1,170	7,590	3,170	2,740	4,180	2,870	6,350	6,030	2,640	1,780	1,030	890
15	2,360	5,730	2,880	2,540	4,210	2,720	5,850	5,400	2,640	*1,700	1,020	870
16	1,910	4,180	2,820	*2,370	5,430	2,590	*5,250	4,980	2,430	1,640	1,010	850
17	1,480	3,340	2,780	2,200	5,070	2,500	5,100	5,280	2,430	1,570	1,010	840
18	1,290	2,900	4,260	2,130	4,490	2,550	5,970	5,730	2,500	1,500	997	830
19	1,370	2,600	5,310	2,120	4,030	2,520	7,200	6,190	2,630	1,470	997	820
20	2,040	2,480	3,900	2,220	3,720	2,480	6,420	6,220	2,700	1,410	997	820
21	3,080	2,320	3,430	2,200	3,370	2,390	5,400	5,700	2,810	1,370	*986	820
22	3,430	2,140	13,000	2,150	3,220	2,360	5,010	5,100	2,660	1,350	975	811
23	10,300	1,970	10,200	2,220	3,410	2,640	4,980	4,830	2,740	1,350	975	811
24	*7,720	1,840	7,560	2,810	3,570	18,600	5,250	5,130	3,350	1,320	975	802
25	4,650	1,750	5,670	3,480	3,820	16,500	6,220	5,430	3,130	1,280	986	802
26	3,320	2,040	4,740	3,370	4,100	13,200	7,160	5,310	2,810	1,250	964	793
27	2,640	2,600	5,820	3,500	4,210	10,500	6,960	*5,340	2,660	1,230	942	793
28	2,280	4,930	7,960	3,550	4,160	9,600	7,270	5,700	3,150	1,210	975	802
29	2,070	6,570	9,010	3,740	3,870	8,180	6,320	5,520	4,360	1,190	1,010	*775
30	1,860	12,400	8,260	5,550	-	7,060	5,400	4,830	4,920	1,160	997	802
31	1,700	-	5,970	9,960	-	6,990	-	4,520	-	1,150	986	-
Total	70,745	101,510	197,520	101,400	189,800	156,540	185,490	154,200	99,910	58,570	32,082	26,852
Mean	2,282	3,384	6,372	3,271	6,545	5,050	6,183	4,974	3,330	1,889	1,035	895
Cfsm	2.30	3.40	6.41	3.29	6.58	5.08	6.22	5.00	3.35	1.90	1.04	0.900
In.	2.65	3.80	7.39	3.79	7.10	5.86	6.94	5.77	3.74	2.19	1.20	1.00
Ac-ft	140,300	201,300	391,800	201,100	376,500	310,500	367,900	305,900	198,200	116,200	63,630	53,260

Calendar year 1951: Max 23,100 Min 752 Mean 3,724 Cfsm 3.75 In. 50.86 Ac-ft 2,696,000
Water year 1951-52: Max 19,000 Min 775 Mean 3,756 Cfsm 3.78 In. 51.43 Ac-ft 2,727,000

Peak discharge (base, 12,000 cfs).--Oct. 23 (2:30 p.m.) 16,600 cfs (7.36 ft); Dec. 1 (12 m.) 17,300 cfs (7.50 ft); Dec. 5 (3 a.m.) 13,200 cfs (6.68 ft); Dec. 22 (12 m.) 18,600 cfs (7.40 ft); Feb. 2 (3 a.m.) 21,700 cfs (7.89 ft); Mar. 24 (4 a.m.) 25,000 cfs (8.37 ft).

* Discharge measurement made on this day.

Fall Creek below Winberry Creek, near Fall Creek, Oreg.

Location.--Lat 43°56'40", long. 122°46'30", near center of sec. 2, T. 19 S., R. 1 W., on left bank 10 ft upstream from highway bridge, 1½ miles downstream from Winberry Creek, 2½ miles southeast of Fall Creek, and 5 miles above mouth.

Drainage area.--186 sq mi (revised).

Records available.--October to December 1911 (gage heights only), September 1935 to September 1952. Published as Big Fall Creek near Fall Creek, 1911.

Gage.--Water-stage recorder. Datum of gage is 637.80 ft above mean sea level, datum of 1929. Oct. 1 to Dec. 31, 1911, staff gage at site a quarter of a mile downstream at different datum. Sept. 9, 1935, to Aug. 2, 1950, staff gage at present site and datum.

Average discharge.--17 years, 558 cfs.

Extremes.--Maximum discharge during year, 9,840 cfs Dec. 22 (gage height, 12.08 ft); minimum, 28 cfs Sept. 30 (gage height, 1.06 ft).
1935-52: Maximum discharge, 22,500 cfs Dec. 28, 1945 (gage height, 18.0 ft, from floodmark), from rating curve extended above 6,500 cfs by logarithmic plotting; minimum observed, 19 cfs Dec. 1, 1936.

Remarks.--Records good. No diversion above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 1094: 1946(M).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	20	3.0	500
1.2	43	4.0	955
1.5	92	5.0	1,540
2.0	200	7.0	3,180
2.5	330	11.0	8,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	342	228	2,980	845	3,640	684	1,200	395	162	730	63	36
2	618	202	1,900	684	3,580	592	1,110	345	153	516	60	34
3	745	188	2,220	604	*3,770	552	1,040	312	146	395	60	33
4	364	183	2,970	596	3,720	*584	922	282	140	315	58	36
5	200	167	*3,520	568	2,280	544	982	268	140	270	56	58
6	133	151	2,020	556	1,590	520	1,000	255	140	238	55	49
7	102	142	1,300	504	1,270	482	865	278	135	*208	54	39
8	83	133	955	468	1,070	451	688	775	127	188	54	50
9	72	133	740	508	938	508	588	632	123	169	55	160
10	64	272	656	955	830	1,020	544	504	131	158	55	76
11	74	604	765	840	800	911	516	440	164	144	52	56
12	330	2,530	860	680	755	780	479	392	188	138	50	49
13	265	2,250	800	576	632	672	493	367	144	129	48	46
14	333	2,340	656	532	656	600	604	416	183	121	48	42
15	700	1,490	564	468	911	532	508	409	275	111	48	39
16	402	988	648	*416	1,190	479	*454	357	190	105	48	38
17	285	710	696	374	988	454	444	330	162	102	48	37
18	235	564	1,350	357	830	479	486	318	146	98	48	37
19	532	479	1,530	348	696	462	524	315	135	94	44	36
20	1,510	426	1,040	395	516	451	448	318	138	90	43	34
21	1,240	367	1,150	374	552	451	395	306	190	88	*42	33
22	1,850	315	6,350	378	544	454	360	270	160	87	40	33
23	4,990	282	2,830	496	845	789	345	252	193	83	40	33
24	*2,250	265	1,860	1,080	1,020	6,920	345	245	250	81	42	32
25	1,130	258	1,310	1,220	1,130	4,180	395	232	228	79	43	32
26	705	318	1,090	1,100	1,210	2,830	381	218	200	76	42	30
27	516	367	1,080	1,130	1,110	1,980	374	*210	193	72	39	30
28	412	1,060	1,280	1,160	988	1,590	468	208	374	69	38	30
29	336	2,570	1,760	1,270	820	1,200	398	193	1,470	66	38	*30
30	288	3,620	1,670	1,880	-	1,130	395	176	1,280	64	37	29
31	255	-	1,150	2,540	-	1,510	-	171	-	63	37	-
Total	21,361	23,602	49,700	23,902	38,881	34,791	17,751	10,189	7,660	5,147	1,485	1,297
Mean	689	787	1,603	771	1,341	1,122	592	329	255	166	47.9	43.2
Cfsm	3.70	4.23	8.62	4.15	7.21	6.03	3.18	1.77	1.37	0.892	0.258	0.232
In.	4.27	4.72	9.94	4.78	7.77	6.96	3.55	2.04	1.53	1.03	0.30	0.26
Ac-ft	42,370	46,810	98,580	47,410	77,120	69,010	35,210	20,210	15,190	10,210	2,950	2,570

Calendar year 1951: Max 6,350 Min 25 Mean 707 Cfsm 3.80 In. 51.60 Ac-ft 511,900
Water year 1951-52: Max 6,920 Min 29 Mean 644 Cfsm 3.46 In. 47.15 Ac-ft 467,600

Peak discharge (base, 3,100 cfs).--Oct. 23 (11 a.m.) 7,790 cfs (10.78 ft); Nov. 30 (1 a.m.) 5,240 cfs (8.87 ft); Dec. 5 (1 to 4 a.m.) 4,140 cfs (7.93 ft); Dec. 22 (6 a.m.) 9,840 cfs (12.08 ft); Feb. 3 (8 p.m.) 5,410 cfs (9.01 ft); Mar. 24 (8:30 a.m.) 8,840 cfs (11.46 ft).
* Discharge measurement made on this day.

Coast Fork Willamette River at London, Oreg.

Location.--Lat 43°38'30", long. 123°05'10", in SW¼ sec. 20, T. 22 S., R. 3 W., on left bank 0.6 mile north of London and 11 miles south of Cottage Grove.

Drainage area.--69 sq mi, approximately.

Records available.--September 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 852.58 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 17, 1935, staff gage at same site and datum.

Average discharge.--17 years, 201 cfs.

Extremes.--Maximum discharge during year, 2,760 cfs Nov. 29 (gage height, 6.90 ft); minimum, 15 cfs Sept. 3, 4, 26-30.
1935-52: Maximum discharge, 8,800 cfs Dec. 28, 1945 (gage height, 13.25 ft), from rating curve extended above 4,000 cfs; minimum, 10 cfs for several days in 1936, 1938-40.

Remarks.--Records good. No diversion above station; millpond 3 miles above station may cause slight regulation at times.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-23				Oct. 24 to Sept. 30			
1.3	23	2.5	255	1.1	14	2.5	285
1.4	30	3.0	445	1.2	18	3.0	485
1.6	51	5.0	1,440	1.4	32	5.0	1,530
2.0	119			1.7	72	7.0	2,830
				2.1	158		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	62	1,320	g440	1,640	271	352	122	52	197	26	16
2	173	g56	770	g360	1,630	236	352	108	51	143	26	16
3	187	g43	1,020	g360	1,350	236	324	100	*48	115	24	16
4	88	g56	1,210	g320	1,230	243	299	94	47	94	23	16
5	51	g56	1,290	302	860	236	313	90	47	83	22	32
6	35	g43	*780	302	655	229	306	86	47	74	22	20
7	29	g43	530	274	539	212	268	92	47	66	22	19
8	26	g43	404	254	458	197	222	182	43	59	22	21
9	24	g43	320	292	408	200	191	153	43	55	22	43
10	23	g158	282	775	360	313	180	131	46	51	22	25
11	44	g250	278	534	352	310	169	119	56	48	21	21
12	57	g1,250	274	396	320	*292	161	110	58	47	20	20
13	41	g925	250	324	278	264	198	106	52	44	20	20
14	64	g675	215	310	274	240	313	102	117	42	20	19
15	140	g485	191	268	328	212	*236	98	90	*39	20	18
16	78	g320	215	232	454	197	200	92	66	36	21	17
17	55	g250	222	203	396	185	182	90	56	35	20	17
18	46	g185	g575	188	340	203	182	86	51	35	20	16
19	61	g158	645	191	302	209	182	85	47	34	20	16
20	160	g158	436	268	278	212	158	81	46	33	19	16
21	154	g133	420	250	246	215	143	77	48	33	19	16
22	210	g110	1,480	250	260	222	133	70	44	32	19	16
23	1,260	g110	1,160	*340	392	328	126	69	58	31	19	16
24	494	g110	945	695	400	1,540	124	67	58	30	19	16
25	282	g90	g675	630	436	1,040	124	64	70	30	19	16
26	177	g110	g575	600	432	760	119	62	66	30	*19	16
27	133	g133	g1,030	595	392	605	117	61	66	29	18	15
28	106	444	g625	562	344	508	128	59	170	28	18	15
29	90	1,350	g725	590	306	412	112	58	449	27	17	15
30	76	1,570	g775	925	-	372	124	55	316	26	17	15
31	*69	-	g575	1,150	-	404	-	53	-	26	16	-
Total	4,547	9,419	20,212	13,180	15,660	11,103	6,038	2,822	2,455	1,652	632	560
Mean	147	314	652	425	540	358	201	91.0	81.8	53.3	20.4	18.7
Cfsm	2.13	4.55	9.45	6.16	7.83	5.19	2.91	1.32	1.19	0.772	0.296	0.271
In.	2.45	5.08	10.89	7.10	8.44	5.98	3.25	1.52	1.32	0.89	0.34	0.30
Ac-ft	9,020	18,680	40,090	26,140	31,060	22,020	11,980	5,600	4,870	3,280	1,250	1,110

Calendar year 1951: Max 3,250 Min 12 Mean 251 Cfsm 3.64 In. 49.39 Ac-ft 181,800
Water year 1951-52: Max 1,640 Min 15 Mean 241 Cfsm 3.49 In. 47.56 Ac-ft 175,100

Peak discharge (base, 1,900 cfs).--Nov. 29 (11 p.m.) 2,760 cfs (6.90 ft); Dec. 22 (9 a.m.) 1,940 cfs (5.69 ft); Feb. 1 (11:30 p.m.) 2,020 cfs (5.82 ft); Mar. 24 (9 a.m.) 1,940 cfs (5.68 ft).
* Discharge measurement made on this day.
g Computed from once-daily gage readings.

Cottage Grove Reservoir near Cottage Grove, Oreg.

Location.--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.

Drainage area.--104 sq mi.

Records available.--October 1942 to September 1952.

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

Extremes.--Maximum contents during year, 32,520 acre-ft June 29 (elevation, 790.51 ft); minimum, 2,800 acre-ft Feb. 6 (elevation, 749.16 ft).
1942-52: Maximum contents, 34,750 acre-ft May 3, 1949 (elevation, 792.42 ft); minimum since first filling, about 580 acre-ft Nov. 13, 1950 (elevation, about 738.2 ft), from graph based on records of inflow and outflow.

Remarks.--Reservoir is formed by earth-fill dam with concrete spillway completed by Corps of Engineers in 1942; storage began Oct. 31, 1942 (slight pondage at times in water year 1941-42, when inflow temporarily exceeded 2,600 cfs, capacity of outlets). Capacity, 33,090 acre-ft between elevations 719.0 ft (outlet conduit) and 791.0 ft (crest of spillway). Dead storage negligible. Reservoir used for flood control and improvement of navigation below Albany.

Cooperation.--Gage readings furnished and recorder inspected by Corps of Engineers.

Revisions (water years).--W 1218: 1950.

Contents at 12 p.m., in acre-feet, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,540	3,030	4,990	3,040	3,560	12,610	22,920	31,420	32,030	31,940	30,970	22,920
2	8,250	3,000	3,430	3,050	3,480	12,640	23,440	31,570	32,020	32,030	30,810	22,630
3	8,060	2,980	3,120	3,060	3,300	12,750	23,860	31,690	31,990	32,110	30,630	22,310
4	7,800	2,980	3,050	3,500	3,070	13,090	24,200	31,800	31,970	32,120	30,470	22,080
5	7,750	2,970	3,100	3,510	2,910	13,560	24,550	31,920	31,950	32,090	30,280	21,830
6	7,640	2,940	2,970	3,500	3,110	13,980	24,890	31,990	31,950	32,030	30,090	21,550
7	7,510	2,930	3,090	3,340	3,740	14,370	25,110	32,040	31,940	32,000	29,910	21,270
8	7,380	2,920	3,140	3,120	4,370	14,740	25,330	32,020	31,920	32,020	29,750	21,020
9	7,240	2,940	3,090	3,160	5,210	15,150	25,680	31,920	31,890	32,030	29,480	20,810
10	7,050	3,110	3,010	3,610	5,630	15,680	26,010	31,910	31,910	32,040	29,210	20,540
11	6,980	3,330	3,100	3,340	6,380	16,010	26,310	31,930	31,970	32,030	28,900	20,260
12	6,930	3,510	3,150	3,210	6,740	16,230	26,600	31,930	32,030	32,030	28,630	19,980
13	6,820	3,190	3,150	3,150	6,890	16,480	27,020	31,960	32,050	32,020	28,350	19,710
14	6,770	3,090	3,150	3,230	7,040	18,520	27,510	31,990	32,180	32,010	28,060	19,430
15	6,890	3,030	3,130	3,180	7,480	17,230	27,770	31,990	32,090	31,990	27,800	19,150
16	6,880	2,980	3,150	3,030	8,020	17,560	28,100	31,990	32,080	31,940	27,520	18,880
17	6,800	2,970	3,340	2,930	8,260	17,960	28,300	31,970	32,070	31,880	27,230	18,590
18	6,720	2,990	3,350	2,870	8,330	18,360	28,600	31,990	32,030	31,830	26,890	18,320
19	6,670	3,040	3,020	2,910	8,450	18,790	28,900	32,010	32,010	31,780	26,670	18,040
20	6,850	2,980	3,010	3,150	8,840	19,230	29,300	32,010	32,010	31,720	26,370	17,760
21	7,040	2,990	3,210	3,250	9,220	19,680	29,500	32,010	32,010	31,680	26,090	17,480
22	7,410	2,960	4,380	3,310	9,680	19,980	29,750	31,960	32,020	31,630	25,780	17,190
23	9,680	2,940	4,390	3,340	10,330	20,210	29,920	31,960	32,080	31,580	25,520	16,900
24	9,340	2,930	3,500	3,360	10,800	21,020	30,110	32,000	32,100	31,500	25,230	16,610
25	8,250	2,920	2,980	3,150	11,330	20,960	30,300	32,020	32,170	31,440	24,960	16,330
26	6,880	3,010	2,990	3,130	11,810	21,010	30,450	32,030	32,220	31,370	24,670	16,050
27	5,550	3,200	3,020	3,060	12,180	21,130	30,640	32,040	32,330	31,310	24,390	15,750
28	4,240	3,450	3,000	2,980	12,410	21,340	30,850	32,050	32,450	31,240	24,110	15,480
29	3,210	4,630	3,580	3,030	12,550	21,550	31,010	32,050	32,170	31,150	23,810	15,200
30	3,060	5,070	3,220	3,130	-	21,880	31,230	32,050	31,940	31,090	23,540	14,910
31	3,060	-	3,060	3,110	-	22,400	-	32,040	-	31,020	23,230	-

Monthly elevation and contents, water year October 1951 to September 1952

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30.....	763.34	8,960	-
Oct. 31.....	750.06	3,060	-5,900
Nov. 30.....	755.76	5,070	+2,010
Dec. 31.....	750.08	3,060	-2,010
Calendar year 1951...	-	-	-490
Jan. 31.....	750.24	3,110	+50
Feb. 29.....	768.98	12,550	+9,440
Mar. 31.....	780.90	22,400	+9,850
Apr. 30.....	789.37	31,230	+8,830
May 31.....	790.09	32,040	+810
June 30.....	790.00	31,940	-100
July 31.....	789.19	31,020	-920
Aug. 31.....	781.76	23,230	-7,790
Sept.30.....	772.21	14,910	-8,320
Water year 1951-52...	-	-	+5,950

† Elevation at 12 p.m.

Coast Fork Willamette River below Cottage Grove Dam, Oreg.

Location.--Lat 43°43'00", long. 123°03'10", in NE¼ sec. 28, T. 21 S., R. 3 W., on right bank at bridge a quarter of a mile downstream from Cottage Grove Dam and 5½ miles south of Cottage Grove.

Drainage area.--104 sq mi.

Records available.--January 1939 to September 1952. Prior to October 1944, published as "near Cottage Grove."

Gage.--Water-stage recorder. Datum of gage is 711.00 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Jan. 1 to Feb. 13, 1939, staff gage at site three-quarters of a mile downstream at different datum. Feb. 14 to Oct. 12, 1939, staff gage at site 0.8 mile downstream at datum 15.82 ft lower. Oct. 13, 1939, to Sept. 30, 1944, water-stage recorder at site 0.8 mile downstream at datum 15.93 ft lower.

Average discharge.--13 years, 279 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 2,240 cfs Feb. 1 (gage height, 7.73 ft); minimum, 46 cfs June 10, 11 (gage height, 2.84 ft).
1939-52: Maximum discharge recorded, 3,340 cfs Jan. 4, 1943 (gage height, 10.60 ft, site and datum then in use); practically no flow July 5-7, 1945, Aug. 24, 1947.

Remarks.--Records excellent. No diversions above station. Flow regulated since Oct. 31, 1942, by Cottage Grove Reservoir.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.8	42	4.0	290
3.0	66	5.0	690
3.5	157	8.0	2,400

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	390	95	2,020	614	2,040	334	190	54	57	245	53	149
2	394	95	1,940	494	2,210	281	190	54	58	151	80	149
3	324	81	1,700	386	2,080	263	192	54	*58	109	100	149
4	242	70	1,830	285	1,880	144	192	54	52	109	100	149
5	105	70	1,840	442	1,270	95	192	54	51	109	100	149
6	105	69	*1,230	462	740	95	192	69	50	109	102	151
7	105	61	695	502	386	95	192	88	50	103	102	153
8	105	58	546	502	272	95	157	210	49	57	102	153
9	105	58	502	482	118	95	76	212	48	54	132	153
10	105	134	418	1,010	130	164	61	146	46	54	146	151
11	105	550	320	978	228	239	61	130	46	54	146	151
12	105	1,550	320	676	278	*269	61	122	48	54	146	151
13	103	1,430	320	537	293	215	61	105	49	53	146	149
14	103	945	281	434	296	146	153	109	128	53	144	146
15	107	618	266	434	263	90	*134	109	140	*53	144	146
16	111	434	263	434	355	90	88	109	90	53	146	146
17	111	302	204	358	454	90	58	102	70	52	149	144
18	111	239	758	308	450	90	58	93	69	52	149	142
19	111	218	1,100	271	372	90	58	93	60	51	149	142
20	111	230	574	281	192	90	58	93	54	51	149	142
21	111	180	498	320	168	90	58	93	53	51	149	142
22	111	185	1,360	366	168	144	58	93	51	52	149	146
23	192	151	1,670	*510	251	331	58	69	51	54	149	144
24	840	138	1,790	1,020	327	1,590	58	58	51	54	146	144
25	920	138	1,140	1,040	330	1,380	58	57	51	54	146	144
26	885	138	840	900	334	950	58	57	52	54	*146	144
27	855	159	845	900	334	690	58	57	52	54	146	142
28	825	456	845	840	338	506	56	57	208	54	144	142
29	695	1,290	1,170	790	334	418	54	58	780	53	144	140
30	192	2,020	1,420	1,250	-	302	54	57	531	53	146	140
31	*95	-	895	1,630	-	251	-	57	-	53	149	-
Total	8,779	12,162	29,600	19,456	16,891	9,722	2,994	2,773	3,153	2,212	4,099	4,393
Mean	283	405	955	628	582	314	99.8	89.5	105	71.4	132	146
Ac-ft	17,410	24,120	58,710	38,590	33,500	19,280	5,940	5,500	6,250	4,390	8,130	8,710

Adjusted for change in contents in Cottage Grove Reservoir

Mean	187	439	922	628	747	474	248	103	103	56.4	5.53	6.55
Cfsm	1.80	4.22	8.87	6.04	7.18	4.56	2.38	0.990	0.990	0.542	0.053	0.063
In.	2.08	4.71	10.22	6.97	7.74	5.25	2.66	1.14	1.11	0.63	0.06	0.07
Ac-ft	11,510	26,130	56,700	38,640	42,940	29,130	14,770	6,310	6,150	3,470	340	390

Observed

Calendar year 1951: Max 2,580 Min 52 Mean 363 Ac-ft 262,500
Water year 1951-52: Max 2,210 Min 46 Mean 318 Ac-ft 230,500

Adjusted

Calendar year 1951: Mean 362 Cfsm 3.48 In. 47.24 Ac-ft 262,000
Water year 1951-52: Mean 326 Cfsm 3.13 In. 42.64 Ac-ft 236,400

* Discharge measurement made on this day.

Row River above Pitcher Creek, near Dorena, Oreg.

Location.--Lat 43°44'10, long. 122°52'20", in NE¼ (revised) sec. 24, T. 21 S., R. 2 W., on right bank half a mile above Pitcher Creek and 1½ miles northwest of Dorena.

Drainage area.--211 sq mi.

Records available.--September 1935 to September 1952. Prior to October 1949, published as "at Star."

Gage.--Water-stage recorder. Datum of gage is 856.16 ft above mean sea level, datum of 1929. Prior to Oct. 18, 1938, staff gage read once or twice daily at site 450 ft upstream at datum 1 ft higher.

Average discharge.--17 years, 583 cfs.

Extremes.--Maximum discharge during year, 12,000 cfs Mar. 24 (gage height, 11.48 ft); minimum, 22 cfs Sept. 29, 30 (gage height, 1.58 ft).
1935-52: Maximum discharge, 19,600 cfs Dec. 28, 1945 (gage height, 14.33 ft), from rating curve extended above 9,300 cfs; minimum, 10 cfs Sept. 24, 25, 1951.

Remarks.--Records good. No diversion above station; possibly slight regulation at times by log ponds.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau and Corps of Engineers.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 22

1.8	33	5.0	1,080
2.0	49	6.0	1,880
2.5	102	7.0	3,000
3.0	190	9.0	6,170
3.5	340	11.0	10,700
4.0	535		

Dec. 23 to Sept. 30

1.6	23	3.0	205
1.9	48	3.5	345
2.5	119	4.0	535

Note.--Same as preceding table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	133	4,720	894	5,490	745	1,170	486	191	775	52	25
2	567	115	2,360	705	5,300	630	1,140	414	177	526	50	24
3	675	106	2,400	620	4,000	571	1,090	357	179	389	47	24
4	319	107	3,250	576	3,840	580	1,040	312	*187	318	52	24
5	149	96	3,370	522	2,510	540	1,450	288	195	267	44	65
6	96	89	*1,810	499	1,760	512	1,610	288	191	225	38	45
7	67	82	1,160	446	1,470	490	1,310	327	165	193	36	35
8	52	78	876	410	1,320	470	942	1,030	153	169	35	35
9	43	75	695	454	1,230	526	760	828	156	158	35	112
10	37	254	610	1,400	1,100	990	745	665	150	148	35	69
11	50	1,550	882	990	1,110	*900	740	640	150	136	34	46
12	208	4,160	1,080	725	972	760	680	562	151	127	33	39
13	163	2,910	954	595	755	640	810	544	132	118	33	37
14	149	2,800	735	548	710	562	1,050	504	197	109	32	36
15	665	1,630	590	454	918	486	840	450	366	103	33	34
16	305	1,010	585	400	1,340	442	*725	418	238	*97	33	32
17	185	720	610	351	1,060	426	750	474	193	91	33	31
18	133	558	1,700	333	870	446	1,000	504	175	86	34	30
19	155	490	1,710	327	740	426	978	474	165	82	33	29
20	744	458	1,030	410	640	414	705	430	158	79	34	29
21	780	389	882	396	548	418	562	360	162	73	33	28
22	900	344	5,240	*369	540	442	544	315	146	70	33	26
23	3,500	278	3,090	442	792	992	540	309	187	67	33	26
24	1,720	248	2,170	1,170	942	9,070	625	336	248	67	35	24
25	882	224	1,400	1,300	1,160	5,060	715	327	230	62	35	23
26	562	613	1,320	1,230	1,330	3,390	690	300	197	62	33	24
27	396	789	1,990	1,330	1,260	2,440	625	306	195	58	*31	24
28	299	1,800	2,040	1,450	1,120	2,100	675	318	396	55	29	24
29	239	3,200	2,380	1,690	906	1,470	508	264	1,610	54	29	23
30	190	4,770	1,960	3,220	-	1,140	466	230	1,400	52	29	23
31	*155	-	1,230	3,890	-	1,430	-	218	-	51	26	-
Total	14,630	30,076	54,829	28,146	45,733	39,508	25,485	13,278	8,440	4,867	1,102	1,046
Mean	472	1,003	1,769	908	1,577	1,274	850	428	281	157	35.5	34.9
Cfsm	2.24	4.75	8.38	4.30	7.47	6.04	4.03	2.03	1.33	0.744	0.168	0.165
In.	2.58	5.30	9.66	4.96	8.06	6.96	4.49	2.34	1.49	0.86	0.19	0.18
Ac-ft	29,020	59,650	108,800	55,830	90,710	78,360	50,550	26,340	16,740	9,650	2,190	2,070

Calendar year 1951: Max 5,290 Min 11 Mean 731 Cfsm 3.46 In. 47.03 Ac-ft 529,400
Water year 1951-52: Max 9,070 Min 23 Mean 730 Cfsm 3.46 In. 47.07 Ac-ft 529,900

Peak discharge (base, 4,800 cfs).--Oct. 23 (10:30 a.m.) 6,720 cfs (9.29 ft); Nov. 30 (12:30 a.m.) 7,120 cfs (9.48 ft); Dec. 22 (8 a.m.) 7,850 cfs (9.81 ft); Feb. 1 (10:30 p.m.) 6,760 cfs (9.31 ft); Mar. 24 (6 a.m.) 12,000 cfs (11.48 ft).
* Discharge measurement made on this day.

Dorena Reservoir near Cottage Grove, Oreg.

Location.--Lat 43°47', long. 122°57', in SE¼ sec. 32, T. 20 S., R. 2 W., on left side of dam in concrete shelter over 42-inch circular well in concrete portion of dam on Row River, 5 miles east of Cottage Grove.

Drainage area.--265 sq mi.

Records available.--October 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Nov. 10, 1949, staff gage at same datum.

Extremes.--Maximum contents during year, 75,930 acre-ft June 14 (elevation, 834.16 ft); minimum, 5,660 acre-ft Dec. 20, 1951 (elevation, 767.75 ft).
1949-52: Maximum contents, that of June 14, 1952; minimum since first filling, that of Dec. 20, 1951.

Remarks.--Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1949 by Corps of Engineers; storage began Oct. 11, 1949; capacity, 77,510 acre-ft between elevations 739.0 ft (sill of outlet gates) and 835.0 ft (crest of spillway). Dead storage of 8 acre-ft below elevation 739.0 ft. Reservoir used for flood control and improvement of navigation. Capacity table computed by Corps of Engineers.

Cooperation.--Water-stage recorder inspected by Corps of Engineers.

Contents at 12 p.m., in acre-feet, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59,170	19,000	13,790	7,700	12,930	23,830	43,280	61,070	75,670	72,570	70,800	49,770
2	60,260	18,460	10,350	7,790	16,520	24,450	44,460	61,480	75,650	72,240	70,440	49,040
3	61,150	17,950	7,840	7,710	16,770	25,080	45,180	61,880	75,630	72,100	69,940	48,310
4	60,500	17,420	8,310	8,110	16,400	25,920	45,650	62,150	75,650	72,100	69,490	47,680
5	59,330	16,860	10,060	7,550	13,130	26,640	46,150	62,380	75,670	72,020	69,010	47,050
6	58,030	16,290	7,960	7,170	8,450	27,290	46,290	62,610	75,680	72,010	58,510	46,400
7	56,860	15,710	7,150	7,170	7,550	27,910	46,480	62,990	75,650	71,990	68,020	45,690
8	55,690	15,140	6,990	7,290	7,190	28,440	47,350	65,010	75,630	71,930	67,540	45,110
9	54,230	14,620	7,080	7,470	7,080	29,160	48,360	66,340	75,630	71,970	66,970	44,630
10	52,750	13,920	7,140	7,750	7,230	30,190	49,150	66,720	75,740	72,020	66,120	44,000
11	51,800	13,760	7,770	7,360	7,310	30,750	49,590	67,120	75,800	72,100	65,420	43,350
12	50,950	13,370	7,870	7,270	6,980	31,160	50,000	67,930	75,820	72,100	64,650	42,680
13	49,840	10,860	7,390	7,040	7,410	31,680	50,700	68,490	75,760	72,100	63,910	41,970
14	48,820	8,080	7,100	6,980	8,190	32,280	51,280	69,170	75,570	72,060	63,170	41,280
15	48,800	7,060	7,070	7,010	9,330	33,030	51,660	69,760	74,880	72,010	62,410	40,590
16	48,080	7,120	7,500	7,050	10,530	33,730	52,180	70,300	74,390	71,970	61,670	39,890
17	47,000	6,900	8,170	7,040	11,200	34,440	53,120	70,910	73,740	71,910	60,920	39,200
18	47,200	7,070	9,290	7,150	12,030	35,140	53,910	71,600	73,040	71,900	60,180	38,540
19	44,830	7,150	6,660	7,080	12,930	35,820	54,340	72,320	72,280	71,800	59,430	37,790
20	45,220	6,900	7,060	7,060	13,720	36,530	54,140	72,890	72,120	71,730	58,640	37,110
21	45,470	6,860	7,560	6,910	14,280	37,220	54,380	73,290	72,170	71,710	57,870	36,410
22	45,780	7,040	14,180	6,930	15,100	37,790	55,040	73,570	72,210	71,620	57,110	35,730
23	52,330	7,050	13,380	7,070	16,640	39,390	55,850	73,890	72,280	71,560	56,370	35,030
24	47,630	6,970	9,960	6,910	18,540	57,000	56,830	74,200	72,320	71,530	55,610	34,340
25	40,660	6,860	7,310	7,270	21,050	60,940	58,000	74,500	72,210	71,460	54,860	33,620
26	32,870	7,220	7,950	7,080	23,550	59,480	59,110	74,780	72,010	71,380	54,100	32,930
27	24,840	7,230	8,290	7,090	24,690	55,670	59,910	75,060	71,900	71,350	53,390	32,230
28	22,020	6,950	8,070	7,250	23,410	51,180	60,080	75,350	72,450	71,240	52,640	31,490
29	21,320	8,670	8,200	7,540	23,530	45,380	60,260	75,520	73,420	71,130	51,880	30,790
30	20,520	11,902	7,300	8,550	-	42,680	60,680	75,590	72,410	71,000	51,190	30,090
31	19,620	-	7,860	8,570	-	42,650	-	75,670	-	70,910	50,510	-

Monthly elevation and contents, water year October 1951 to September 1952

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	824.20	58,640	-
Oct. 31	790.21	19,620	-39,020
Nov. 30	779.24	11,920	-7,700
Dec. 31	772.20	7,860	-4,060
Calendar year 1951	-	-	+750
Jan. 31	773.52	8,570	+710
Feb. 29	794.84	23,530	+14,960
Mar. 31	812.75	42,650	+19,120
Apr. 30	825.48	60,680	+18,030
May 31	834.02	75,670	+14,990
June 30	832.27	72,410	-3,260
July 31	831.45	70,910	-1,500
Aug. 31	818.73	50,510	-20,400
Sept.30	801.67	30,090	-20,420
Water year 1951-52	-	-	-28,550

† Elevation at 12 p.m.

Row River near Cottage Grove, Oreg.

Location.--Lat 43°47'40", long. 122°59'40" (revised), in NE¼ sec. 36, T. 20 S., R. 3 W., on right bank 1½ miles upstream from Mosby Creek, 2 miles downstream from Dorena Dam, and 3 miles east of Cottage Grove.

Drainage area.--270 sq mi.

Records available.--January 1939 to September 1952. Prior to October 1947, published as "near Dorena."

Gage.--Water-stage recorder. Datum of gage is 685.24 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 13, 1939, staff gage at site 180 ft upstream at datum 1.00 ft higher.

Average discharge.--13 years, 744 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 5,070 cfs Nov. 11 (gage height, 8.31 ft); minimum, 76 cfs Oct. 1 (gage height, 1.78 ft).
1939-52: Maximum discharge, 21,400 cfs Dec. 28, 1945 (gage height, 18.20 ft); minimum, 6.7 cfs Oct. 1, 1949; minimum daily, 14 cfs Aug. 29 to Sept. 1, 1940.

Remarks.--Records excellent. No diversion above station. Flow regulated since October 1949 by Dorena Reservoir (see preceding page).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.7	60	4.0	1,090
2.0	135	6.0	2,650
2.5	300	9.0	6,000
3.0	530		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	530	4,780	1,250	4,320	a640	1,210	376	206	970	111	412
2	191	455	4,830	904	4,320	445	850	279	209	898	228	408
3	309	450	4,380	892	4,860	390	988	223	209	615	286	408
4	682	450	3,980	540	4,880	308	1,050	223	*209	440	286	412
5	790	445	*3,580	988	4,830	312	1,400	223	212	362	286	412
6	784	445	3,520	892	4,690	312	1,760	223	216	282	286	408
7	669	435	2,010	663	2,280	312	1,480	220	220	279	286	408
8	666	430	1,270	540	1,740	312	713	216	202	234	286	408
9	800	430	886	600	1,500	316	421	237	189	183	372	408
10	790	768	784	1,760	1,230	*675	470	580	189	150	421	416
11	616	1,720	773	1,610	1,260	874	652	530	202	150	421	416
12	746	5,020	1,220	1,040	1,330	778	600	220	209	150	421	412
13	795	4,920	1,380	928	734	575	652	344	209	147	416	412
14	790	4,820	1,050	778	535	426	957	a270	677	147	416	412
15	812	2,603	762	636	545	258	800	a210	884	*132	416	412
16	746	1,280	545	530	1,040	230	*590	a210	580	123	421	408
17	812	1,030	474	490	1,040	230	426	a210	590	123	421	408
18	806	676	1,370	394	735	230	721	206	595	123	421	408
19	800	580	3,580	426	475	237	886	206	595	123	421	403
20	839	707	1,180	590	416	237	892	206	311	123	430	403
21	874	540	976	641	421	240	552	206	183	108	426	398
22	1,010	354	3,260	*530	294	300	300	206	180	108	426	398
23	1,640	354	4,450	605	230	772	237	206	216	108	426	394
24	4,640	354	4,630	1,450	230	3,340	223	206	276	105	426	398
25	4,770	349	3,360	1,830	a230	4,460	223	206	320	105	*421	398
26	4,770	486	1,370	1,740	a380	4,890	223	202	340	105	416	398
27	4,640	886	2,140	1,740	a780	4,870	317	202	340	100	416	398
28	1,950	2,280	2,530	1,700	a1,500	4,820	674	202	344	105	412	398
29	690	3,200	2,960	1,940	a1,000	4,780	480	202	2,550	105	412	398
30	*696	4,430	2,970	3,220	-	3,020	376	202	2,370	105	412	398
31	685	-	1,390	4,560	-	1,800	-	202	-	105	416	-
Total	39,886	41,454	72,190	36,407	47,805	41,389	21,103	7,654	14,032	6,913	11,661	12,170
Mean	1,287	1,382	2,329	1,174	1,648	1,335	703	247	468	223	376	406
Ac-ft	79,110	82,220	143,200	72,210	94,820	82,090	41,860	15,180	27,830	13,710	23,130	24,140

Adjusted for change in contents in Dorena Reservoir

Mean	652	1,252	2,263	1,186	1,909	1,646	1,006	491	413	199	44.4	62.5
Cfsm	2.41	4.64	8.38	4.39	7.07	6.10	3.73	1.82	1.53	0.737	0.164	0.231
In.	2.78	5.17	9.66	5.06	7.62	7.03	4.16	2.10	1.71	0.85	0.19	0.26
Ac-ft	40,090	74,520	139,100	72,920	109,800	101,200	59,890	30,170	24,570	12,210	2,730	3,720

Observed

Calendar year 1951: Max 5,020 Min 41 Mean 937 Ac-ft 678,400
Water year 1951-52: Max 5,020 Min 78 Mean 964 Ac-ft 699,500

Adjusted

Calendar year 1951: Mean 938 Cfsm 3.47 In. 47.14 Ac-ft 679,200
Water year 1951-52: Mean 924 Cfsm 3.42 In. 46.59 Ac-ft 671,000

* Discharge measurement made on this day.
a No gage-height record; discharge computed from dam tender's record of gate operations at Dorena Dam.

Mosby Creek at mouth, near Cottage Grove, Oreg.

Location.--Lat 43°46'40", long. 123°00'10", in sec. 1, T. 21 S., R. 3 W., on left bank two-thirds of a mile upstream from mouth and 3½ miles southeast of Cottage Grove.

Drainage area.--96 sq mi, approximately.

Records available.--September 1946 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 676.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--6 years, 263 cfs.

Extremes.--Maximum discharge during year, 3,990 cfs Mar. 24 (gage height, 7.40 ft); minimum, 8.8 cfs Sept. 30.
1946-52: Maximum discharge, 7,160 cfs Oct. 28, 1950 (gage height, 10.82 ft), from rating curve extended above 4,100 cfs by logarithmic plotting; minimum, 4 cfs Sept. 13-15, 1951.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 22-24)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30			
1.2	14	2.4	325	1.0	7.5	2.0	170
1.3	22	3.0	635	1.1	10	2.5	375
1.6	62	5.0	2,060	1.2	16	3.0	635
1.9	130			1.4	37	5.0	2,060
				1.7	89	7.0	3,660

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	49	2,120	440	1,860	265	398	115	40	269	22	11
2	228	43	1,090	339	2,000	217	380	98	37	174	22	10
3	228	41	1,180	281	1,580	198	352	89	36	128	21	10
4	122	41	1,710	290	1,530	217	312	79	*35	100	20	11
5	66	38	1,870	294	924	213	339	71	36	85	20	26
6	41	36	1,010	312	641	213	348	69	37	71	19	21
7	31	33	*629	281	495	198	298	69	36	60	18	15
8	26	34	445	249	425	180	233	170	32	54	18	16
9	22	38	334	277	366	184	184	164	31	48	18	33
10	20	220	269	1,070	316	298	170	131	32	44	17	26
11	25	732	285	749	308	*321	161	117	42	42	16	20
12	57	1,700	307	500	290	303	148	105	43	38	15	17
13	45	1,240	269	384	245	265	167	100	40	36	14	16
14	43	964	221	330	249	237	*330	96	137	35	14	14
15	224	629	180	273	303	202	245	91	151	*33	14	14
16	101	402	177	233	505	177	198	83	91	32	14	13
17	66	284	180	191	470	164	184	83	69	31	14	12
18	49	208	560	174	393	184	198	83	57	30	14	12
19	57	170	800	170	339	205	198	83	49	29	13	12
20	162	149	495	257	298	217	158	79	46	27	12	11
21	208	133	416	273	261	249	131	71	46	27	12	10
22	224	121	2,010	*265	261	253	117	62	43	27	11	9.1
23	1,340	106	1,400	398	420	372	112	57	54	27	11	9.4
24	623	90	1,150	348	526	3,010	112	55	59	26	12	9.8
25	316	90	695	*924	611	1,680	117	54	66	25	12	9.4
26	185	183	599	814	558	1,040	115	52	69	25	12	9.4
27	119	294	781	774	460	731	112	49	67	24	*12	9.4
28	94	695	737	737	384	581	117	49	170	23	12	9.4
29	77	1,590	1,100	731	312	440	103	46	647	23	12	9.1
30	*62	2,440	1,100	1,030	-	388	112	44	495	22	12	9.1
31	56	-	641	1,240	-	445	-	42	-	22	11	-
Total	5,023	12,793	24,760	14,628	17,330	13,647	6,149	2,556	2,793	1,637	464	414.1
Mean	162	426	799	472	598	440	205	82.5	93.1	52.8	15.0	13.8
Cfsm	1.69	4.44	8.32	4.92	6.23	4.58	2.14	0.859	0.970	0.550	0.156	0.144
In.	1.95	4.96	9.59	5.67	6.71	5.29	2.38	0.99	1.08	0.63	0.18	0.16
Ac-ft	9,960	25,370	49,110	29,010	34,370	27,070	12,200	5,070	5,540	3,250	920	821

Calendar year 1951: Max 3,800 Min 4 Mean 307 Cfsm 3.20 In. 43.36 Ac-ft 221,900
Water year 1951-52: Max 3,010 Min 9.1 Mean 279 Cfsm 2.91 In. 39.59 Ac-ft 202,700

Peak discharge (base, 2,500 cfs).--Nov. 30 (3 a.m.) 3,760 cfs (7.12 ft); Dec. 22 (10:30 a.m.) 2,810 cfs (5.94 ft); Feb. 1 (12 p.m.) 2,520 cfs (5.57 ft); Mar. 24 (9 a.m.) 3,990 cfs (7.40 ft).
* Discharge measurement made on this day.

Coast Fork Willamette River near Goshen, Oreg.

Location.--Lat 43°58'40", long. 122°58'00", in NW¼ sec. 29, T. 18 S., R. 2 W., on right bank at downstream side of highway bridge, 2.5 miles east of Goshen, and 6½ miles above confluence with Middle Fork Willamette River.

Drainage area.--642 sq mi.

Records available.--August 1905 to February 1912, October 1950 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 473.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Feb. 7, 1912, staff gage at site 600 ft upstream at different datum.

Average discharge.--8 years (1905-11, 1950-52), 1,777 cfs.

Extremes.--Maximum discharge during year, 14,600 cfs Nov. 30 (gage height, 12.57 ft); minimum, 168 cfs July 30 (gage height, 2.31 ft).
1905-12, 1950-52: Maximum discharge, 58,500 cfs Nov. 22, 1909 (gage height, 19.5 ft, from graph based on gage readings), from rating curve extended above 15,000 cfs by logarithmic plotting, site and datum then in use; minimum, 36 cfs Sept. 29, 30, Oct. 11, 12, 1908.

Remarks.--Records good. Flow regulated by Cottage Grove Reservoir (see p. 131) and Dorena Reservoir (see p. 134). Only small diversions above station.

Revisions.--W 1218: Drainage area. Revised figures of discharge, in cubic feet per second, for periods in the water years 1905-12, superseding those published in Water-Supply Papers 312, 332, and 370, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1905		1906-Con.		1907-Con.		1908-Con.		1909-Con.	
Aug. 29	60	Jan. 2	2,140	Aug. 14	105	Aug. 19	125	Aug. 31	70
30	60	3	1,880	15	105	20	120	Sept. 1	70
31	60	4	1,880	16	105	21	120	2	70
Sept. 1	60	5	2,270	17	100	22	120	3	70
2	60	6	2,140	18	100	23	115	4	70
3	60	7	1,760	19	100	24	115	5	70
4	60	8	1,530	20	95	25	115	6	70
5	60	9	5,160	21	95	26	110	7	70
6	60	10	3,450	22	95	27	110	8	70
7	60	11	2,990	23	95	28	110	9	70
13	60	12	2,840	24	95	31	180	10	80
14	60	13	5,910	30	110	Sept. 1	150	11	145
15	60	14	4,280	31	105	2	130	12	90
16	60	15	3,940	Sept. 1	105	3	120	13	70
17	60	16	6,290	2	100	4	110	14	70
18	60	17	9,870	8	85	5	105	15	70
19	60	18	6,290	9	85	6	110	16	70
20	60	19	4,620	10	85	7	110	17	70
Nov. 4	190	24	6,240	11	85	8	110	18	70
5	190			12	80	10	112	19	70
6	170	1907		13	80			20	80
7	170	Jan. 1	2,270	14	80	1909		21	76
8	170	2	2,140	15	80	Jan. 7	18,200	22	76
9	140	3	14,700	19	150	8	13,400	23	76
10	140	4	36,500	20	120	15	22,600	24	80
11	140	5	12,000	21	105	16	21,600	25	170
12	140	6	7,440	22	100	17	11,800	26	100
13	140	7	5,500	23	95	18	14,300	27	70
14	110	8	4,010	24	90	20	20,600	Nov. 5	1,040
15	110	9	3,410	25	90	22	12,000	6	802
16	110	10	2,980	26	85	Apr. 18	350	18	2,200
17	140	11	2,550	27	85	19	350	21	8,030
18	200	12	2,550	Dec. 22	24,300	20	350	22	30,500
Dec. 1	2,000	13	2,270	23	21,900	21	350	23	28,000
2	2,140	14	2,270	25	28,400	22	320	24	11,200
3	2,270	15	1,760	26	24,600	23	320	25	7,840
4	2,550	16	1,640	27	13,200	24	300		
5	1,880	17	1,640			25	300	1910	
6	1,530	18	1,880			26	350	Jan. 14	1,350
7	1,760	19	1,760	1908		July 9	350	15	1,350
8	2,410	20	1,760	Jan. 20	4,500	10	300	16	1,350
9	1,640	21	1,530	21	4,000	11	260	17	1,300
10	1,320	22	1,320	22	3,200	12	230	18	1,300
11	1,100	23	1,320	23	2,700	13	200	19	2,000
12	1,100	24	2,550	24	2,400	14	180	20	1,800
13	1,000	25	3,120	25	2,100	15	170	22	2,500
19	1,000	26	3,260	Mar. 1	1,900	16	160	23	4,500
20	2,270	27	3,710	2	1,650	Aug. 12	112	24	4,000
21	2,140	28	6,530	3	1,600	13	112	25	3,500
22	1,530	29	12,800	4	1,550	14	70	Nov. 28	23,600
23	1,100	30	10,700	5	1,450	15	70	29	18,500
24	1,000	31	10,200	6	1,400	16	70	30	7,840
25	810	Feb. 1	14,000	7	1,400	17	70		
26	1,320	2	14,900	Aug. 10	130	23	70	1912	
27	3,140	3	21,900	11	130	24	70	Jan. 6	5,310
28	2,550	4	30,100	12	130	25	70	7	16,200
29	1,880	5	23,900	13	130	26	70	12	18,500
30	2,140	6	13,400	14	140	27	70	13	20,000
31	5,160	Aug. 10	210	15	140	28	70		
		11	150	16	130	29	70		
1906		12	110	17	130	30	70		
Jan. 1	3,140	13	105	18	125				

Coast Fork Willamette River near Goshen, Oreg.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1905-12

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
August 1905	-	60	79.3	0.124	0.14	4,880
September	200	52	73.8	.115	.13	4,390
November 1905	2,410	110	507	.790	.88	30,200
December	5,160	555	1,680	2.62	3.02	103,000
January 1906	9,870	1,530	3,570	5.56	6.41	220,000
Water year 1905-6	15,000	68	1,380	2.15	29.16	998,000
Calendar year 1906	15,000	68	1,550	2.41	32.77	1,120,000
January 1907	36,500	1,320	5,420	8.44	9.73	333,000
February	30,100	1,080	6,150	9.58	9.98	342,000
August	275	95	133	.207	.24	8,180
September	235	80	114	.178	.20	6,780
Water year 1906-7	36,500	80	1,990	3.10	42.00	1,440,000
December 1907	28,400	495	7,080	11.0	12.68	435,000
Calendar year 1907	36,500	80	2,300	3.58	48.69	1,670,000
January 1908	8,030	1,450	3,420	5.33	6.14	210,000
March	5,480	1,300	2,000	3.12	3.60	123,000
August	220	110	136	.212	.24	8,360
September	150	36	88.6	.138	.15	5,270
Water year 1907-8	28,400	36	1,800	2.80	38.14	1,310,000
Calendar year 1908	8,030	36	1,330	2.07	28.12	962,000
January 1909	22,600	1,650	7,810	12.2	14.07	480,000
April	1,980	295	630	.981	1.09	37,500
July	655	112	206	.321	.37	12,700
August	151	54	90.6	.141	.16	5,570
September	196	54	85.5	.133	.15	5,090
Water year 1908-9	22,600	36	1,560	2.43	33.11	1,130,000
November 1909	30,500	802	5,140	8.01	8.94	306,000
Calendar year 1909	30,500	54	2,060	3.21	43.69	1,490,000
January 1910	6,190	1,300	2,580	4.02	4.64	159,000
Water year 1909-10	30,500	46	1,690	2.63	35.84	1,230,000
November 1910	23,600	58	2,960	4.61	5.14	176,000
Water year 1910-11	23,600	40	1,470	2.29	31.04	1,060,000
January 1912	20,000	1,980	6,350	9.89	11.40	390,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	629	878	*11,900	3,550	10,400	2,000	2,450	678	328	2,040	176	559
2	720	706	9,960	2,610	11,400	1,500	1,920	580	*334	1,610	216	503
3	974	685	*9,900	2,400	11,900	1,360	1,920	454	334	1,130	375	517
4	1,100	615	11,400	2,090	*12,200	1,190	1,930	426	340	846	381	559
5	1,010	629	11,600	2,570	9,460	1,060	2,120	405	345	692	375	587
6	982	615	8,440	2,570	8,940	982	2,500	405	357	552	375	573
7	830	608	5,280	2,380	4,980	926	2,390	433	363	510	375	559
8	815	587	3,370	2,120	3,440	870	1,540	580	363	440	375	573
9	958	587	2,540	2,090	2,890	878	1,020	720	340	340	426	587
10	958	902	2,270	5,680	2,330	*1,330	870	886	345	275	559	580
11	800	2,480	1,870	5,690	2,310	1,920	1,020	918	387	250	552	573
12	966	8,500	2,220	3,520	2,580	1,830	1,060	622	419	245	552	566
13	990	9,030	2,400	2,940	2,070	1,610	1,030	538	419	236	566	559
14	990	7,850	2,120	2,690	1,670	1,240	*1,540	580	762	*220	559	559
15	1,140	5,290	1,700	2,360	1,860	918	1,540	482	1,610	208	559	552
16	1,080	2,850	1,390	2,030	2,910	762	1,180	454	990	179	566	552
17	1,060	2,120	1,150	1,830	2,990	727	910	433	862	186	573	552
18	1,030	1,720	2,400	1,510	2,530	974	974	412	854	193	566	552
19	1,060	1,250	6,630	1,510	2,250	1,040	1,330	405	838	196	566	545
20	1,140	1,460	3,820	2,070	1,930	1,090	1,290	399	685	196	566	531
21	1,330	1,270	2,430	*2,400	1,570	1,130	1,050	387	387	193	573	538
22	1,320	934	7,330	2,380	1,490	1,100	657	381	381	186	566	538
23	3,020	846	9,680	2,840	1,820	1,340	538	363	405	190	580	538
24	6,380	770	9,760	4,990	1,950	8,430	489	334	545	190	573	531
25	6,320	762	7,620	5,560	1,940	9,150	489	328	594	186	*559	538
26	6,040	918	4,070	4,830	2,000	8,040	482	323	657	182	552	538
27	5,860	1,700	4,880	4,500	2,120	7,060	482	318	664	182	552	538
28	3,850	3,840	5,440	4,240	3,190	6,550	870	318	886	179	552	538
29	*1,830	6,700	7,720	4,270	2,410	6,170	886	318	3,490	182	559	538
30	1,300	13,000	9,130	5,560	-	4,790	650	318	5,020	179	587	538
31	1,010	-	4,720	9,110	-	3,120	-	323	-	176	587	-
Total	57,492	80,102	175,140	104,890	119,530	81,087	37,127	14,521	24,304	12,569	15,498	16,511
Mean	1,855	2,670	5,650	3,384	4,122	2,616	1,238	468	810	405	500	550
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	114,000	158,900	347,400	208,000	237,100	160,800	73,640	28,800	48,210	24,930	30,740	32,750

Calendar year 1951: Max 14,800 Min 134 Mean 2,098 Cfsm 3.27 In. 44.34 Ac-ft 1,518,000
Water year 1951-52: Max 13,000 Min 176 Mean 2,018 Cfsm 3.14 In. 42.81 Ac-ft 1,465,000

* Discharge measurement made on this day.

Willamette River at Springfield, Oreg.

Location.--Lat 44°02'45", long. 123°01'40", in SE¼ sec. 34, T. 17 S., R. 3 W., near center of span on downstream side of highway bridge at Springfield, at mile 185.6.

Drainage area.--2,030 sq mi, approximately.

Records available.--November 1911 to December 1913, June 1919 to September 1952. Published as "at Eugene" June 1919 to September 1928. Gage-height records collected at site at Eugene since 1878 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 423.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Nov. 27, 1911, to Dec. 31, 1913, chain gages on bridge a quarter of a mile upstream at different datum. June 1, 1919, to Nov. 24, 1928, staff gage at site 4 miles downstream at different datum.

Average discharge.--34 years (1912-13, 1919-52), 5,229 cfs.

Extremes.--Maximum discharge during year, 40,600 cfs Mar. 24 (gage height, 10.52 ft); minimum, 1,350 cfs Aug. 2; minimum gage height, 1.99 ft Sept. 29.
1911-13, 1919-52: Maximum discharge, 140,000 cfs Dec. 29, 1945 (gage height, 20.9 ft), from rating curve extended above 93,000 cfs; minimum, 500 cfs Aug. 11, 1926.
Maximum stage recorded by U. S. Weather Bureau, 22.0 ft Jan. 25, 1903, at Eugene. Floods in December 1861 and February 1890 reached about the same stage.

Remarks.--Records good except those for period of shifting control, which are fair. Slight diurnal fluctuation at low flow caused by logging operations in basin of Middle Fork Willamette River. Small diversions above station. Flow regulated at times by Cottage Grove Reservoir (see p. 131) and by Dorena Reservoir (see p. 134).

Revisions (water years).--W 694: Drainage area. W 984: 1921, 1923, 1927. Revised figures of discharge, in cubic feet per second, for water years 1912-13, 1926, 1928, and 1930, superseding those published in Water-Supply Papers 332, 362, 634, 674, and 709, are given herein. Complete tables of daily discharge are given for water years 1926 and 1928, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge
1912		1913-Con.		1930-Con.	
Sept. 1	2,660	July 12	3,500	Jan. 14	2,370
		13	3,600	15	2,370
1913		14	3,200	16	2,370
July 1	12,000	15	3,000	17	2,370
2	9,000	16	2,800	18	2,300
3	8,500	17	2,600	19	2,250
4	11,000	18	2,600	20	2,200
5	9,000	19	2,500	21	2,100
6	10,000	20	2,500	22	2,050
7	7,000	21	2,400	23	2,000
8	5,800			24	1,950
9	5,000	1930		25	1,850
10	4,500	Jan. 12	2,760	26	2,000
11	4,000	13	2,760	27	2,600

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
September 1912.....	3,240	1,170	1,790	0.882	0.98	107,000
Calendar year 1912..	59,600	1,100	6,730	3.32	45.11	4,890,000
July 1913.....	-	1,910	4,400	2.17	2.50	271,000
Water year 1912-13..	48,900	1,050	6,490	3.20	43.38	4,700,000
Calendar year 1913..	48,900	1,050	6,000	2.96	40.12	4,340,000
January 1930.....	13,600	2,970	3,580	1.76	2.03	248,000
Water year 1929-30..	45,200	535	3,380	1.67	22.64	2,480,000
Calendar year 1930..	24,900	618	3,130	1.54	20.91	2,290,000

Willamette River at Springfield, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1925 to September 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,080	740	1,840	2,340	6,880	10,600	1,840	1,960	1,600	830	670	1,200
2	940	740	3,820	2,340	7,160	9,240	1,840	1,960	1,500	920	670	1,010
3	940	880	4,900	2,760	6,100	8,300	1,960	1,840	1,400	920	670	875
4	880	960	3,820	2,760	16,400	7,440	2,620	1,840	1,300	1,010	670	830
5	880	740	3,460	3,060	45,100	6,620	3,220	4,260	1,200	1,010	600	750
6	820	810	2,800	3,540	39,100	5,840	3,380	4,880	1,400	830	670	750
7	880	810	2,500	4,060	52,800	5,100	3,060	4,460	1,300	830	600	790
8	880	810	2,360	3,880	31,000	4,660	3,060	3,880	1,300	830	600	750
9	880	740	2,360	3,060	20,700	4,660	2,900	3,380	1,300	830	600	670
10	880	810	2,360	2,760	18,200	4,460	2,900	3,220	1,200	830	600	670
11	820	1,040	2,220	2,760	20,700	4,060	2,760	2,900	1,200	830	500	670
12	820	2,800	2,650	2,480	15,900	3,700	4,060	2,760	1,200	830	530	635
13	820	3,640	5,880	2,340	12,000	3,700	3,540	2,620	1,200	830	565	635
14	820	2,650	4,660	2,480	9,920	3,700	3,060	2,480	1,200	750	600	670
15	820	2,360	4,660	2,480	8,000	3,540	3,060	2,340	1,100	750	600	670
16	820	2,500	3,460	2,760	7,720	3,700	2,900	2,200	1,100	750	530	710
17	820	1,960	4,660	2,760	10,300	3,700	2,900	2,080	1,100	750	530	1,720
18	770	1,820	4,440	6,100	8,600	3,540	2,760	1,960	1,100	750	670	1,600
19	770	1,820	6,700	7,440	8,000	3,380	2,760	1,960	1,100	750	1,400	1,300
20	770	1,310	3,820	4,880	8,600	3,220	2,620	1,960	1,100	750	1,400	1,100
21	770	1,310	9,750	4,060	10,900	3,060	2,480	2,200	1,100	750	1,010	965
22	745	1,130	9,920	5,580	13,500	3,060	2,340	1,960	1,100	670	875	965
23	745	1,040	13,500	4,880	14,700	2,480	3,220	1,960	1,100	670	710	920
24	745	960	13,500	4,880	26,300	2,620	2,760	1,840	1,100	750	750	920
25	720	880	8,920	4,260	36,400	2,760	2,480	1,840	1,100	750	670	920
26	745	1,410	6,360	3,880	25,800	2,620	2,200	1,720	1,100	670	710	790
27	720	2,220	4,880	3,700	15,900	2,760	2,200	1,600	1,100	750	1,060	920
28	720	2,500	4,060	3,700	13,500	2,340	2,080	1,720	1,010	670	1,100	750
29	695	1,730	3,880	3,880	-	2,080	2,200	1,720	1,010	670	920	750
30	645	1,730	3,700	9,920	-	1,960	2,080	1,840	920	670	830	790
31	620	-	2,900	7,440	-	1,840	-	1,720	-	670	1,200	-
Total	24,980	44,450	154,740	123,220	510,180	130,740	81,240	75,060	35,540	24,270	23,510	26,695
Mean	806	1,480	4,990	3,970	18,200	4,220	2,710	2,420	1,180	783	758	890
Cfsm	0.397	0.729	2.46	1.96	8.97	2.08	1.33	1.19	0.581	0.386	0.373	0.438
In.	0.46	0.81	2.84	2.26	9.34	2.40	1.48	1.37	0.65	0.44	0.43	0.49
Ac-ft	49,600	88,100	307,000	244,000	‡1,010	259,000	161,000	149,000	70,200	48,100	46,600	53,000

Calendar year 1925: Max 52,600 Min 620 Mean 5,420 Cfsm 2.67 In. 36.26 Ac-ft 3,930,000
Water year 1925-26: Max 52,800 Min 500 Mean 3,440 Cfsm 1.69 In. 22.97 Ac-ft 2,490,000

‡ Expressed in thousands.

Discharge, in cubic feet per second, water year October 1927 to September 1928

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,750	2,110	21,400	7,900	9,160	5,230	27,900	7,300	2,760	1,440	1,100	770
2	4,200	1,860	15,400	19,800	7,900	5,440	19,800	7,300	2,630	1,440	1,030	770
3	4,560	1,740	12,000	21,400	7,900	4,630	15,400	6,090	2,380	1,440	1,030	770
4	5,780	1,740	11,400	21,400	6,960	3,740	13,000	6,090	2,380	1,440	1,030	770
5	9,130	1,740	9,160	21,400	6,510	5,650	11,700	5,230	2,380	1,530	1,030	770
6	6,960	1,740	7,900	17,400	6,730	5,440	10,800	5,230	2,260	1,830	1,030	770
7	5,780	2,790	6,290	16,600	5,650	5,230	9,960	5,230	2,040	1,630	960	770
8	4,750	4,750	5,650	13,000	5,650	5,020	9,160	5,230	1,930	1,530	960	710
9	4,030	4,750	6,510	10,500	5,650	5,650	7,900	5,230	1,830	1,440	960	710
10	3,090	9,740	7,420	9,960	5,440	7,900	7,900	5,440	1,830	1,350	960	840
11	2,790	6,960	6,730	9,160	5,230	35,200	6,960	5,230	1,830	1,350	890	600
12	2,510	4,750	6,070	7,900	5,230	40,300	6,730	5,230	1,930	1,260	960	840
13	2,370	4,750	7,420	8,650	4,820	20,600	6,730	4,840	1,930	1,260	960	1,400
14	2,240	4,030	10,500	24,800	4,270	14,400	6,730	4,840	1,830	1,260	890	1,060
15	1,980	4,750	7,900	16,600	4,090	10,500	6,730	4,840	1,830	1,180	890	910
16	1,740	9,740	7,420	12,000	3,910	9,160	6,730	4,120	1,730	1,180	890	840
17	1,620	23,400	7,900	9,690	3,740	7,900	7,900	4,120	1,630	1,180	890	840
18	1,740	11,400	7,900	8,650	3,400	6,730	9,160	3,630	1,630	1,260	830	650
19	1,740	8,840	7,900	8,650	3,240	6,510	9,960	3,330	1,630	1,260	830	710
20	1,510	8,270	7,420	7,190	2,930	6,070	12,000	3,330	1,630	1,180	830	710
21	1,400	9,130	6,070	6,290	3,240	5,860	11,100	3,330	1,530	1,180	830	710
22	1,300	11,400	5,650	6,510	3,400	7,420	10,500	3,040	1,530	1,180	830	710
23	1,300	9,740	5,440	6,730	3,570	7,900	10,500	2,760	1,530	1,180	830	710
24	1,510	9,130	5,650	6,070	3,740	7,900	10,500	2,760	1,440	1,100	770	710
25	2,110	9,130	5,650	7,900	5,650	9,160	9,420	2,760	1,440	1,100	770	710
26	1,980	30,400	5,230	8,650	5,650	9,690	9,160	2,760	1,440	1,100	770	710
27	1,740	24,800	5,650	8,900	5,440	25,700	7,420	2,760	1,440	1,100	770	770
28	1,740	30,400	7,900	7,900	5,230	19,400	6,960	2,900	1,440	1,100	770	840
29	1,740	35,700	10,500	9,160	5,020	15,400	6,730	2,760	1,440	1,030	770	840
30	2,240	24,800	8,400	10,500	-	15,100	6,730	2,760	1,440	1,030	770	840
31	2,240	-	7,900	10,500	-	18,200	-	2,760	-	1,100	770	-
Total	92,570	314,480	254,330	361,760	149,350	353,030	302,170	133,230	54,690	39,640	27,600	23,760
Mean	2,990	10,500	8,200	11,700	5,150	11,400	10,100	4,300	1,820	1,280	890	792
Cfsm	1.47	5.17	4.04	5.76	2.54	5.62	4.98	2.12	0.897	0.631	0.438	0.390
In.	1.70	5.77	4.66	6.64	2.74	6.48	5.56	2.44	1.00	0.73	0.50	0.44
Ac-ft	184,000	625,000	504,000	719,000	296,000	701,000	601,000	264,000	108,000	78,700	54,700	47,100

Calendar year 1927: Max 85,700 Min 750 Mean 6,590 Cfsm 3.25 In. 44.06 Ac-ft 4,770,000
Water year 1927-28: Max 40,300 Min 600 Mean 5,760 Cfsm 2.84 In. 38.66 Ac-ft 4,180,000

Willamette River at Springfield, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,650	3,610	31,400	10,900	27,400	7,720	11,100	6,830	5,000	7,610	1,390	1,570
2	3,340	3,130	25,500	9,030	33,300	6,590	9,950	6,170	4,620	6,140	1,380	1,500
3	5,530	2,910	24,000	8,140	30,800	6,050	9,870	5,550	*4,570	5,160	1,540	1,490
4	4,320	2,760	28,100	7,460	33,000	6,050	9,430	5,050	4,730	4,600	1,610	*1,510
5	3,090	2,650	31,000	7,680	25,500	5,760	10,100	4,650	5,020	4,220	1,580	1,700
6	2,540	2,490	22,200	7,570	20,100	5,470	11,700	4,500	5,300	3,770	1,540	1,700
7	2,110	2,360	14,900	6,900	14,900	5,190	12,200	4,570	5,130	3,430	1,530	1,600
8	1,930	*2,280	11,300	6,490	12,200	4,920	10,900	6,230	4,780	3,170	1,530	1,640
9	2,000	2,240	9,270	6,330	11,000	4,890	9,110	7,000	4,730	2,950	1,540	2,040
10	1,960	3,090	8,100	11,700	9,950	6,930	8,140	6,550	4,730	2,780	1,790	2,040
11	1,800	6,330	7,720	11,900	9,670	*7,680	7,950	6,660	4,420	2,610	1,760	1,650
12	2,840	21,200	8,250	9,430	9,950	7,070	7,650	6,590	4,080	2,490	1,700	1,640
13	3,340	23,000	8,450	7,950	8,600	6,360	7,570	6,900	3,610	2,330	1,690	1,600
14	2,910	20,500	7,680	7,530	7,840	5,760	8,950	7,530	3,740	2,180	1,680	1,570
15	5,500	15,100	6,760	6,790	8,330	5,130	8,680	8,960	5,000	*2,050	1,660	1,530
16	4,750	10,800	6,260	5,990	10,800	4,700	7,610	6,260	3,930	1,890	1,660	1,520
17	3,700	8,410	6,170	5,390	10,500	4,500	7,040	6,360	3,630	1,800	1,750	1,510
18	3,210	7,040	*8,220	4,920	9,510	4,890	7,570	6,760	3,680	1,760	1,650	1,490
19	3,790	5,960	15,300	4,810	8,520	4,920	9,230	7,180	3,790	1,710	1,610	1,480
20	5,800	5,930	10,900	5,760	7,650	4,920	8,920	7,350	3,790	1,660	1,610	1,470
21	8,030	5,390	8,760	6,200	6,860	4,920	7,680	6,900	3,680	1,620	1,610	1,450
22	8,990	4,620	26,500	6,140	6,460	4,780	*6,590	6,230	3,450	1,570	1,620	1,410
23	19,700	4,250	25,000	6,930	7,500	5,390	6,390	5,870	3,470	1,540	1,620	1,410
24	19,900	3,860	20,600	10,100	8,140	30,900	6,520	6,050	4,320	1,520	1,570	1,400
25	14,400	3,680	15,600	11,700	8,330	31,800	7,320	6,360	4,300	1,490	1,640	1,400
26	12,200	4,270	11,500	10,700	8,800	25,500	8,370	6,260	3,890	1,470	1,640	1,400
27	11,000	6,200	12,600	10,500	8,920	20,900	8,250	6,140	3,680	1,440	1,620	1,390
28	8,680	11,500	15,100	10,300	9,710	18,600	8,920	6,490	4,550	1,410	1,560	1,400
29	5,760	18,800	20,000	10,500	8,600	16,500	8,370	6,420	9,720	1,400	1,540	1,400
30	4,890	31,600	21,000	12,800	-	14,000	7,140	5,810	12,000	1,400	1,610	1,390
31	4,080	-	13,700	*21,800	-	12,600	-	5,440	-	1,390	1,600	-
Total	184,740	245,960	481,840	270,340	382,840	301,390	259,220	193,620	141,340	80,560	49,830	46,300
Mean	5,959	8,199	15,540	8,721	13,200	9,722	8,641	6,246	4,711	2,599	1,607	1,543
Cfsm	2.94	4.04	7.66	4.30	6.50	4.79	4.26	3.08	2.32	1.28	0.792	0.760
In.	3.38	4.51	8.83	4.95	7.01	5.52	4.75	3.55	2.59	1.48	0.91	0.85
Ac-ft	366,400	487,900	955,700	536,200	759,400	597,800	514,200	384,000	280,300	159,800	98,840	91,830

Calendar year 1951: Max 33,700 Min 950 Mean 6,881 Cfsm 3.39 In. 46.03 Ac-ft 4,981,000
Water year 1951-52: Max 33,300 Min 1,380 Mean 7,208 Cfsm 3.55 In. 48.33 Ac-ft 5,232,000

Peak discharge (base, 35,000 cfs).--Feb. 4 (3 a.m.) 36,500 cfs (9.93 ft); Mar. 24 (5:30 p.m.) 40,600 cfs (10.52 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used July 18 to Sept. 30.

McKenzie River at outlet of Clear Lake, Oreg.

Location.--Lat 44°21'40", long. 121°59'40", in SE¼ sec. 8, T. 14 S., R. 7 E., on west bank of Clear Lake in narrow channel, 150 ft above outlet and at mile 85.9 (Geological Survey Plan and Profile).

Drainage area.--101 sq mi.

Records available.--June 1912 to July 1915, October 1947 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 3,015.32 ft above mean sea level (levels by Eugene Water and Electric Board). June 20, 1912, to July 31, 1915, float gage at site 1 mile north at different datum.

Average discharge.--7 years (1912-14, 1947-52), 512 cfs.

Extremes.--Maximum discharge during year, 1,090 cfs May 28 (gage height, 4.17 ft); minimum, 276 cfs Oct. 1, Sept. 30.

1912-15, 1947-52: Maximum discharge, 2,320 cfs Jan. 7, 1948 (gage height, 6.75 ft), from rating curve extended above 1,400 cfs by logarithmic plotting; minimum daily, 201 cfs July 31, 1915.

A discharge of 165 cfs was measured on Sept. 28, 1915.

Remarks.--Records excellent. Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sink holes in lava rock along south edge of lake above station.

Revisions.--W 1124: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from log on control Dec. 1 to Feb. 7)

Oct. 1 to May 27				May 28 to Sept. 30	
1.8	263	3.0	610	1.7	274
2.0	310	4.0	1,000	2.0	346
2.5	445	5.0	1,420	3.0	645
				4.2	1,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	281	516	924	430	312	388	394	836	968	662	445	336
2	292	505	872	427	325	380	406	820	952	642	439	333
3	302	490	760	427	362	378	412	800	948	624	439	330
4	305	469	704	418	409	370	421	776	948	620	436	330
5	322	454	684	406	436	360	421	752	960	610	433	328
6	328	439	659	397	467	355	430	736	956	595	430	320
7	328	433	638	391	472	348	457	724	920	586	427	318
8	325	424	617	385	500	340	544	752	888	574	427	323
9	318	415	592	385	550	335	561	788	880	562	422	320
10	310	424	561	382	624	332	561	760	876	553	416	*318
11	305	436	536	370	596	325	568	788	*848	544	410	318
12	305	466	512	360	561	320	575	816	816	532	410	315
13	300	454	490	350	536	312	589	860	788	523	405	313
14	310	445	469	348	519	310	617	900	768	514	402	310
15	315	439	454	340	512	302	624	892	757	508	396	310
16	322	442	448	*328	505	300	620	892	732	505	394	308
17	328	*442	433	322	490	300	624	936	718	496	388	306
18	335	439	433	318	478	*298	662	980	712	487	385	303
19	340	439	418	312	466	295	756	1,020	704	481	382	303
20	345	442	403	310	454	288	752	1,040	690	472	374	301
21	352	442	406	308	439	283	724	1,030	690	466	371	298
22	372	436	409	305	439	281	704	1,000	676	463	368	294
23	424	430	400	310	436	283	724	996	666	460	366	292
24	436	427	397	315	424	290	748	1,020	659	*457	363	289
25	493	427	397	310	418	292	800	1,050	645	457	357	287
26	540	436	391	302	412	305	848	1,040	631	454	354	285
27	544	436	388	295	403	322	876	1,040	624	451	352	283
28	547	454	388	292	400	338	900	1,080	624	454	346	281
29	550	490	415	290	391	350	872	1,060	648	451	343	278
30	550	628	442	298	-	365	832	1,020	684	448	341	276
31	540	-	433	302	-	382	-	1,000	-	448	341	-
Total	11,664	13,619	16,073	10,733	13,326	10,127	19,022	28,184	23,376	16,099	12,162	9,206
Mean	376	454	518	346	460	327	634	909	779	519	392	307
Cfsm	3.72	4.50	5.13	3.43	4.55	3.24	6.28	9.00	7.71	5.14	3.88	3.04
In.	4.29	5.01	5.92	3.95	4.91	3.73	7.00	10.38	8.61	5.93	4.48	3.39
Ac-ft	23,140	27,010	31,880	21,290	26,430	20,090	37,730	55,900	46,370	31,930	24,120	18,260

Calendar year 1951: Max 1,210 Min 270 Mean 560 Cfsm 5.54 In. 75.33 Ac-ft 405,800
Water year 1951-52: Max 1,080 Min 276 Mean 502 Cfsm 4.97 In. 67.60 Ac-ft 364,200

Peak discharge (base, 750 cfs).--Dec. 1 (4 to 5 p.m.) 1,040 cfs (4.09 ft); May 28 (11 p.m.) 1,090 cfs (4.17 ft).

* Discharge measurement made on this day.

McKenzie River at McKenzie Bridge, Oreg.

Location.--Lat 44°10'50", long. 122°07'20", in NE¼ sec. 18, T. 16 S., R. 6 E., on left bank 1.7 miles east of village of McKenzie Bridge, 2¾ miles upstream from mouth of Horse Creek, and at mile 66.4 (Geological Survey Plan and Profile).

Drainage area.--345 sq mi at measuring section three-quarters of a mile upstream from gage.

Records available.--August 1910 to September 1952. Published as "near McKenzie Bridge" August 1910 to September 1911 and October 1914 to September 1916.

Gage.--Water-stage recorder. Datum of gage is 1,419.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 12, 1932, staff gage at several sites within 2 miles of present site and at various datums.

Average discharge.--36 years (1910-14, 1915-16, 1918-21, 1923-25, 1926-52), 1,625 cfs.

Extremes.--Maximum discharge during year, 4,630 cfs Oct. 23 (gage height, 4.12 ft); minimum, 1,180 cfs Mar. 21-23.

1910-52: Maximum discharge, 16,500 cfs (revised) Jan. 6, 1923 (gage height, 8.3 ft, from floodmarks, site and datum then in use), from rating curve extended above 6,300 cfs; minimum, 805 cfs Oct. 20, 1931.

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede those published in the Water-Supply Papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
332-c.....	1912	Jan. 13, 1912	7,660	†5.2
444.....	1916	Feb. 7, 1916	5,750	†4.5
514.....	1919	Jan. 22, 1919	5,150	†3.7
514.....	1920	Jan. 26, 1920	6,250	†4.2
534.....	1921	Dec. 30, 1920	8,750	†5.2
554.....	1922	Nov. 21, 1921	8,250	5.0
574.....	1923	Jan. 6, 1923	16,500	8.3
594.....	1924	Feb. 4, 1924	3,540	3.00

† From graph based on gage readings.

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

Revisions.--W 814: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1911-13 and 1922-24 (complete daily tables given on following pages) and for periods in the water years 1914-16, 1920-21, and 1925, superseding figures published in Water-Supply Papers 312, 332c, 362c, 394, 414, 444, 514, 534, 554, 574, 594, and 614, are given herein.

Discharge, in cubic feet per second, water year October 1910 to September 1911

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	a1,040	2,660	1,490	1,490	1,130	1,770	a1,600	a1,900	a1,500	1,210	1,130
2	1,120	a1,040	2,800	1,490	1,490	1,130	1,770	a1,700	a1,850	a1,500	1,210	1,130
3	1,210	a1,040	3,710	1,490	1,490	1,130	1,670	a1,750	a1,800	a1,450	1,210	1,130
4	1,260	a1,040	3,370	1,490	1,490	1,130	1,570	1,880	1,770	a1,450	1,210	1,130
5	a1,150	a1,040	3,040	1,490	1,490	1,130	1,570	1,880	1,770	a1,450	1,210	1,130
6	a1,100	a1,040	2,730	1,490	1,490	1,210	1,570	a1,880	a1,770	a1,450	1,210	a1,130
7	a1,100	a1,300	2,440	1,490	1,490	1,210	1,470	a1,800	a1,700	a1,450	1,210	a1,130
8	a1,100	a1,480	2,580	1,490	1,390	1,210	1,470	1,880	a1,700	a1,450	1,210	a1,130
9	1,080	a1,480	2,880	1,490	1,390	1,210	1,570	a1,880	a1,700	a1,400	1,210	1,130
10	1,080	a1,650	2,510	1,490	1,390	1,210	1,570	a1,880	a1,650	a1,400	1,210	a1,130
11	1,080	a1,480	2,440	1,490	1,390	1,210	1,570	a1,900	1,770	a1,400	1,210	1,130
12	1,120	a1,400	2,440	1,490	1,390	1,210	1,470	a2,000	a1,850	a1,400	a1,210	1,130
13	1,080	a1,250	2,180	1,390	1,390	1,210	1,470	a1,850	1,770	a1,400	1,210	1,130
14	a1,100	a1,250	2,120	1,390	1,390	1,210	1,470	a1,800	1,770	a1,400	a1,210	1,130
15	a1,100	a1,250	1,990	1,390	1,300	1,290	1,470	a1,750	1,670	a1,400	1,210	a1,150
16	1,120	a1,250	a2,000	a1,300	1,300	1,290	a1,470	a1,750	1,570	a1,400	1,130	a1,150
17	a1,120	a1,250	1,810	1,300	1,300	1,380	1,470	1,770	1,570	a1,400	1,130	a1,150
18	a1,120	a1,250	1,810	1,490	1,300	1,380	1,470	2,600	a1,550	a1,400	1,130	a1,150
19	a1,100	a1,250	1,810	1,810	1,300	1,380	1,470	2,440	a1,500	1,380	1,130	a1,150
20	a1,100	a2,200	1,700	1,700	1,300	1,500	1,470	2,290	a1,500	1,380	1,130	a1,150
21	a1,080	a2,600	1,700	1,590	1,300	a1,500	1,470	a2,200	a1,500	1,290	1,130	a1,200
22	a1,080	a2,800	1,640	1,490	1,300	1,570	1,570	a2,100	a1,500	1,290	a1,130	a1,200
23	1,080	a3,100	1,640	1,490	1,300	1,670	1,570	a2,100	a1,500	1,290	1,130	a1,200
24	1,080	a2,100	1,700	1,490	1,300	1,570	1,570	2,000	a1,500	1,290	1,130	a1,200
25	1,080	1,870	1,640	1,490	1,300	1,570	1,670	1,880	a1,400	1,290	a1,130	a1,200
26	1,080	1,810	1,590	1,490	1,300	1,570	a1,670	1,770	a1,400	1,290	1,130	a1,200
27	1,080	1,810	1,590	1,490	1,300	1,470	a1,650	1,770	a1,450	1,290	a1,130	a1,200
28	1,040	2,310	1,590	1,490	1,210	1,470	a1,600	a1,700	a1,450	1,290	1,130	a1,150
29	1,040	3,370	1,590	1,390	-	1,470	a1,600	a1,750	a1,500	1,290	a1,130	a1,150
30	1,040	3,040	1,590	1,490	-	1,570	a1,600	a1,800	a1,500	1,210	a1,130	a1,150
31	1,040	-	a1,600	1,490	-	1,670	-	a1,800	-	1,210	1,130	-
Total	34,080	50,790	66,890	46,040	38,270	41,860	46,770	59,150	48,830	42,490	36,230	34,570
Mean	1,100	1,690	2,160	1,490	1,370	1,350	1,560	1,910	1,630	1,370	1,170	1,150
Cfsm	3.19	4.90	6.26	4.32	3.97	3.91	4.52	5.54	4.72	3.97	3.39	3.33
In.	3.68	5.47	7.22	4.98	4.13	4.51	5.04	6.39	5.27	4.58	3.91	3.72
Ac-ft	67,600	101,000	133,000	91,600	76,100	83,000	92,800	117,000	97,000	84,200	71,900	68,400

Calendar year 1910: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1910-11: Max 3,710 Min 1,040 Mean 1,500 Cfsm 4.35 In. 58.90 Ac-ft 1,080,000

a No gage-height record; discharge estimated on basis of records for gage at highway bridge and station near Vida.

McKenzie River at McKenzie Bridge, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1911 to September 1912

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,200	a1,000	1,470	a1,280	a2,450	a2,150	a1,470	1,770	a2,200	1,770	a1,380	a1,310
2	a1,200	a1,000	1,380	a1,250	2,290	a2,150	a1,470	1,770	2,140	a1,700	a1,380	1,310
3	a1,200	a1,000	1,380	a1,200	2,140	a1,850	a1,470	1,770	2,000	a1,650	a1,380	a1,700
4	a1,200	a950	1,380	a1,200	2,000	a1,850	a1,470	1,770	a2,000	a1,600	a1,380	a1,650
5	a1,200	a950	1,570	a1,300	2,140	a1,800	a1,470	1,770	2,000	a1,600	a1,380	1,570
6	a1,100	1,050	1,470	a1,450	a2,050	a1,800	a1,470	1,770	2,000	a1,600	a1,380	a1,600
7	a1,100	1,210	1,470	a2,500	2,000	a1,800	1,470	1,770	2,000	1,570	a1,380	a1,630
8	a1,100	1,380	1,380	a1,900	2,140	a1,650	1,470	1,880	a1,900	1,570	1,380	a1,800
9	a1,100	1,290	1,470	a2,000	2,290	a1,650	1,470	2,000	1,880	a1,500	a1,340	a1,600
10	a1,100	1,210	1,470	2,000	2,950	1,570	1,770	2,000	1,770	a1,500	a1,340	a1,450
11	a1,100	a1,170	a1,400	1,770	2,950	1,570	1,670	a2,000	1,770	a1,500	1,340	1,360
12	a1,100	1,130	a1,400	5,030	a2,700	1,570	a1,600	2,000	1,770	a1,500	a1,340	a1,350
13	a1,100	1,130	a1,350	6,810	2,440	1,570	1,570	2,140	2,000	a1,450	a1,340	a1,350
14	a1,100	1,770	a1,350	5,260	2,440	1,470	1,570	2,290	2,140	a1,450	a1,340	a1,350
15	a1,100	3,530	1,470	3,940	a2,500	1,570	1,570	2,290	2,000	a1,450	a1,400	a1,350
16	a1,100	2,140	1,470	3,330	3,940	1,570	1,470	2,000	a1,850	a1,450	1,380	a1,300
17	a1,100	2,290	1,470	2,950	4,800	a1,570	1,470	2,000	1,770	a1,400	1,380	a1,250
18	a1,050	2,140	a1,350	2,770	a4,000	1,570	a1,500	2,000	1,770	a1,400	a1,400	a1,250
19	a1,050	2,000	a1,400	2,600	3,730	1,570	1,570	2,000	1,770	a1,400	a1,350	a1,250
20	a1,050	a1,950	a1,400	2,440	2,950	a1,500	1,470	2,140	1,770	a1,400	a1,350	a1,200
21	a1,050	1,880	a1,400	2,290	2,950	1,470	1,470	2,140	1,880	a1,400	a1,350	a1,200
22	a1,050	1,770	a1,300	2,290	2,770	1,470	1,470	1,880	1,880	a1,400	a1,300	a1,200
23	a1,050	a1,700	1,380	2,140	2,600	a1,470	1,470	1,880	1,770	a1,400	a1,300	a1,200
24	a1,050	a1,700	1,380	2,140	2,440	1,470	1,470	1,880	1,770	a1,400	1,270	a1,190
25	a1,050	a1,650	1,380	a3,200	a2,300	a1,470	1,470	1,880	1,770	a1,400	a1,270	a1,190
26	a1,050	a1,800	1,380	3,140	2,140	a1,500	1,470	2,000	a1,750	1,380	a1,270	a1,190
27	a1,050	1,670	1,380	2,770	a2,150	a1,500	1,470	2,290	1,770	a1,380	a1,270	a1,190
28	a1,000	1,570	1,380	2,770	2,290	a1,500	a1,500	2,290	1,770	1,380	a1,270	a1,190
29	a1,000	1,570	1,290	2,950	a2,150	a1,550	1,570	2,600	a1,770	a1,380	a1,270	1,190
30	a1,000	1,570	1,290	2,770	-	a1,500	1,670	2,440	a1,800	a1,380	a1,330	a1,190
31	a1,000	-	1,290	2,600	-	1,470	-	a2,300	-	a1,380	a1,330	-
Total	33,700	47,170	43,350	82,040	76,690	50,170	45,490	62,710	56,430	45,740	41,570	40,560
Mean	1,090	1,570	1,400	2,650	2,640	1,620	1,520	2,020	1,880	1,480	1,340	1,350
Cfsm	3.16	4.55	4.06	7.68	7.65	4.70	4.41	5.86	5.45	4.29	3.88	3.91
In.	3.64	5.08	4.68	8.85	8.25	5.42	4.92	6.76	6.08	4.95	4.47	4.36
Ac-ft	67,000	93,400	86,100	163,000	152,000	99,600	90,400	124,000	112,000	91,000	82,400	80,300

Calendar year 1911: Max 3,530 Min 950 Mean 1,420 Cfsm 4.12 In. 55.93 Ac-ft 1,030,000
Water year 1911-12: Max 6,810 Min 950 Mean 1,710 Cfsm 4.96 In. 67.46 Ac-ft 1,240,000

a No gage-height record; discharge estimated on basis of records for gage at highway bridge and station near Vida.

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,190	a1,500	a1,300	a2,100	a1,470	1,380	3,320	a1,800	a2,690	2,220	1,530	1,360
2	a1,190	a1,450	a1,300	a2,000	1,470	1,380	2,840	a1,800	a2,860	2,120	1,530	1,360
3	a1,190	a1,500	a1,350	a2,200	1,470	1,380	2,540	a1,700	a2,860	2,180	1,530	1,490
4	a1,190	a1,700	a1,400	a2,100	1,470	1,470	2,540	a1,700	a2,740	2,180	1,510	1,450
5	a1,190	a2,000	a1,400	a2,000	1,470	1,570	a2,700	a1,700	a2,660	2,120	1,530	1,410
6	a1,190	a2,400	a1,400	a1,900	1,380	1,570	a2,600	a2,200	a2,580	2,120	1,530	1,370
7	a1,190	a2,400	a1,400	a1,800	1,380	1,570	a2,400	a2,300	a2,500	2,100	1,510	1,360
8	a1,190	a2,200	a1,400	a2,000	1,380	1,670	a2,300	a3,000	a2,400	2,010	1,490	1,360
9	a1,190	a2,400	a1,400	a1,800	1,380	1,670	a2,200	a2,800	a2,260	2,010	1,490	1,360
10	a1,150	a2,500	a1,400	a1,700	1,380	1,770	a2,100	a2,700	a2,260	1,960	1,470	1,340
11	a1,150	a3,000	a1,400	a1,700	1,380	1,770	a2,200	2,690	a2,260	1,900	1,470	1,310
12	a1,150	a2,900	a1,400	1,770	1,380	1,670	a2,300	2,690	a2,260	1,880	1,470	1,310
13	a1,150	a2,500	a1,550	1,880	1,380	a1,620	a2,200	2,540	a2,260	1,850	1,470	1,310
14	a1,150	a2,500	a1,600	1,880	1,380	1,570	a2,100	2,400	a2,260	1,820	1,450	1,310
15	a1,150	a2,300	a1,600	1,770	1,570	1,470	a2,100	2,400	a2,200	1,800	1,450	1,300
16	a1,150	a2,000	a2,000	1,670	1,570	1,570	a2,100	2,540	2,100	1,780	1,450	1,300
17	a1,150	a1,900	a1,900	1,670	1,770	a1,570	a2,000	2,540	2,060	1,710	1,450	1,300
18	a1,200	a1,700	a2,000	1,770	1,670	1,570	a2,100	2,840	2,030	1,710	1,430	1,290
19	a1,200	a1,700	a2,000	1,570	1,570	1,670	a2,100	2,690	2,120	1,680	1,430	1,290
20	a1,200	a1,650	a1,900	a1,570	1,570	1,570	a2,100	2,690	2,100	1,680	1,430	1,270
21	a1,200	a1,550	a1,900	1,570	1,570	1,570	a2,100	2,540	2,100	1,660	1,410	1,270
22	a1,750	a1,500	a1,600	1,570	a1,520	1,570	a2,100	2,540	2,570	1,680	1,410	1,270
23	a1,800	a1,500	a1,600	1,470	1,470	1,570	a2,000	2,690	2,570	1,680	1,410	1,270
24	a1,600	a1,450	a1,600	1,570	1,470	1,470	a2,000	2,840	2,610	1,660	1,390	1,270
25	a1,500	a1,350	a1,550	1,570	1,380	1,470	a2,000	2,840	2,470	1,660	1,410	1,250
26	a1,500	a1,350	a1,500	1,570	1,380	1,380	a2,100	a2,840	2,330	1,660	1,390	1,250
27	a1,450	a1,350	a1,500	a1,550	1,380	1,380	a2,000	2,840	2,370	1,620	1,370	1,250
28	a1,450	a1,350	a1,500	a1,530	1,380	1,470	a1,900	2,690	2,240	1,580	1,370	1,250
29	a1,500	a1,300	a1,700	a1,510	-	2,690	a1,900	a2,690	2,180	1,580	1,370	1,240
30	a1,600	a1,300	a2,500	a1,490	-	4,800	a1,800	a2,690	2,240	1,600	1,370	1,240
31	a1,600	-	a2,300	1,470	-	5,030	-	a2,690	-	1,530	1,360	-
Total	40,460	56,200	50,350	53,720	41,040	55,880	66,740	77,610	71,140	56,740	44,880	39,410
Mean	1,310	1,870	1,620	1,730	1,470	1,800	2,220	2,500	2,370	1,830	1,450	1,310
Cfsm	3.80	5.42	4.70	5.01	4.26	5.22	6.43	7.25	6.87	5.30	4.20	3.80
In.	4.38	6.05	5.42	5.78	4.44	6.02	7.17	8.36	7.66	6.11	4.84	4.24
Ac-ft	80,600	111,000	99,600	106,000	81,600	111,000	132,000	154,000	141,000	113,000	89,200	78,000

Calendar year 1912: Max 6,810 Min 1,150 Mean 1,770 Cfsm 5.13 In. 69.91 Ac-ft 1,290,000
Water year 1912-13: Max 5,030 Min 1,150 Mean 1,790 Cfsm 5.19 In. 70.47 Ac-ft 1,300,000

a No gage-height record; discharge estimated on basis of records for gage at highway bridge and station near Vida.

McKenzie River at McKenzie Bridge, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1921 to September 1922

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,320	1,390					a1,300	1,590	2,550	1,590	a1,300	a1,100
2	1,320	1,390					a1,500	a1,600	2,550	1,590	a1,300	1,120
3	1,320	a1,350					1,590	a1,700	2,310	1,590	a1,300	a1,120
4	a1,300	a1,350					1,670	a1,700	2,680	1,590	a1,300	1,120
5	a1,300	a1,350		a1,400			1,590	1,750	2,550	1,550	1,270	1,120
6	a1,300	1,320					a1,500	2,020	2,430	1,550	a1,250	a1,100
7	a1,300	a1,300					a1,500	1,930	2,310	1,510	a1,250	a1,100
8	a1,300	a1,250					a1,500	a1,900	2,210	1,510	1,240	1,090
9	a1,300	a1,250		1,430			a1,500	a1,800	a2,300	1,550	1,240	1,090
10	a1,300	1,250		a1,500			a1,500	a1,700	2,430	a1,500	1,240	1,090
11	1,250	1,250		1,430			a1,500	a1,700	2,210	a1,500	1,240	1,090
12	a1,250	a1,220		1,390			a1,400	a1,700	2,210	1,430	a1,200	1,090
13	a1,250	a1,200		1,350			a1,400	a1,800	a2,200	1,430	a1,200	a1,060
14	a1,250	a1,180					a1,400	a2,000	a2,200	1,390	1,200	a1,060
15	1,250	a1,250					a1,400	a2,400	a2,200	1,390	1,200	a1,060
16	a1,300	1,320	a2,110		a1,340	a1,320	a1,400	a3,000	a2,200	1,390	a1,150	a1,060
17	a1,300	a1,250					a1,400	a3,500	a2,200	1,390	a1,150	a1,060
18	a1,300	1,250					a1,300	a3,500	2,210	a1,350	a1,150	1,060
19	1,320	1,320					a1,400	a3,000	2,210	a1,350	a1,150	a1,050
20	a1,300	4,240					a1,400	a2,500	2,020	a1,350	a1,150	a1,050
21	1,250	7,500					a1,500	a2,200	a2,000	a1,350	a1,150	a1,050
22	1,250	a6,000		a1,260			a1,600	a2,100	a1,900	1,350	a1,150	a1,050
23	a1,300	a4,700					a1,600	2,110	1,840	1,350	a1,150	1,050
24	a1,300	a4,000					a1,500	2,210	1,840	a1,300	1,130	a1,050
25	1,320	a3,300					1,510	a2,300	1,840	a1,300	a1,100	a1,040
26	a1,400	3,540					1,590	a2,100	a1,800	a1,300	a1,100	a1,040
27	a1,400	3,390					1,590	a2,100	a1,800	a1,300	a1,100	1,120
28	a1,400	2,950					1,590	a2,200	1,710	a1,300	a1,100	1,130
29	1,460	a3,500			-		1,590	a2,300	1,670	a1,300	a1,100	1,130
30	a1,450	a6,000			-		1,550	2,430	1,670	a1,300	a1,100	1,020
31	a1,450	-			-		-	2,550	-	a1,300	a1,100	-
Total	40,810	73,560	65,410	40,980	37,520	40,920	44,770	67,390	64,250	43,950	36,760	32,370
Mean	1,320	2,450	2,110	1,320	1,340	1,320	1,490	2,170	2,140	1,420	1,190	1,080
Cfsm	3.83	7.10	6.12	3.83	3.88	3.83	4.32	6.29	6.20	4.12	3.45	3.13
In.	4.42	7.92	7.06	4.42	4.04	4.42	4.82	7.25	6.92	4.75	3.98	3.49
Ac-ft	81,200	146,000	130,000	81,200	74,400	81,200	88,700	133,000	127,000	87,300	73,200	64,300

Calendar year 1921: Max 7,500 Min 1,180 Mean 2,090 Cfsm 6.06 In. 82.10 Ac-ft 1,510,000
Water year 1921-22: Max 7,500 Min 1,020 Mean 1,610 Cfsm 4.67 In. 63.49 Ac-ft 1,170,000

a No gage-height record; discharge estimated on basis of weather records and records for North Santiam River at Mehama.

Discharge, in cubic feet per second, water year October 1922 to September 1923

Day	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,020	990	976				a1,900	1,750	1,880	1,550	1,350	1,240
2	a1,020	990	a975				a1,850	1,750	1,800	1,510	1,350	1,240
3	1,060	a990	a975				a1,850	1,930	1,750	1,470	1,350	1,240
4	a1,050	a980	976				a1,800	1,930	1,800	1,430	1,350	1,200
5	a1,100	976	a1,000				a1,800	2,020	1,840	1,430	1,350	1,200
6	a1,100	976	a1,050				a1,800	2,210	1,930	1,470	1,350	1,200
7	a1,050	976	a1,050				a1,900	2,210	1,930	1,550	1,350	1,200
8	a1,020	a976	a1,000				1,930	3,240	1,930	1,470	1,350	1,200
9	1,000	a976	976				1,930	2,310	1,840	1,430	1,350	1,200
10	a1,000	a976	976				1,880	2,260	1,840	1,430	1,350	1,200
11	a1,000	976	976				1,840	2,160	1,800	1,430	1,350	a1,170
12	a1,000	a975	962				1,880	2,110	1,750	1,430	1,350	a1,170
13	a1,000	a975	962				1,880	2,060	1,750	1,470	1,310	1,170
14	1,000	a975					1,880	1,980	1,710	1,430	1,310	a1,160
15	a1,000	a975		a2,680	a1,330	a1,640	1,930	2,060	1,670	1,430	1,310	1,160
16	990	a975					1,930	2,160	1,670	1,430	1,270	1,140
17	a990	a1,050					1,930	2,110	1,670	1,390	1,270	a1,140
18	a990	a1,050					1,930	2,110	1,670	1,390	1,270	1,130
19	a990	1,030					1,930	2,020	1,630	1,390	1,270	a1,130
20	a990	1,050					1,930	1,930	1,630	1,390	1,270	a1,130
21	a990	1,030					1,930	1,880	1,630	1,390	1,270	1,130
22	990	1,030	a2,000				1,930	1,880	1,590	1,390	1,270	a1,130
23	a980	1,020					1,880	1,840	1,590	1,350	1,270	1,130
24	a980	a1,000					1,840	1,840	1,590	1,350	1,270	1,130
25	976	a1,000					1,800	1,840	1,590	1,350	1,270	a1,130
26	a976	990					1,750	1,880	1,550	1,350	1,240	a1,140
27	976	a990					1,750	1,840	1,550	1,350	1,240	1,140
28	990	a990					1,750	1,800	1,550	1,350	1,240	a1,140
29	a990	990			-		1,750	1,930	1,550	1,350	1,240	a1,140
30	a990	976			-		1,750	1,930	1,550	1,350	1,240	1,140
31	1,060	-			-		-	1,930	-	1,350	1,240	-
Total	31,268	29,853	48,854	83,080	37,240	50,840	55,830	62,900	51,230	43,850	40,270	34,970
Mean	1,010	995	1,580	2,680	1,330	1,640	1,860	2,030	1,710	1,410	1,300	1,170
Cfsm	2.93	2.88	4.58	7.77	3.86	4.75	5.39	5.88	4.96	4.09	3.77	3.39
In.	3.38	3.21	5.28	8.96	4.02	5.48	6.01	6.78	5.53	4.72	4.35	3.78
Ac-ft	62,100	59,200	97,200	165,000	73,900	101,000	111,000	125,000	102,000	86,700	79,900	69,600

Calendar year 1922: Max 3,500 Min 975 Mean 1,420 Cfsm 4.12 In. 55.96 Ac-ft 1,030,000
Water year 1922-23: Max 3,240 Min 975 Mean 1,560 Cfsm 4.52 In. 61.50 Ac-ft 1,130,000

a No gage-height record; discharge estimated on basis of records for North Santiam River at Mehama.

McKenzie River at McKenzie Bridge, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1923 to September 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,160	a1,100	a2,100	2,680	2,950	1,670	1,350	1,350	a1,200	1,120	1,050	990
2	a1,160	a1,100	a1,900	2,260	2,950	1,670	1,350	1,350	a1,200	1,130	1,050	990
3	1,160	a1,160	a1,800	2,260	2,680	1,630	1,430	1,350	a1,200	1,130	1,050	990
4	a1,160	a1,160	a1,700	2,110	3,540	1,630	1,430	1,350	a1,200	1,130	1,050	990
5	a1,200	a1,100	a1,700	1,840	3,240	1,590	1,430	1,350	a1,170	1,120	1,050	990
6	1,190	a1,100	a1,800	1,750	3,240	1,590	1,350	1,350	1,170	1,120	1,030	990
7	1,160	a1,100	a1,900	1,670	2,950	1,590	1,350	1,350	1,180	1,120	1,030	990
8	a1,160	a1,100	2,110	1,670	2,550	1,590	1,350	a1,400	a1,170	1,120	1,030	990
9	1,160	a1,100	1,750	1,590	2,310	1,590	1,350	a1,400	1,160	1,100	1,030	990
10	a1,180	a1,100	1,670	1,590	2,310	1,550	1,430	1,430	1,160	1,100	1,020	990
11	a1,180	1,100	1,670	1,590	2,110	1,550	1,430	a1,400	1,160	1,090	1,020	990
12	a1,190	a1,100	1,590	1,590	2,110	1,510	1,430	a1,350	1,160	1,090	1,000	990
13	1,190	a1,100	1,590	1,590	2,020	1,510	1,430	1,350	1,160	1,070	990	990
14	a1,190	a1,100	1,590	1,590	1,930	1,430	1,430	a1,350	1,160	1,070	990	990
15	1,190	a1,100	1,590	1,590	1,930	1,430	1,430	1,350	1,160	1,070	990	990
16	a1,300	1,100	1,590	1,590	1,930	1,430	1,430	a1,350	1,140	1,060	990	990
17	a1,300	a1,100	1,590	1,550	1,930	1,430	1,390	a1,300	a1,150	1,060	990	969
18	a1,300	a1,100	1,630	1,550	1,930	1,430	1,390	a1,300	1,160	1,060	1,000	983
19	a1,200	a1,100	1,630	1,550	1,840	1,350	1,390	1,270	1,200	1,070	1,020	955
20	1,160	a1,130	1,630	1,510	1,670	1,350	1,390	1,270	1,190	1,070	1,000	955
21	1,190	1,160	1,590	1,470	1,670	1,350	1,430	1,270	a1,170	1,060	997	934
22	1,200	a1,200	1,590	1,470	1,670	1,350	1,430	a1,270	1,130	1,060	990	934
23	a1,200	a1,300	1,590	1,430	1,670	1,270	1,430	a1,270	a1,120	1,060	990	955
24	a1,160	a1,500	1,630	1,430	1,670	1,270	1,430	1,270	a1,120	1,060	990	976
25	a1,150	a1,500	1,670	1,430	1,670	1,350	1,430	1,270	a1,120	1,060	990	1,020
26	a1,150	a1,400	1,630	1,430	1,670	1,350	1,430	a1,270	a1,120	1,060	990	1,000
27	a1,150	1,240	1,590	1,430	1,670	1,350	1,430	a1,200	a1,120	1,060	990	955
28	a1,150	a1,500	2,950	1,510	1,670	1,350	1,390	a1,200	a1,120	1,050	990	934
29	a1,150	1,930	2,810	1,510	1,670	1,350	1,390	1,200	1,120	1,050	990	934
30	1,130	a2,200	2,810	2,310	-	1,350	1,350	1,200	1,120	1,050	990	962
31	a1,130	-	2,680	2,950	-	1,310	-	a1,200	-	1,050	990	-
Total	36,650	37,080	57,070	53,490	63,150	45,170	42,100	40,590	34,710	33,520	31,277	29,306
Mean	1,180	1,240	1,840	1,730	2,180	1,460	1,400	1,310	1,160	1,080	1,010	977
Cfsm	3.42	3.59	5.33	5.01	6.32	4.23	4.06	3.80	3.36	3.13	2.93	2.83
In.	3.94	4.00	6.14	5.78	6.82	4.88	4.53	4.38	3.75	3.61	3.38	3.16
Ac-ft	72,600	73,800	113,000	106,000	125,000	89,800	83,300	80,600	69,000	66,400	62,100	58,100

Calendar year 1923: Max 3,240 Min 1,100 Mean 1,620 Cfsm 4.70 In. 63.71 Ac-ft 1,170,000
Water year 1923-24: Max 3,540 Min 934 Mean 1,380 Cfsm 4.00 In. 54.37 Ac-ft 1,000,000

a No gage-height record; discharge estimated on basis of weather records and records for Middle Fork Willamette River at Eula.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1913		1916		1920-Con.		1920-Con.	
Nov. 1	1,300	Jan. 1	1,750	Jan. 14	1,400	Dec. 30	7,750
2	1,300	2	1,700	15	1,400		
3	1,300	3	1,650	16	1,400	1921	
4	1,400	4	1,600	17	1,400	Feb. 5	2,500
5	1,450	5	1,550	18	1,400	6	2,400
6	1,800	June 12	2,300	19	1,400	7	2,300
7	1,750	13	2,300	20	1,350	8	2,500
8	1,500	14	2,400	21	1,350		
9	1,500	15	2,600	22	1,350	1924	
10	1,500	22	2,600	23	1,350	Oct. 1	976
11	1,450	23	2,500	24	1,350	2	976
12	1,450	24	2,500	26	5,370	3	976
13	1,450	25	2,600	Apr. 5	1,600	4	976
14	1,400			6	1,700	5	934
15	1,400	1919		7	1,650	6	934
16	1,400	Nov. 1	1,400	8	1,650	7	934
17	1,400	2	2,100	9	1,800	8	934
18	1,400	3	3,000	10	1,800	9	934
19	1,400	4	5,000	11	1,750	10	934
20	1,400	5	3,500	12	1,750	11	927
21	1,450	6	2,500	13	1,800	12	927
22	1,550	8	1,950	14	2,000	13	920
23	1,550	9	1,900	15	1,900	14	920
24	1,550	10	1,800	16	2,000	15	920
25	1,600	20	2,000	17	1,900	16	920
26	1,650	21	1,800	18	1,800	17	920
27	1,650	22	1,700	19	1,750	18	920
28	1,800	Dec. 5	1,700	20	1,750	19	920
29	2,000	6	1,700	23	1,750	20	920
30	2,000	7	1,700	24	1,750	21	920
		8	2,000	25	1,700	22	920
1914		9	1,800	26	1,700	23	940
Jan. 1	1,600	10	2,200	Nov. 10	1,300	24	940
2	1,600	11	5,000	11	1,250	25	920
3	1,550	12	3,000	12	1,250	26	920
4	1,700	13	2,000	13	1,600	27	976
5	2,100	26	2,300	14	1,500	28	1,190
		27	2,200	15	1,500	29	1,120
1915		28	2,100	16	1,550	30	1,200
May 18	1,700	29	2,100	17	1,800	31	1,590
19	1,900	30	2,000	18	2,900	Nov. 1	2,020
20	1,750	31	2,000	19	2,700		
21	1,750	1920		Dec. 26	3,300		
Dec. 6	3,500	Jan. 13	1,450	27	3,100		
				28	3,000		

McKenzie River at McKenzie Bridge, Oreg.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1914, 1916, 1920-21, 1925

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
November 1913	2,000	1,300	1,520	4.41	4.92	90,400
January 1914	2,870	1,550	1,950	5.65	6.51	120,000
Water year 1913-14	2,920	1,080	1,590	4.61	62.48	1,150,000
May 1915	1,900	1,360	1,580	4.58	5.28	97,200
December 1915	3,500	1,650	2,230	6.46	7.45	137,000
January 1916	1,880	1,270	1,450	4.20	4.84	89,200
June	3,080	2,260	2,590	7.51	8.38	154,000
Water year 1915-16	5,260	924	2,000	5.80	79.03	1,450,000
November 1919	5,000	1,400	1,990	5.77	6.44	118,000
December	5,000	1,460	2,090	6.06	6.99	128,000
January 1920	5,370	1,350	1,890	5.48	6.32	116,000
April	1,810	1,460	1,740	5.04	5.62	103,000
Water year 1919-20	5,370	1,110	1,580	4.58	62.54	1,150,000
November 1920	3,340	1,250	1,980	5.74	6.40	118,000
December	7,750	1,720	2,490	7.22	8.32	153,000
February 1921	4,240	1,810	2,530	7.33	7.63	141,000
Water year 1920-21	7,750	1,250	2,120	6.14	83.37	1,540,000
October 1924	1,590	920	979	2.84	3.27	60,200
November	3,860	1,350	2,030	5.88	6.56	121,000
Water year 1924-25	7,420	920	1,780	5.16	69.92	1,290,000

Rating tables, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 20		May 21 to Sept. 30	
1.2	1,120	1.2	1,200
2.0	1,890	2.0	1,940
3.5	3,920	3.0	3,150

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,340	1,500	3,800	1,660	2,680	1,410	1,760	2,380	2,340	1,970	1,500	1,320
2	1,530	1,470	3,150	1,620	2,830	1,390	1,760	2,300	2,310	1,920	1,500	1,320
3	1,750	1,430	2,950	1,580	2,840	1,390	1,750	2,220	2,320	1,880	1,490	1,310
4	1,450	1,410	2,860	1,550	3,390	1,370	1,760	2,140	2,340	1,850	1,490	1,310
5	1,370	1,370	2,870	1,510	3,040	*1,340	1,910	2,200	2,390	1,830	1,480	1,310
6	1,340	1,340	*2,540	1,480	2,870	1,340	2,220	2,050	2,380	1,800	1,470	1,300
7	1,320	1,330	2,320	1,450	2,340	1,320	2,240	2,080	2,300	1,780	1,460	1,300
8	1,300	1,310	2,180	1,420	2,170	1,300	2,140	2,250	2,270	1,760	1,460	1,310
9	1,280	1,300	2,040	1,420	2,050	1,320	2,040	2,250	2,270	1,750	1,450	1,320
10	1,250	1,380	1,930	1,420	2,000	1,370	2,040	2,260	2,250	*1,740	1,440	1,290
11	1,290	1,650	1,880	1,390	2,010	1,350	2,020	2,350	2,190	1,730	1,440	1,280
12	1,390	2,340	1,860	1,380	1,940	1,340	2,010	2,400	2,120	1,710	1,430	1,270
13	1,360	2,290	1,820	1,370	1,840	1,330	2,160	2,570	2,080	1,690	1,420	1,260
14	1,500	2,140	1,750	1,370	1,780	1,300	2,200	2,600	2,080	1,670	1,410	1,260
15	1,630	1,980	1,690	1,340	1,780	1,270	2,160	2,490	2,040	1,660	1,400	1,260
16	1,540	1,850	1,670	1,330	1,780	1,250	2,100	2,490	2,020	1,650	1,400	1,250
17	1,460	1,760	1,630	*1,290	1,740	1,240	*2,140	2,620	2,010	1,640	1,400	1,240
18	1,470	1,680	1,810	1,280	1,690	1,240	2,420	2,710	2,010	1,620	*1,400	1,240
19	1,610	1,630	1,770	1,270	1,660	1,230	2,580	2,770	2,000	1,610	1,400	1,240
20	1,980	1,600	1,680	1,270	1,600	1,200	2,410	2,770	2,000	1,600	1,400	1,230
21	2,020	1,570	1,710	1,260	1,540	1,180	2,260	2,690	1,980	1,590	1,400	1,230
22	2,320	1,540	2,200	1,250	1,520	1,180	2,220	2,570	1,940	1,580	1,390	1,230
23	3,660	1,500	2,060	1,240	1,500	1,240	2,230	2,590	1,940	1,570	1,380	1,230
24	2,610	1,470	1,930	1,300	1,560	1,660	2,340	2,660	1,920	1,560	1,370	1,230
25	*2,190	1,480	1,820	1,310	1,440	1,860	2,580	2,680	1,900	1,550	1,360	1,220
26	1,980	1,550	1,760	1,320	1,440	1,970	2,700	2,620	1,860	1,540	1,350	1,220
27	1,810	1,700	1,720	1,340	1,430	1,960	2,710	2,650	1,860	1,540	1,350	1,220
28	1,740	1,920	1,720	1,340	1,440	1,990	2,790	2,710	1,900	1,530	1,340	1,220
29	1,670	2,420	1,860	1,340	1,420	1,880	2,560	2,610	2,060	1,520	1,340	1,220
30	1,610	3,120	1,800	1,530	-	1,860	2,420	2,500	2,060	1,520	1,340	1,220
31	1,560	-	1,740	1,920	-	1,850	-	2,440	-	1,510	1,330	-
Total	52,330	51,030	64,520	43,550	57,320	44,930	66,630	76,600	63,100	51,870	43,790	37,860
Mean	1,688	1,701	2,081	1,405	1,977	1,449	2,221	2,471	2,103	1,673	1,413	1,262
Cfsm	4.89	4.93	6.03	4.07	5.73	4.20	6.44	7.16	6.10	4.85	4.10	3.66
In.	5.64	5.50	6.96	4.69	6.18	4.84	7.18	8.26	6.80	5.59	4.72	4.08
Ac-ft	103,800	101,200	128,000	86,380	113,700	89,120	132,200	151,900	125,200	102,900	86,860	75,090

Calendar year 1951: Max 5,040 Min 1,220 Mean 2,010 Cfsm 5.83 In. 79.08 Ac-ft 1,455,000
Water year 1951-52: Max 3,800 Min 1,180 Mean 1,786 Cfsm 5.18 In. 70.44 Ac-ft 1,296,000

Peak discharge (base, 3,000 cfs).--Oct. 23 (6 a.m.) 4,630 cfs (4.12 ft); Dec. 1 (7 a.m.) 4,280 cfs (3.91 ft); Feb. 4 (4 p.m.) 3,500 cfs (3.43 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 23 to Apr. 12.

South Fork McKenzie River near Rainbow, Oreg.

Location.--Lat 44°08'10", long. 122°14'40", in NE¼ sec. 31, T. 16 S., R. 5 E., on right bank 0.2 mile upstream from Cougar Creek, 2 miles south of Rainbow, and 5 miles southeast of town of Blue River.

Drainage area.--211 sq mi.

Records available.--October 1947 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,236.42 ft above mean sea level (U. S. Public Roads Administration benchmark). December 1945 to September 1947, Corps of Engineers staff gage at site 40 ft upstream at datum 0.8 ft higher.

Average discharge.--5 years, 981 cfs.

Extremes.--Maximum discharge during year, 5,480 cfs Oct. 23 (gage height, 5.02 ft); minimum, 238 cfs Sept. 30 (gage height, 1.17 ft).

1947-52: Maximum discharge, 12,400 cfs Oct. 29, 1950 (gage height, 7.30 ft); minimum, about 210 cfs Oct. 1, 1947.

Maximum discharge known, 24,500 cfs Dec. 28, 1945 (gage height, 8.8 ft, from floodmarks at site and datum then in use; corresponding gage height at present site, about 9.3 ft), by slope-area method.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.1	210	3.0	1,820
1.5	390	4.0	3,400
2.0	750	5.0	5,440

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	375	520	3,400	800	3,740	786	1,410	1,410	1,130	831	315	274
2	662	485	2,390	700	3,630	710	1,420	1,240	1,090	726	310	274
3	940	464	2,330	650	3,350	710	1,380	1,140	1,090	662	305	270
4	492	450	2,300	650	3,500	694	1,410	1,020	1,140	614	315	270
5	370	426	2,280	600	2,600	*654	1,830	970	1,220	576	310	278
6	325	408	*1,560	600	1,940	646	2,380	940	1,210	534	305	278
7	300	396	1,200	550	1,580	630	2,340	1,020	1,090	499	300	278
8	286	380	1,000	550	1,470	614	1,920	1,460	1,040	471	300	305
9	282	402	900	550	1,380	670	1,650	1,410	1,040	450	295	355
10	274	527	800	600	1,270	840	1,530	1,420	990	*438	310	295
11	290	989	800	600	1,280	777	1,490	1,550	903	420	310	286
12	464	2,550	850	550	1,220	726	1,430	1,610	804	408	305	278
13	414	2,050	850	550	1,070	686	1,560	1,900	726	390	295	274
14	555	1,760	800	500	990	654	1,650	1,940	694	375	295	274
15	876	1,320	750	480	1,030	638	1,470	1,700	670	365	290	270
16	654	1,050	750	460	1,120	598	1,340	1,620	646	355	286	270
17	534	903	800	*444	1,030	598	*1,430	1,730	638	350	286	270
18	492	813	1,100	444	950	590	1,770	1,680	654	340	282	266
19	694	759	1,100	444	876	576	2,060	1,950	670	330	*282	266
20	1,430	734	950	457	795	569	1,690	1,900	670	325	290	266
21	1,340	694	900	438	750	541	1,450	1,640	686	325	290	258
22	1,520	654	2,100	432	726	534	1,400	1,460	630	325	290	258
23	4,040	598	1,700	457	718	694	1,410	1,460	654	315	290	254
24	2,200	576	1,300	576	702	2,420	1,570	1,570	662	315	286	250
25	*1,380	569	1,000	614	718	2,470	2,020	1,590	622	315	290	246
26	1,070	750	850	622	750	2,330	2,180	1,530	583	315	290	246
27	867	876	800	678	849	2,100	2,080	1,570	576	310	286	242
28	786	1,420	900	710	867	2,120	2,100	*1,670	662	305	282	242
29	710	2,180	1,200	786	840	1,820	1,700	1,570	1,020	305	278	242
30	638	3,150	1,100	1,270	-	1,680	1,500	1,370	1,000	315	278	236
31	562	-	900	2,010	-	1,630	-	1,280	-	315	274	-
Total	25,622	28,853	39,660	19,772	41,741	31,705	50,570	46,520	25,210	12,919	9,120	8,073
Mean	833	962	1,279	638	1,439	1,023	1,686	1,501	840	417	294	269
Cfsm	3.95	4.56	6.06	3.02	6.82	4.85	7.99	7.11	3.98	1.98	1.39	1.27
In.	4.55	5.09	6.99	3.48	7.36	5.59	8.91	8.20	4.44	2.28	1.61	1.42
Ac-ft	51,220	57,230	78,660	39,220	82,790	62,890	100,300	92,270	50,000	25,620	18,090	16,010

Calendar year 1951: Max 5,200 Min 222 Mean 962 Cfsm 4.56 In. 61.91 Ac-ft 696,500
Water year 1951-52: Max 4,040 Min 238 Mean 929 Cfsm 4.40 In. 59.92 Ac-ft 674,300

Peak discharge (base, 3,500 cfs).--Oct. 23 (8 a.m.) 5,480 cfs (5.02 ft); Dec. 1 (7 a.m.) 3,880 cfs (4.25 ft); Feb. 1 (10 p.m.) 4,400 cfs (4.51 ft); Feb. 3 (9 p.m.) 4,200 cfs (4.41 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 8 to Jan. 16; discharge estimated on basis of recorded range in stage, weather records, and records for stations on McKenzie River, near Vida and at McKenzie Bridge.

Mann Creek near McKenzie Bridge, Oreg.

Location.--Lat 44°17'50", long. 122°10'20", T. 15 S., R. 5 E. (unsurveyed), on right bank 600 ft upstream from confluence with Wolf Creek and 8½ miles north of town of McKenzie Bridge.

Drainage area.--5.12 sq mi.

Records available.--October 1948 to September 1952 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 2,490 ft (barometric levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 318 cfs Oct. 23 (gage height, 3.30 ft); minimum, 1.9 cfs Sept. 30.

1948-52: Maximum discharge, 585 cfs Nov. 1, 1950 (gage height, 3.97 ft), from rating curve extended above 290 cfs by logarithmic plotting; minimum, 1.0 cfs Sept. 15, 16, 18-25, 1951.

Remarks.--Records good except those below 20 cfs, which are fair. No diversion or regulation above station.

Cooperation.--Gage-height record and three discharge measurements furnished by Corps of Engineers.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	1.6	1.9	35
1.1	2.7	2.2	63
1.2	4.4	2.5	105
1.4	9.5	3.1	240
1.6	17		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	23	185	26	133	23	41	69	55	39	7.8	3.2
2	42	22	108	23	115	23	40	62	52	34	7.8	3.2
3	60	21	78	22	95	23	37	55	54	33	7.8	2.9
4	29	20	64	21	141	21	41	48	56	30	7.8	3.0
5	19	18	55	20	115	21	61	45	61	28	7.5	3.4
6	14	18	44	*18	78	20	92	42	56	26	6.6	3.2
7	12	17	37	18	*61	20	91	48	51	24	6.4	3.2
8	11	16	33	16	54	18	73	82	51	22	6.4	8.2
9	9.8	16	29	16	50	20	61	75	50	22	6.2	7.5
10	8.6	23	30	16	48	20	58	75	47	21	6.2	4.2
11	10	46	33	16	49	*20	61	85	42	20	5.7	3.9
12	26	88	33	15	47	20	61	86	38	18	5.5	3.7
13	26	68	34	14	41	20	68	95	34	18	5.3	3.4
14	38	53	31	14	37	18	73	92	36	17	5.3	3.2
15	40	42	29	14	37	18	68	85	34	16	5.1	3.0
16	33	37	28	14	37	18	63	86	33	15	5.1	2.7
17	26	33	27	13	36	18	71	99	33	15	4.6	2.6
18	28	30	30	13	33	18	103	107	34	14	4.4	2.6
19	37	30	28	12	*32	17	110	107	34	13	4.2	2.4
20	64	31	26	12	29	16	83	102	34	13	4.2	2.4
21	70	32	26	11	26	16	68	89	32	12	4.2	2.3
22	103	32	39	11	26	16	64	79	29	12	4.1	2.2
23	228	29	34	12	24	20	67	83	30	11	4.1	2.1
24	120	27	30	18	23	60	81	91	*29	11	4.1	2.1
25	75	31	27	19	23	79	110	91	27	11	4.2	2.0
26	54	48	26	20	22	78	115	85	26	10	4.1	2.0
27	45	54	29	21	23	70	110	88	27	9.2	3.9	2.0
28	39	*73	30	21	23	71	110	88	30	8.9	3.7	2.0
29	34	119	35	22	24	61	85	76	45	8.9	3.4	2.0
30	31	178	32	37	-	54	73	68	45	8.6	3.4	*1.9
31	25	-	29	70	-	49	-	61	-	8.3	3.2	-
Total	1,380.4	1,275	1,299	595	1,482	966	2,239	2,444	1,205	548.9	162.3	92.5
Mean	44.5	42.5	41.9	19.2	51.1	31.2	74.6	78.8	40.2	17.7	5.24	3.08
Cfsm	8.69	8.30	8.18	3.75	9.98	6.09	14.6	15.4	7.85	3.46	1.02	0.602
In.	10.03	9.26	9.44	4.32	10.76	7.02	16.26	17.75	8.75	3.99	1.18	0.67
Ac-ft	2,740	2,530	2,580	1,180	2,940	1,920	4,440	4,850	2,390	1,090	322	183

Calendar year 1951: Max 232 Min 1.0 Mean 38.1 Cfsm 7.44 In. 101.08 Ac-ft 27,620
Water year 1951-52: Max 228 Min 1.9 Mean 37.4 Cfsm 7.30 In. 99.43 Ac-ft 27,160

Peak discharge (base, 200 cfs).--Oct. 23 (3 a.m.) 318 cfs (3.30 ft); Dec. 1 (4 a.m.) 249 cfs (3.13 ft).

* Discharge measurement made on this day.

Wolf Creek near McKenzie Bridge, Oreg.

Location.--Lat 44°17'40", long. 122°10'10", T. 15 S., R. 5 E. (unsurveyed), on left bank 150 ft upstream from confluence with Mann Creek and 8½ miles north of town of McKenzie Bridge.

Drainage area.--2.1 sq mi, approximately.

Records available.--October 1948 to September 1952 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 2,490 ft (barometric levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 88 cfs Oct. 23 (gage height, 3.20 ft); minimum, 0.8 cfs Sept. 1-4, 22.
1948-52: Maximum discharge, 124 cfs May 1, 1949 (gage height, 3.57 ft); minimum, 0.5 cfs Sept. 22, 23, 1951.

Remarks.--Records fair. No diversion or regulation above station.

Cooperation.--Gage-height record and eight discharge measurements furnished by Corps of Engineers.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 1-8)

Oct. 1-22				Oct. 23 to Sept. 30			
1.8	2.7	2.3	18	1.7	0.2	2.4	19
1.9	5.7	2.5	26	1.8	1.6	2.7	38
2.1	12	2.7	38	1.9	4.0	3.1	76
				2.1	9.3		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	3.5	*58	10	45	9.6	18	37	15	7.3	1.6	1.0
2	14	7.6	43	9.6	50	9.3	17	32	14	6.8	1.6	.8
3	19	7.3	35	9.0	44	9.3	17	29	14	6.2	1.8	.8
4	12	7.1	30	8.5	58	8.7	18	27	14	5.5	1.8	.8
5	9.3	6.0	26	7.6	49	*8.5	21	24	14	5.2	1.8	1.0
6	7.8	5.8	20	*7.6	36	8.5	32	23	12	5.0	1.8	1.0
7	6.3	6.0	17	7.3	*28	7.9	36	*21	12	4.2	1.8	1.0
8	6.0	5.0	15	6.2	22	7.9	32	35	10	4.2	1.6	2.0
9	4.8	5.2	13	6.0	19	8.5	*26	33	10	4.0	1.4	2.5
10	4.5	8.2	12	6.0	18	9.0	21	33	10	3.8	1.4	1.8
11	4.8	14	13	5.8	17	*8.7	21	35	10	3.5	1.4	1.8
12	10	26	13	5.5	16	8.7	21	36	9.0	3.2	1.2	1.8
13	9.3	26	13	5.5	15	8.5	23	40	8.5	3.2	1.2	1.8
14	12	22	13	5.5	15	8.5	28	40	8.5	3.2	1.2	1.4
15	14	18	12	5.0	15	7.9	27	36	7.9	3.0	1.2	1.4
16	13	15	12	4.5	14	7.9	24	37	7.1	3.0	1.2	1.0
17	12	13	11	4.5	13	7.9	24	38	6.8	3.0	1.2	1.0
18	12	12	12	4.5	13	7.6	35	40	6.2	2.8	1.4	1.0
19	15	11	12	4.5	*12	7.3	40	41	5.8	2.5	1.4	1.0
20	20	11	11	4.2	11	7.1	37	39	5.8	2.5	1.4	1.0
21	24	11	11	4.0	11	7.1	29	34	5.8	2.2	1.4	1.0
22	32	10	16	4.2	10	7.1	27	30	5.2	2.0	1.4	1.0
23	73	9.9	15	4.5	10	8.7	*27	28	5.2	2.0	1.4	1.0
24	44	9.0	13	6.8	9.9	18	29	28	*5.5	2.0	1.4	1.0
25	29	9.9	12	7.1	9.9	23	43	26	5.0	2.0	1.4	1.0
26	19	13	10	7.6	9.9	30	48	24	5.0	1.6	1.4	1.0
27	16	14	10	8.5	9.9	29	51	24	4.8	1.4	1.2	1.0
28	15	*19	10	8.5	9.9	27	52	23	6.2	1.4	1.2	1.0
29	11	32	13	9.3	9.9	23	46	20	9.0	1.4	1.2	1.0
30	10	53	12	14	-	21	40	18	8.2	1.4	1.2	*1.0
31	9.3	-	11	21	-	20	-	17	-	1.6	1.0	-
Total	494.5	415.5	524	222.8	600.4	381.2	910	948	260.5	101.1	43.6	35.9
Mean	16.0	13.8	16.9	7.19	20.7	12.3	30.3	30.6	8.68	3.26	1.41	1.20
Cfsm	7.62	6.57	8.05	3.42	9.86	5.86	14.4	14.6	4.13	1.55	0.671	0.571
In.	8.76	7.36	9.28	3.95	10.63	6.75	16.12	16.79	4.61	1.79	0.77	0.64
Ac-ft	981	824	1,040	442	1,190	756	1,800	1,880	517	201	86	71

Calendar year 1951: Max 73 Min 0.5 Mean 13.6 Cfsm 6.48 In. 87.64 Ac-ft 9,810
Water year 1951-52: Max 73 Min 0.8 Mean 13.5 Cfsm 6.43 In. 87.45 Ac-ft 9,790

Peak discharge (base, 75 cfs).--Oct. 23 (6 a.m.) 88 cfs (3.20 ft).
* Discharge measurement made on this day.

Blue River above Quentin Creek, Oreg.

Location.--Lat 44°16'00", long. 122°12'00", in T. 15 S., R. 5 E. (unsurveyed), on left bank about 1½ miles upstream from Quentin Creek, 7 miles north of town of McKenzie Bridge, and 11 miles northeast of town of Blue River.

Drainage area.--11.5 sq mi.

Records available.--October 1947 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,960 ft (barometric levels by U. S. Forest Service). Prior to Nov. 20, 1947, staff gage at site 15 ft upstream at same datum.

Average discharge.--5 years, 78.1 cfs.

Extremes.--Maximum discharge during year, 560 cfs Oct. 23 (gage height, 2.92 ft); minimum, 3.1 cfs Sept. 26-30 (gage height, 0.65 ft).
1947-52: Maximum discharge, 1,410 cfs Feb. 24, 1950 (gage height, 3.87 ft), from rating curve extended above 530 cfs by logarithmic plotting; minimum, 2.1 cfs Sept. 19-25, 1951 (gage height, 0.62 ft).

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

Cooperation.--Gage-height record and one discharge measurement furnished by Corps of Engineers.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-22		Oct. 23 to Sept. 30			
0.8	11	0.6	1.6	1.2	51
1.0	29	.7	5.2	1.5	100
1.2	55	.8	11	2.0	215
1.5	112	1.0	26	2.7	460
1.8	184				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	37	400	62	299	47	108	140	87	62	11	4.7
2	74	34	255	54	283	44	106	122	84	51	10	4.3
3	106	32	195	48	243	44	106	108	84	47	11	4.3
4	49	29	190	45	340	43	110	98	87	41	11	4.3
5	31	26	176	40	267	40	149	91	91	38	9.6	4.7
6	23	24	122	38	188	38	208	*87	87	35	9.6	4.7
7	18	24	93	35	142	36	210	96	79	32	9.2	4.7
8	16	22	77	34	122	35	168	159	76	28	9.2	12
9	13	22	68	35	110	38	140	147	76	27	9.2	12
10	12	36	63	34	104	47	133	144	71	25	9.2	6.8
11	14	83	68	30	102	45	133	159	66	24	8.6	5.7
12	41	180	68	28	96	*43	133	161	57	23	8.6	5.7
13	39	156	66	27	89	41	147	180	50	21	8.0	5.2
14	62	129	63	26	80	38	154	168	50	20	8.0	4.7
15	70	98	58	25	80	36	142	149	48	20	7.4	4.7
16	58	80	57	24	82	35	133	156	44	19	7.4	4.3
17	45	69	52	23	77	35	144	178	44	18	6.8	3.9
18	49	60	82	23	71	34	195	188	44	17	6.8	*3.9
19	70	56	76	22	66	34	212	185	44	17	6.2	3.9
20	121	54	64	22	58	33	173	173	44	16	6.2	3.9
21	133	56	66	21	52	30	142	159	41	16	6.2	3.9
22	176	50	116	21	50	30	133	135	37	15	5.7	3.9
23	452	45	96	22	48	43	135	138	38	14	5.7	3.5
24	249	43	79	38	44	161	156	147	38	14	5.7	3.5
25	154	48	69	41	43	200	202	147	*36	14	5.7	3.5
26	106	79	63	43	43	192	215	138	35	14	5.7	3.1
27	84	*91	63	47	45	183	210	140	35	14	5.7	3.1
28	69	129	68	47	48	178	212	142	45	12	5.7	3.1
29	58	235	93	50	48	147	166	120	71	12	5.2	3.1
30	48	368	82	89	-	129	147	104	71	12	5.2	3.1
31	43	-	71	173	-	127	-	96	-	11	4.7	-
Total	2,523	2,395	3,159	1,267	3,320	2,206	4,722	4,355	1,760	729	234.2	142.2
Mean	81.4	79.8	102	40.9	114	71.2	157	140	58.7	23.5	7.55	4.74
Cfsm	7.08	6.94	8.87	3.56	9.91	6.19	13.7	12.2	5.10	2.04	0.657	0.412
In.	8.16	7.75	10.22	4.10	10.74	7.13	15.27	14.08	5.69	2.36	0.76	0.46
Ac-ft	5,000	4,750	6,270	2,510	6,590	4,380	9,370	8,640	3,490	1,450	465	282

Calendar year 1951: Max 452 Min 2.1 Mean 73.0 Cfsm 6.35 In. 86.21 Ac-ft 52,870
Water year 1951-52: Max 452 Min 3.1 Mean 73.3 Cfsm 6.37 In. 86.77 Ac-ft 53,200

Peak discharge (base, 400 cfs).--Oct. 23 (4:30 a.m.) 560 cfs (2.92 ft); Dec. 1 (4:30 a.m.) 505 cfs (2.80 ft).
* Discharge measurement made on this day.

Lookout Creek near Blue River, Oreg.

Location.--Lat 44°12'40", long. 122°15'20", in T. 15 or 16 S., R. 5 E. (unsurveyed), on left bank 0.4 mile upstream from mouth and 6 miles northeast of Blue River Post Office.

Drainage area.--24.1 sq mi.

Records available.--August 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is about 1,370 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,320 cfs Oct. 23 (gage height, 5.36 ft), from rating curve extended above 450 cfs by logarithmic plotting; minimum, 12 cfs Sept. 27-30.

1949-52: Maximum discharge, 1,980 cfs Feb. 24, 1950 (gage height, 5.98 ft), from rating curve extended above 450 cfs by logarithmic plotting; minimum, 8.2 cfs Sept. 20, 21, 24, 25, 1951.

Remarks.--Records good. No diversion or regulation above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 24 to Apr. 28)

1.8	8.2	3.3	192
2.0	19	3.9	396
2.4	44	4.8	890
2.8	90		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	72	635	133	694	105	267	180	93	74	21	15
2	116	68	437	116	676	100	274	161	92	65	20	16
3	175	62	461	105	721	97	267	146	93	58	20	15
4	79	60	490	97	862	97	258	131	93	54	20	15
5	50	54	485	86	610	*92	326	121	98	48	20	17
6	39	49	258	80	410	87	447	118	92	43	19	16
7	33	48	205	74	301	83	442	125	82	39	19	16
8	29	46	164	69	242	79	353	157	79	37	19	21
9	27	44	138	74	215	92	287	153	79	35	19	24
10	24	66	127	84	200	140	264	157	74	*32	19	19
11	30	206	133	76	197	125	258	173	72	32	18	18
12	61	520	133	70	185	111	251	178	65	30	18	18
13	53	405	133	65	164	100	274	200	61	29	18	17
14	130	312	123	62	164	93	284	187	61	29	18	16
15	146	218	112	56	168	86	261	166	62	27	18	16
16	111	170	116	54	180	83	236	170	56	26	18	16
17	82	142	112	*52	161	82	*251	192	56	26	18	16
18	84	123	243	51	144	83	342	197	55	24	18	15
19	129	112	210	50	133	79	362	200	54	24	*18	15
20	242	105	159	52	118	74	270	187	53	24	17	14
21	251	100	173	50	105	71	227	164	51	24	17	14
22	451	90	414	52	98	70	213	144	47	24	17	14
23	800	82	267	60	97	96	210	150	49	23	17	14
24	450	77	258	123	92	437	242	157	52	23	17	14
25	*287	77	157	131	95	456	301	153	48	23	17	14
26	197	109	140	127	100	442	308	142	46	22	17	13
27	153	133	140	133	112	396	294	144	47	22	17	13
28	129	218	161	125	116	383	294	*148	57	21	16	12
29	109	414	264	127	112	323	213	127	87	21	16	12
30	93	600	245	237	-	323	192	116	90	21	16	12
31	82	-	166	437	-	330	-	105	-	21	15	-
Total	4,700	4,782	7,259	3,108	7,472	5,215	8,468	4,849	2,044	1,001	557	466
Mean	152	159	234	100	258	168	282	156	68.1	32.3	18.0	15.5
Cfsm	6.31	6.60	9.71	4.15	10.7	6.97	11.7	6.47	2.83	1.34	0.747	0.643
In.	7.25	7.38	11.20	4.80	11.53	8.05	13.07	7.48	3.15	1.54	0.86	0.72
Ac-ft	9,320	9,480	14,400	6,160	14,820	10,340	16,800	9,620	4,050	1,990	1,100	924

Calendar year 1951: Max 904 Min 8.7 Mean 143 Cfsm 5.93 In. 80.59 Ac-ft 103,600
Water year 1951-52: Max 862 Min 12 Mean 136 Cfsm 5.64 In. 77.03 Ac-ft 99,000

Peak discharge (base, 800 cfs).--Oct. 23 (about 4 a.m.) 1,320 cfs (5.36 ft); Feb. 3 (8:30 p.m.) 939 cfs (4.87 ft).

* Discharge measurement made on this day.

Blue River near Blue River, Oreg.

Location.--Lat 44°11'00", long. 122°16'50", near line between secs. 13 and 14, T. 16 S., R. 4 E., on right bank 3 miles upstream from Quartz Creek and 3½ miles northeast of Blue River Post Office.

Drainage area.--75 sq mi, approximately.

Records available.--September 1935 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is about 1,225 ft (from profile map of McKenzie River).

Average discharge.--17 years, 380 cfs.

Extremes.--Maximum discharge during year, 4,620 cfs Oct. 23 (gage height, 5.40 ft); minimum, 17 cfs Sept. 27-30.
1935-52: Maximum discharge, 13,300 cfs Dec. 28, 1945 (gage height, 9.80 ft), from rating curve extended above 6,500 cfs; minimum, 13 cfs Sept. 27, 28, Oct. 1, 2, 1938.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	11	2.5	685
1.1	26	3.0	1,100
1.3	78	4.0	2,300
1.5	155	5.0	3,900
2.0	385		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	305	195	2,420	390	2,690	335	652	531	267	244	33	31
2	600	179	1,320	340	2,420	305	678	462	258	200	33	28
3	870	167	1,330	310	2,160	290	692	407	258	175	33	28
4	350	155	1,400	290	3,000	290	713	370	262	155	36	28
5	200	146	1,410	267	1,870	276	1,020	340	276	138	31	31
6	138	134	778	244	1,090	262	1,320	330	262	121	28	31
7	102	129	562	231	800	249	1,180	345	251	105	28	31
8	78	*121	451	218	706	240	854	568	213	102	28	45
9	70	116	370	226	652	272	699	525	213	98	28	72
10	61	213	350	280	600	440	672	513	208	92	28	58
11	70	771	375	249	614	385	685	549	200	*88	28	31
12	258	1,850	418	222	568	335	640	543	179	85	28	26
13	226	1,270	412	208	484	305	755	581	159	78	33	24
14	470	910	370	200	434	280	762	549	163	75	33	24
15	562	640	335	187	468	262	678	507	171	72	31	23
16	390	495	350	175	537	254	633	513	159	70	31	23
17	290	407	345	*163	468	258	734	568	151	67	31	22
18	272	350	792	159	412	267	1,040	581	151	58	31	22
19	468	325	720	159	380	258	991	581	146	56	*33	22
20	878	345	468	159	335	240	720	555	146	56	33	18
21	910	345	482	155	305	226	594	507	142	53	33	18
22	1,220	310	1,310	155	285	222	574	429	125	50	33	18
23	3,460	276	762	167	276	305	581	440	129	48	31	18
24	1,520	258	555	355	262	1,520	699	462	*134	48	33	18
25	815	262	456	407	276	1,510	870	451	125	45	36	18
26	549	525	396	385	305	1,280	870	418	116	45	33	18
27	434	620	407	429	360	1,140	815	418	116	43	33	17
28	355	894	490	402	390	1,110	800	424	159	40	31	17
29	295	1,710	822	429	370	838	594	365	332	40	31	17
30	254	2,300	640	878	-	785	537	325	335	38	31	17
31	222	-	490	1,580	-	846	-	300	-	38	31	-
Total	16,692	16,418	21,786	10,019	23,517	15,585	23,052	14,457	5,786	2,623	974	774
Mean	538	547	703	323	811	503	768	466	193	84.6	31.4	25.8
Cfsm	7.17	7.29	9.37	4.31	10.8	6.71	10.2	6.21	2.57	1.13	0.419	0.344
In.	8.28	8.14	10.80	4.97	11.66	7.73	11.43	7.17	2.87	1.30	0.48	0.38
Ac-ft	33,110	32,560	43,210	19,870	46,650	30,910	45,720	28,680	11,480	5,200	1,930	1,540

Calendar year 1951: Max 3,460 Min 19 Mean 445 Cfsm 5.93 In. 80.49 Ac-ft 322,000
Water year 1951-52: Max 3,460 Min 17 Mean 414 Cfsm 5.52 In. 75.21 Ac-ft 300,900

Peak discharge (base, 2,600 cfs).--Oct. 23 (5 a.m.) 4,620 cfs (5.40 ft); Dec. 1 (6:30 a.m.) 3,110 cfs (4.53 ft); Feb. 1 (9 a.m.) 3,200 cfs (4.59 ft); Feb. 3 (11 p.m.) 3,140 cfs (4.55 ft).
* Discharge measurement made on this day.

McKenzie River near Vida, Oreg.

Location.--Lat 44°07'30", long. 122°28'10", in NE¼ sec. 5, T. 17 S., R. 3 E., on left bank 1 mile upstream from head of Martin Rapids, 5 miles east of Vida, and at mile 44.3 (U. S. Geological Survey Plan and Profile).

Drainage area.--930 sq mi, approximately.

Records available.--June 1910 to March 1911 (gage heights only), September 1924 to September 1952. Published as "at Martin Rapids, near Vida" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 855.56 ft above mean sea level, datum of 1929. June 25, 1910, to Mar. 31, 1911, staff gage at site of Martin Rapids 3 miles downstream, at different datum. Sept. 22, 1924, to Nov. 16, 1928, staff gage at site 20 ft upstream at present datum.

Average discharge.--28 years, 3,824 cfs.

Extremes --Maximum discharge during year, 22,100 cfs Oct. 23 (gage height, 7.98 ft); minimum, 1,790 cfs Sept. 30 (gage height, 0.88 ft).
1924-52: Maximum discharge, 64,400 cfs Dec. 28, 1945 (gage height, 17.70 ft), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, 1,260 cfs Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931 (gage height, 0.36 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Cooperation.--Water-stage recorder inspected by employee of Eugene Water Board.

Revisions (water years).--W 1124: 1943.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.8	1,680	4.0	8,250
1.5	2,750	5.5	13,000
2.5	4,650	7.0	18,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,840	3,300	14,100	4,630	13,700	4,080	6,000	5,880	4,940	4,360	2,400	1,990
2	3,800	3,150	10,300	4,280	14,000	3,880	6,020	5,460	4,840	3,980	2,390	1,980
3	5,590	3,080	10,500	4,040	13,400	3,840	5,980	5,110	4,820	3,780	2,340	1,980
4	3,420	3,010	10,800	3,960	15,200	3,900	5,900	4,840	4,900	3,650	2,390	1,980
5	2,720	2,920	11,200	3,780	11,800	3,760	7,020	4,650	5,110	3,520	2,310	2,000
6	2,420	2,800	8,160	3,690	9,090	*3,650	8,310	4,500	5,110	3,370	2,280	1,990
7	2,280	2,720	*8,650	3,480	7,650	3,460	8,220	4,690	4,840	3,240	2,260	1,980
8	2,200	2,660	5,770	3,410	6,850	3,410	7,180	5,900	4,650	3,140	2,260	2,080
9	2,120	2,610	5,240	3,460	6,420	3,540	6,380	5,790	4,710	3,100	2,240	2,290
10	2,100	3,140	4,880	4,020	6,020	4,480	6,020	5,680	4,610	3,100	2,280	2,060
11	2,140	4,730	4,940	3,760	6,080	4,200	5,950	6,020	4,420	3,050	2,230	1,990
12	3,050	10,800	5,070	3,480	5,840	3,900	5,770	6,080	4,180	2,960	2,220	1,960
13	2,820	9,090	5,050	3,370	5,320	3,710	6,100	6,720	3,920	2,890	2,180	1,960
14	3,350	7,780	4,690	3,320	5,050	3,560	6,380	6,920	3,880	2,820	2,180	1,950
15	4,710	6,200	4,380	3,190	5,300	3,420	5,950	6,470	3,880	2,800	2,160	1,930
16	3,670	5,220	4,440	3,060	5,700	3,330	5,610	6,220	3,690	2,750	2,140	1,930
17	3,170	4,630	4,360	2,920	5,220	3,330	5,720	6,550	3,650	2,680	2,140	1,930
18	2,960	4,280	6,240	*2,900	4,860	3,390	*6,950	6,800	3,690	2,650	*2,140	1,920
19	3,880	4,080	5,980	2,900	4,610	3,300	7,620	7,180	3,690	2,610	2,120	1,900
20	6,250	3,980	5,030	2,970	4,320	3,240	6,580	7,000	3,690	2,580	2,110	1,900
21	6,300	3,880	4,950	2,900	4,060	3,150	5,840	a6,500	3,730	2,560	2,110	1,880
22	7,000	3,690	10,600	2,900	3,920	3,120	5,630	a6,000	3,560	2,530	2,100	1,860
23	16,400	3,540	7,600	3,050	4,040	3,700	5,650	a6,000	3,560	2,530	2,080	1,850
24	9,930	3,420	6,120	3,840	3,980	10,300	6,100	a6,500	3,630	2,500	2,100	1,830
25	6,580	3,390	5,260	4,060	4,080	9,840	7,120	a6,500	3,520	2,480	2,110	1,830
26	*5,320	4,080	4,860	3,920	4,220	8,940	7,500	a6,000	3,440	2,470	2,100	1,820
27	4,650	4,520	4,840	4,100	4,440	8,100	7,380	a6,500	3,390	2,450	2,080	1,830
28	4,260	6,680	5,280	4,040	4,500	7,900	7,580	a6,500	3,690	2,420	2,060	1,830
29	3,980	9,710	6,660	4,200	4,340	7,000	6,620	*6,120	5,220	2,420	2,080	1,820
30	3,710	13,100	6,120	6,140	-	6,680	6,080	5,570	5,090	2,420	2,040	1,810
31	3,480	-	5,180	9,240	-	6,880	-	5,370	-	2,400	2,000	-
Total	137,100	146,190	205,290	119,010	194,010	148,990	195,160	186,020	126,050	90,210	67,630	58,060
Mean	4,423	4,873	6,622	3,839	6,690	4,806	6,505	6,001	4,202	2,910	2,182	1,935
Cfsm	4.76	5.24	7.12	4.13	7.19	5.17	6.99	6.45	4.52	3.13	2.35	2.08
In.	5.48	5.85	8.21	4.76	7.76	5.96	7.80	7.44	5.04	3.61	2.70	2.32
Ac-ft	271,900	290,000	407,200	236,100	384,800	295,500	387,100	369,000	250,000	178,900	134,100	115,200

Calendar year 1951: Max 18,000 Min 1,820 Mean 4,862 Cfsm 5.23 In. 70.97 Ac-ft 3,520,000
Water year 1951-52: Max 16,400 Min 1,810 Mean 4,573 Cfsm 4.92 In. 66.93 Ac-ft 3,320,000

Peak discharge (base, 16,000 cfs).--Oct. 23 (10 a.m.) 22,100 cfs (7.98 ft); Dec. 1 (8:30 a.m.) 16,100 cfs (6.39 ft); Feb. 3 (10 p.m.) 16,800 cfs (6.60 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of combined records for stations at McKenzie Bridge and South Fork McKenzie River near Rainbow.

Gate Creek at Vida, Oreg.

Location.--Lat 44°08'45", long. 122°34'15", in sec. 28, T. 16 S., R. 2 E., on right bank at Vida, 300 ft downstream from bridge on U. S. Highway 126 and 1,000 ft upstream from mouth.

Drainage area.--47.6 sq mi.

Records available.--June 1951 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 764.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 2,120 cfs Mar. 24 (gage height, 7.32 ft); minimum, 15 cfs Sept. 30.
1951-52: Maximum discharge, that of Mar. 24, 1952; minimum, 15 cfs Sept. 19-25, 1951, Sept. 30, 1952.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 16-22)

Oct. 1 to Dec. 21

2.0	25	4.0	445
2.3	48	5.0	840
2.6	86	6.0	1,330
3.0	167	7.0	1,930
3.5	290		

Dec. 22 to Sept. 30

1.7	14	2.5	82
1.9	22	3.0	172
2.2	46	3.5	290

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	105	980	359	1,450	288	462	190	62	162	33	22
2	262	93	700	311	1,400	255	492	158	61	123	32	21
3	463	89	943	285	1,500	255	462	136	58	104	31	21
4	138	86	1,100	270	*1,580	252	424	123	57	92	31	20
5	71	79	1,190	252	1,100	250	438	114	56	81	31	27
6	51	73	756	238	796	*248	438	106	55	74	29	23
7	42	69	*544	219	636	235	392	106	54	69	28	22
8	36	67	424	208	544	224	335	160	53	64	28	38
9	33	67	353	219	470	281	299	138	52	61	28	42
10	31	105	314	314	417	473	278	118	57	58	28	24
11	41	377	320	265	410	392	265	108	68	*56	28	22
12	200	1,000	332	233	377	323	250	103	69	54	27	21
13	123	808	311	215	320	282	252	100	58	52	27	21
14	216	688	266	206	320	260	262	106	72	50	26	20
15	272	470	240	190	398	238	238	98	85	49	26	18
16	167	350	314	*174	431	231	*222	88	63	47	26	18
17	119	281	338	164	353	228	215	84	56	45	26	18
18	117	235	691	160	308	231	224	79	53	44	*26	18
19	240	210	632	162	278	217	233	76	50	43	26	18
20	490	189	428	179	250	210	208	79	53	42	26	18
21	389	187	540	168	228	203	185	*75	54	42	25	17
22	584	160	1,470	176	226	210	172	71	49	42	24	17
23	1,400	145	808	233	288	398	162	68	54	41	24	17
24	724	136	588	438	311	1,820	160	67	55	40	25	17
25	401	136	456	438	350	1,260	166	66	52	40	26	17
26	*278	207	404	404	420	920	158	66	49	38	25	16
27	217	230	401	442	424	744	158	66	54	37	24	16
28	182	389	452	428	383	628	172	67	98	35	24	16
29	154	914	800	476	332	516	148	*66	478	34	23	16
30	136	1,140	632	833	-	544	172	64	272	34	22	16
31	117	-	448	1,130	-	588	-	64	-	33	22	-
Total	7,838	9,085	18,175	9,789	16,300	13,204	8,042	3,010	2,407	1,786	827	617
Mean	253	303	586	316	562	426	268	97.1	80.2	57.6	26.7	20.6
Cfsm	5.32	6.37	12.3	6.64	11.8	8.95	5.63	2.04	1.68	1.21	0.561	0.433
In.	6.12	7.10	14.20	7.65	12.74	10.32	6.28	2.35	1.88	1.40	0.65	0.48
Ac-ft	15,550	18,020	36,050	19,420	32,330	26,190	15,950	5,970	4,770	3,540	1,640	1,220

Calendar year 1951: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1951-52: Max 1,820 Min 16 Mean 249 Cfsm 5.23 In. 71.17 Ac-ft 180,600

Peak discharge (base, 1,800 cfs).--Oct. 23 (10 a.m.) 1,860 cfs (6.88 ft); Dec. 22 (3 a.m.) 2,010 cfs (7.14 ft); Feb. 3 (8 p.m.) 1,990 cfs (7.10 ft); Mar. 24 (6 a.m.) 2,120 cfs (7.32 ft).
* Discharge measurement made on this day.

Mohawk River near Springfield, Oreg.

Location.--Lat 44°06', long. 122°57', in sec. 17, T. 17 S., R. 2 W., on downstream side of bridge near midspan, 1½ miles (revised) upstream from mouth, and 4½ miles northeast of Springfield.

Drainage area.--180 sq mi, approximately.

Records available.--September 1935 to September 1952 (discontinued).

Gage.--Wire-weight gage read once daily during low-water periods, two or more times daily at other times. Altitude of gage is 455 ft (by barometer), revised.

Average discharge.--17 years, 545 cfs.

Extremes.--Maximum discharge observed during year, 4,430 cfs Dec. 5 (gage height, 13.67 ft); minimum observed, 12 cfs Sept. 1.
1935-52: Maximum discharge, 8,600 cfs Dec. 28, 1945 (gage height, 22.1 ft, from floodmark); minimum observed, 11 cfs Sept. 17, 1938, Sept. 22, 1951.

Remarks.--Records good except those for period of shifting control, which are fair. No diversion above station; some regulation at low flow caused by log ponds.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1939, superseding figures published in Water-Supply Paper 884, are given herewith:

May 24, 1939..... 149
May 25, 1939..... 126

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
May 1939.....	4,044	177	94	130	0.722	0.84	8,020
Water year 1938-39	152,971	4,310	19	419	2.33	31.60	303,400
Calendar year 1939	137,492	4,310	22	377	2.09	28.41	272,700

Rating table, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.8	10	3.0	430
1.0	23	5.0	1,020
1.3	52	7.0	1,690
1.6	92	10.0	2,840
2.0	167	14.0	4,580

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	192	205	3,160	1,210	3,130	831	942	318	102	349	29	12
2	321	190	2,300	1,040	3,390	768	984	270	*95	240	40	22
3	450	185	2,700	939	3,320	774	909	225	97	200	36	*20
4	134	188	3,430	1,060	4,120	756	813	215	88	165	35	15
5	88	163	4,270	954	3,170	762	813	195	82	148	30	27
6	68	152	3,080	915	2,610	732	876	200	88	138	29	32
7	59	*144	2,260	840	1,920	675	840	210	90	113	33	25
8	51	138	1,730	810	1,580	624	711	235	80	98	31	29
9	45	134	1,420	738	1,250	636	606	215	74	92	29	69
10	42	318	1,160	1,400	1,130	*864	556	198	82	90	32	48
11	53	550	1,040	1,330	1,020	846	522	208	122	84	28	34
12	146	1,860	945	1,060	954	801	475	195	113	80	26	34
13	106	1,770	858	864	819	714	480	235	88	80	29	32
14	148	1,750	786	936	771	660	514	255	128	73	29	30
15	252	1,240	675	816	777	621	455	235	161	*69	30	28
16	172	954	687	708	966	559	396	190	112	62	32	26
17	110	756	*669	609	903	556	377	195	103	58	33	27
18	146	633	1,180	594	810	562	391	208	95	60	34	25
19	198	576	1,500	520	780	570	492	220	89	66	29	36
20	759	506	1,150	684	720	585	402	225	88	57	87	21
21	511	500	1,110	807	666	609	*343	208	106	57	29	20
22	630	478	2,800	759	642	603	307	159	90	52	26	20
23	2,400	430	2,300	1,190	1,050	591	290	138	90	53	25	20
24	1,970	396	1,540	1,640	1,060	2,890	290	142	94	59	28	19
25	1,000	441	1,220	1,720	1,040	2,900	338	154	88	42	26	30
26	594	768	1,210	1,400	1,160	2,250	374	142	89	46	30	21
27	461	850	1,180	1,420	1,100	1,780	352	132	148	45	25	21
28	366	1,130	1,150	1,270	1,000	1,540	419	142	167	42	25	15
29	310	1,690	1,590	1,220	906	1,260	329	134	750	39	25	17
30	270	3,500	2,110	*1,500	-	1,150	315	108	594	44	20	16
31	232	-	1,560	2,280	-	1,100	-	106	-	29	18	-
Total	12,284	22,595	52,770	35,233	42,764	30,569	15,911	6,012	4,193	2,829	898	791
Mean	396	753	1,702	1,072	1,475	986	530	194	140	91.3	29.0	26.4
Cfsm	2.20	4.18	9.46	5.96	8.19	5.48	2.94	1.08	0.778	0.507	0.161	0.147
In.	2.54	4.67	10.90	6.87	8.84	6.32	3.29	1.24	0.87	0.58	0.19	0.16
Ac-ft	24,360	44,820	104,700	65,920	84,820	60,630	31,560	11,920	8,320	5,610	1,780	1,570

Calendar year 1951: Max 4,620 Min 11 Mean 693 Cfsm 3.85 In. 52.22 Ac-ft 501,400
Water year 1951-52: Max 4,270 Min 12 Mean 614 Cfsm 3.41 In. 46.47 Ac-ft 446,000

Peak discharge (base, 2,700 cfs).--Oct. 23 (5 p.m.) 3,430 cfs (11.39 ft); Nov. 30 (8 a.m.) 3,750 cfs (12.13 ft); Dec. 5 (8 a.m.) 4,430 cfs (13.67 ft); Dec. 22 (12 m.) 2,880 cfs (10.10 ft); Feb. 4 (7:30 a.m.) 4,300 cfs (13.37 ft); Mar. 24 (5:30 p.m.) 3,530 cfs (11.63 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 25 to Dec. 21, Apr. 1 to June 28.

McKenzie River near Coburg, Oreg.

Location.--Lat 44°06'45", long. 123°02'45", in NE¼NE¼ sec. 9, T. 17 S., R. 3 W., on left bank at downstream side of Armitage Bridge, 2 miles southeast of Coburg and 3 miles upstream from mouth.

Drainage area.--1,310 sq mi, approximately.

Records available.--October 1944 to September 1952. Gage-height records collected at same site December 1943 to April 1944 are contained in files of U S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 395.96 ft above mean sea level, datum of 1929. Prior to Nov. 24, 1944, wire-weight gage at same site and datum.

Average discharge.--8 years, 6,057 cfs.

Extremes.--Maximum discharge during year, 29,600 cfs Feb. 4 (gage height, 10.7 ft); minimum, 1,630 cfs Aug. 10 (gage height, 0.64 ft).
1944-52: Maximum discharge, 88,200 cfs Dec. 29, 1945 (gage height, 17.36 ft), from rating curve extended above 36,000 cfs; minimum daily, 1,310 cfs Oct. 29, 1944.

Remarks.--Records excellent except those for period of no recorder record, which are good. Slight diurnal fluctuation caused by log ponds and powerplants upstream. Water supply for city of Eugene is diverted about 10 miles upstream; small diversions above station for irrigation.

Cooperation.--Telemark-gage readings obtained once daily during fall and winter months by employees of U. S. Weather Bureau.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
1.5	2,220	7.0	14,800	0.8	1,840	6.0	11,900
2.5	3,470	10.0	26,400	2.0	3,570	11.0	30,900
4.5	7,450			4.0	6,850		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,400	3,960	22,100	8,510	20,200	6,650	9,820	7,750	5,800	5,780	2,670	2,160
2	4,000	3,680	18,200	7,380	23,900	6,080	9,410	7,090	*5,500	5,110	2,600	2,110
3	7,690	3,660	17,400	6,800	21,900	5,730	9,590	6,450	5,460	4,710	2,580	*2,130
4	5,000	3,540	*20,200	6,750	27,800	6,080	8,980	5,920	5,460	4,500	2,560	2,100
5	3,220	3,390	*23,500	6,330	23,500	5,900	9,750	5,730	5,630	4,340	2,600	2,200
6	2,750	3,230	17,600	6,120	17,300	5,730	11,100	5,540	5,780	4,160	2,490	2,140
7	2,530	*3,120	13,400	5,850	13,900	5,560	11,500	5,540	5,540	3,940	2,450	2,160
8	2,380	3,060	11,200	5,530	12,200	5,240	10,300	8,570	5,260	3,800	2,450	2,180
9	2,290	3,000	9,710	5,260	11,100	5,240	9,140	7,210	5,290	3,680	2,450	2,580
10	2,220	3,500	8,510	7,470	9,980	*6,650	8,490	6,770	5,290	3,600	2,450	2,420
11	2,240	4,430	8,070	7,190	a9,800	6,770	8,300	7,070	5,240	3,520	2,510	2,280
12	3,000	14,300	7,940	6,380	9,720	6,190	8,010	7,270	5,050	3,400	2,440	2,200
13	3,340	14,200	7,760	5,740	8,470	5,820	8,130	7,850	4,720	3,320	2,420	2,200
14	3,150	13,000	7,050	5,620	7,990	5,530	8,710	8,330	4,620	*3,280	2,410	2,180
15	6,180	10,500	6,380	5,200	7,750	5,270	8,210	7,990	4,770	3,200	2,370	2,110
16	4,800	8,490	6,310	4,780	9,460	5,060	7,680	7,400	4,520	3,120	2,310	2,110
17	3,820	7,230	*6,400	4,450	8,710	4,950	7,500	7,610	4,380	3,060	2,340	2,100
18	3,340	6,440	6,350	4,240	7,990	5,140	8,450	7,870	4,350	3,040	2,340	2,060
19	4,550	5,950	11,200	4,190	7,520	5,080	9,720	8,280	4,350	3,020	2,320	2,070
20	6,930	5,640	8,620	4,660	6,850	5,140	8,880	8,400	4,360	2,960	2,300	2,060
21	8,600	5,600	7,740	4,680	6,260	5,030	*7,820	7,940	4,440	2,980	2,280	2,050
22	8,730	5,180	16,900	4,680	5,900	4,920	7,270	7,220	4,300	2,900	2,240	2,020
23	19,100	4,800	14,500	5,680	a6,500	5,110	7,090	6,850	4,220	2,860	2,230	2,020
24	17,600	4,510	11,500	7,210	a6,500	16,500	7,430	6,940	4,360	2,850	2,280	2,010
25	11,000	4,510	9,570	8,330	6,850	18,500	8,450	7,250	4,230	2,790	2,350	1,980
26	8,120	5,430	8,760	7,430	7,290	16,200	9,340	7,140	4,110	2,730	2,280	1,980
27	6,660	6,490	8,360	7,640	7,290	13,800	9,140	6,920	4,100	2,720	2,240	2,000
28	5,810	9,160	8,760	7,310	7,290	12,900	9,540	7,290	4,520	2,680	2,200	1,980
29	5,200	12,500	11,400	7,330	6,850	11,500	8,610	7,110	6,740	2,660	2,180	1,970
30	5,000	21,900	12,800	*9,000	-	10,600	7,750	6,490	7,750	2,640	2,130	1,960
31	4,410	-	10,200	14,700	-	11,000	-	6,190	-	2,620	2,170	-
Total	177,060	204,400	360,390	202,440	326,770	239,870	264,110	219,980	150,140	105,950	73,620	63,520
Mean	5,712	6,813	11,630	6,530	11,270	7,738	8,804	7,096	5,005	3,418	2,375	2,117
Cfsm	4.36	5.20	8.88	4.98	8.60	5.91	6.72	5.42	3.82	2.61	1.81	1.62
In.	.03	5.80	10.23	5.75	9.28	6.81	7.50	6.25	4.26	3.01	2.09	1.80
Ac-ft	351,200	405,400	714,800	401,500	648,100	475,800	523,900	436,300	297,800	210,100	146,000	126,000

Calendar year 1951: Max 27,000 Min 1,810 Mean 6,703 Cfsm 5.12 In. 69.44 Ac-ft 4,852,000
Water year 1951-52: Max 27,800 Min 1,960 Mean 6,525 Cfsm 4.98 In. 67.81 Ac-ft 4,737,000

Peak discharge (base, 24,000 cfs).--Oct. 23 (7 p.m.) 28,400 cfs (10.45 ft); Nov. 30 (9 a.m.) 24,100 cfs (9.46 ft); Dec. 5 (9 a.m.) 25,600 cfs (9.80 ft); Feb. 4 (7 a.m.) 29,600 cfs (10.7 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station near Vida.

Note.--Discharge for Feb. 2-10, 12-22, Feb. 25 to Mar. 9, determined from once-daily readings of telemark gage.

Willamette River at Harrisburg, Oreg.

Location.--Lat 44°16'05", long. 123°10'25", in SW¼NE¼ (revised) sec. 16, T. 15 S., R. 4 W., on right bank 10 ft downstream from State highway bridge at Harrisburg and at mile 162.9.

Drainage area.--3,420 sq mi, approximately.

Records available.--October 1944 to September 1952. Gage-height records (October to April each year) collected at same site since December 1927 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 290.07 ft above mean sea level, datum of 1929. Oct. 1 to Nov. 14, 1944, wire-weight gage on bridge 10 ft upstream at same datum.

Average discharge.--8 years, 12,750 cfs.

Extremes.--Maximum discharge during year, 71,800 cfs Feb. 4 (gage height, 13.75 ft); minimum, 3,080 cfs Sept. 30.

1944-52: Maximum discharge, 210,000 cfs Dec. 29, 1945 (gage height, 19.69 ft), from rating curve extended above 89,000 cfs; minimum, 1,990 cfs Oct. 30, 1944.

Flood of 1861 reached a stage of about 21 ft (present site and datum), from information by local residents. Flood of Jan. 1, 1943, reached a stage of 19.1 ft (present datum), from U. S. Weather Bureau records.

Remarks.--Records good except those for periods of shifting control, which are fair. Many small diversions above station for irrigation; about 15 cfs diverted from McKenzie River for city of Eugene water supply. Flow regulated at times by Cottage Grove Reservoir (see p. 131) and Dorena Reservoir (see p. 134).

Rating tables, water year 1951-52, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30	
3.5	4,200	2.5	3,000
4.0	5,900	3.0	4,450
6.0	14,700	5.0	12,000
9.0	29,000	8.0	28,000
13.0	54,500	13.0	70,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,680	7,380	50,400	21,000	48,500	14,500	22,500	14,800	11,000	15,200	3,910	3,400
2	5,780	6,580	47,600	17,800	63,600	12,600	20,200	13,500	10,100	11,700	3,850	3,340
3	9,840	6,340	38,400	16,000	59,400	11,600	20,200	12,000	*9,800	10,000	3,850	*3,340
4	9,210	6,100	46,200	15,300	67,500	11,600	18,000	10,900	9,880	9,000	3,970	3,310
5	6,460	5,900	*51,800	15,000	56,500	11,500	18,400	10,200	10,200	8,240	3,910	3,610
6	5,290	5,620	42,800	14,600	42,600	10,900	22,500	9,760	10,600	7,640	3,910	3,640
7	4,770	*5,400	30,400	14,100	32,700	10,400	24,800	9,600	10,600	7,100	3,790	3,580
8	4,440	5,260	23,200	13,100	26,700	9,800	22,700	11,200	9,760	6,680	3,700	3,580
9	4,260	5,180	19,100	12,200	23,400	9,640	18,400	14,200	9,480	6,360	3,730	3,970
10	4,260	5,540	16,900	16,900	21,100	11,800	17,100	13,200	9,600	6,150	3,790	4,240
11	4,200	8,360	15,600	20,500	19,800	*14,400	16,600	13,200	9,400	5,980	4,000	3,790
12	4,680	26,300	15,600	17,200	19,900	13,400	16,200	13,600	8,960	5,730	3,850	3,670
13	6,340	37,100	16,000	15,100	18,000	12,100	15,700	14,000	8,120	5,560	3,820	3,580
14	5,740	33,400	15,200	14,200	16,000	11,300	17,200	15,800	7,840	5,340	3,820	3,520
15	8,130	28,600	13,700	13,300	15,800	10,300	17,400	15,200	9,000	5,200	3,790	3,460
16	8,580	20,400	12,600	11,800	18,400	9,560	15,800	13,800	8,200	* 5,030	3,730	3,430
17	7,280	16,200	12,800	10,600	20,000	9,160	14,700	13,600	7,480	4,820	3,790	3,370
18	6,340	13,500	*14,000	9,660	18,100	9,480	15,500	14,400	7,400	4,690	3,820	3,310
19	6,900	11,600	25,400	9,260	16,600	9,600	18,600	15,300	7,480	4,600	3,730	3,340
20	8,980	10,800	21,000	10,300	15,200	9,480	18,400	15,800	7,560	4,510	3,700	3,280
21	15,000	10,500	16,500	11,600	13,300	9,680	16,200	15,300	7,480	4,480	3,670	3,250
22	14,700	9,700	31,000	11,300	12,200	9,320	*14,100	13,800	7,360	4,360	3,640	3,200
23	26,600	9,030	40,700	13,100	13,800	9,440	13,400	12,800	7,060	4,300	3,640	3,200
24	40,700	8,440	33,000	16,000	15,000	33,200	13,500	12,800	7,640	4,210	3,610	3,180
25	27,600	8,310	27,700	20,200	15,200	60,200	15,000	13,400	8,000	4,180	3,610	3,150
26	21,200	8,620	21,600	18,800	16,200	48,400	17,200	13,500	7,520	4,060	3,640	3,150
27	17,900	10,700	21,100	18,400	16,400	38,300	17,400	13,000	7,130	4,000	3,580	3,120
28	15,500	17,000	23,800	18,300	17,200	33,300	17,900	13,500	7,760	3,970	3,490	3,120
29	10,700	26,000	28,000	18,200	16,400	30,300	17,600	13,800	12,500	3,940	3,430	3,120
30	9,570	48,400	35,300	*19,700	-	26,900	15,400	12,600	22,500	3,910	3,340	3,100
31	8,310	-	22,100	31,800	-	24,800	-	11,600	-	3,880	3,430	-
Total	333,940	422,260	829,500	485,320	755,500	546,960	528,600	410,160	277,410	184,820	115,540	102,350
Mean	10,770	14,080	26,760	15,660	26,050	17,640	17,620	13,230	9,247	5,962	3,727	3,412
Cfsm	3.15	4.12	7.82	4.58	7.62	5.16	5.15	3.87	2.70	1.74	1.09	0.998
In.	3.63	4.59	9.02	5 28	8.22	5.95	5.75	4.46	3.02	2.01	1.26	1.11
Ac-ft	662,400	837,500	‡1,645	962,600	‡1,499	‡1,085	‡1,048	813,500	550,200	366,600	229,200	203,000

Calendar year 1951: Max 62,700 Min 2,650 Mean 13,720 Cfsm 4.01 In. 54.46 Ac-ft 9,935,000
Water year 1951-52: Max 67,500 Min 3,100 Mean 13,640 Cfsm 3.99 In. 54.30 Ac-ft 9,902,000

Peak discharge (base, 59,000 cfs).--Feb. 4 (1 p.m.) 71,800 cfs (13.75 ft); Mar. 25 (5 a.m.) 64,800 cfs (13.08 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

Note.--Shifting-control method used Oct. 1 to Feb. 18, Mar. 3 to Apr. 29.

Long Tom River near Noti, Oreg.

Location.--Lat 44°03'00", long. 123°25'30", in sec. 33, T. 17 S., R. 6 W., on left bank an eighth of a mile upstream from railroad bridge, 1 mile downstream from Noti Creek, and 1½ miles southeast of Noti.

Drainage area.--88 sq mi, approximately.

Records available.--October 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 388.76 ft above mean sea level (levels by U. S. Weather Bureau). Prior to Nov. 6, 1940, staff gage at same site and datum.

Average discharge.--17 years, 237 cfs.

Extremes.--Maximum discharge during year, 2,550 cfs Dec. 5 (gage height, 15.25 ft); minimum, 11 cfs Sept. 4 (gage height, 0.52 ft).
1935-52: Maximum discharge, 4,930 cfs Feb. 18, 1949 (gage height, 18.62 ft); minimum observed, 7 cfs Sept. 25-27, 1939.

Remarks.--Records good. No diversion above station. Slight diurnal fluctuation caused by log pond above Noti.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	14	7.0	692
.8	23	10.0	1,150
1.0	36	13.0	1,780
2.0	123	16.0	2,850
4.0	324		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	*58	1,250	623	1,170	455	252	196	73	121	21	15
2	124	55	948	498	1,360	418	250	172	66	78	21	14
3	83	54	964	449	1,400	400	264	164	64	65	20	14
4	52	54	*1,720	509	2,010	417	240	154	64	58	20	14
5	38	52	2,340	515	1,400	399	226	141	*59	52	19	16
6	29	51	1,750	532	979	382	216	144	60	46	20	17
7	25	50	1,040	515	773	360	198	169	60	42	19	18
8	24	49	721	466	645	333	196	158	55	40	20	20
9	23	49	561	504	558	315	190	148	55	38	20	27
10	20	80	452	1,100	497	344	193	145	56	36	20	28
11	28	282	393	1,160	467	346	179	141	59	37	19	24
12	96	900	334	894	447	332	182	136	64	36	19	22
13	58	640	312	705	405	*327	194	132	63	35	18	20
14	43	591	291	683	376	320	228	136	76	35	18	18
15	55	412	265	754	366	324	188	134	93	33	20	18
16	50	288	257	706	398	300	176	128	70	*30	21	16
17	53	231	240	574	389	271	*166	124	60	28	21	16
18	35	193	443	501	378	320	164	115	59	27	20	15
19	47	173	646	471	405	369	162	111	64	27	20	14
20	61	175	509	549	426	416	155	107	62	28	18	14
21	82	169	454	619	395	429	148	106	75	27	18	14
22	159	161	661	630	393	410	151	104	71	26	18	14
23	505	144	608	1,020	514	382	159	100	72	25	17	14
24	394	134	490	1,100	622	386	163	94	84	27	18	14
25	229	133	417	*1,080	620	395	160	88	75	25	20	14
26	147	621	399	877	733	364	158	82	62	25	20	14
27	105	688	606	765	692	330	152	76	65	24	20	14
28	91	751	706	672	571	299	153	74	90	23	*18	14
29	78	804	883	604	497	292	154	74	272	22	16	14
30	69	1,040	1,190	639	-	283	191	73	218	22	16	14
31	64	-	853	902	-	274	-	74	-	22	15	-
Total	2,909	9,082	22,703	21,616	19,886	10,992	5,608	3,800	2,366	1,160	590	500
Mean	93.8	303	732	697	686	355	187	123	78.9	37.4	19.0	16.7
Cfsm	1.07	3.44	8.32	7.92	7.80	4.03	2.12	1.40	0.897	0.425	0.216	0.190
In.	1.23	3.84	9.59	9.14	8.40	4.65	2.37	1.61	1.00	0.49	0.25	0.21
Ac-ft	5,770	18,010	45,030	42,870	39,440	21,800	11,120	7,540	4,690	2,300	1,170	992

Calendar year 1951: Max 2,790 Min 12 Mean 306 Cfsm 3.48 In. 47.14 Ac-ft 221,300
Water year 1951-52: Max 2,340 Min 14 Mean 277 Cfsm 3.15 In. 42.78 Ac-ft 200,700

Peak discharge (base, 1,300 cfs).--Dec. 1 (2 p.m.) 1,300 cfs (10.83 ft); Dec. 5 (3:30 p.m.) 2,550 cfs (15.25 ft); Feb. 4 (10 to 11 a.m.) 2,160 cfs (14.27 ft).
* Discharge measurement made on this day.

Coyote Creek near Crow, Oreg.

Location.--Lat 44°01'19", long. 123°15'17", in NE¼ sec. 11, T. 18 S., R. 5 W., on right bank just upstream from backwater of Fern Ridge Reservoir, 1 mile downstream from Spencer Creek and 5 miles northeast of Crow.

Drainage area.--94 sq mi, approximately.

Records available.--June 1940 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 374.0 ft above mean sea level (Corps of Engineers benchmark). Prior to Aug. 31, 1940, staff gages near same site at different datums.

Average discharge.--12 years, 181 cfs.

Extremes.--Maximum discharge during year, 3,160 cfs Dec. 5 (gage height, 11.73 ft); minimum, 0.1 cfs Sept. 30.
1940-52: Maximum discharge, 9,260 cfs Dec. 28, 1945 (gage height, 14.13 ft), from rating curve extended above 4,700 cfs; no flow at times in August and September 1940.

Remarks.--Records excellent except those between and 10 and 20 cfs, which are good, and those below 10 cfs, which are poor.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.2	0.1	0.7	11	9.0	778
.3	.4	1.0	30	9.5	910
.4	1.2	2.0	81	10.0	1,180
.5	2.6	4.0	215	11.0	2,150
.6	5.4	7.0	485	12.0	3,600

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	*20	1,610	641	602	256	114	46	9.1	68	2.3	0.6
2	9.6	19	1,070	449	774	214	120	32	9.1	36	2.3	.8
3	20	18	1,280	352	950	205	118	26	9.1	23	2.1	.8
4	16	18	2,480	559	1,370	224	98	23	8.6	19	1.8	.6
5	9.1	17	2,940	495	946	221	90	21	*9.2	18	1.5	.5
6	6.5	16	1,800	503	636	189	83	21	9.6	15	1.8	.5
7	4.5	15	*1,060	465	463	168	74	21	9.6	13	1.7	.8
8	3.2	15	694	417	349	150	67	23	9.1	15	1.4	2.3
9	2.8	13	486	401	276	146	63	21	8.6	11	.8	2.1
10	2.6	25	346	1,320	230	188	59	19	8.6	8.6	1.0	2.3
11	2.8	124	264	1,450	213	181	55	19	8.6	8.6	.9	2.6
12	4.9	460	221	886	232	168	52	18	9.1	7.5	.9	2.6
13	11	552	189	627	213	*157	64	18	10	6.5	1.3	2.3
14	9.6	554	160	673	193	149	95	18	15	5.9	1.3	1.7
15	8.6	385	137	686	221	142	68	18	25	5.4	1.7	1.8
16	11	245	127	568	421	125	57	18	19	*4.5	1.2	1.4
17	11	177	119	425	451	117	*54	17	15	3.8	1.4	1.3
18	9.6	141	280	335	415	179	49	16	13	3.4	1.5	1.2
19	13	121	486	287	476	201	44	15	11	4.2	1.4	1.2
20	22	127	441	460	524	239	41	15	9.6	4.5	.8	1.2
21	19	132	359	620	453	247	38	15	9.6	3.8	.7	1.0
22	22	116	475	684	400	225	36	15	9.6	3.6	.7	.8
23	109	97	507	922	518	201	34	14	10	3.8	.8	.5
24	306	87	512	1,020	488	241	32	13	11	3.6	.9	.5
25	198	79	420	926	453	228	31	13	12	3.6	.8	.4
26	97	178	438	*725	470	197	30	12	13	3.8	.4	.4
27	66	289	697	537	394	174	28	11	13	3.2	.3	.3
28	47	560	744	418	326	158	28	11	16	2.8	*.3	.2
29	38	826	1,070	344	280	142	28	11	131	2.8	.4	.3
30	29	1,800	1,680	358	-	136	38	10	160	2.6	.4	.2
31	23	-	955	441	-	139	-	9.6	-	2.4	.5	-
Total	1,132.4	7,226	24,047	18,994	13,737	5,707	1,788	559.6	611.1	316.9	35.1	33.2
Mean	36.5	241	776	613	474	184	59.6	18.1	20.4	10.2	1.13	1.11
Cfsm	0.388	2.56	8.26	6.52	5.04	1.96	0.634	0.193	0.217	0.109	0.012	0.012
In.	0.45	2.86	9.51	7.51	5.43	2.26	0.71	0.22	0.24	0.13	0.01	0.01
Ac-ft	2,250	14,330	47,700	37,670	27,250	11,320	3,550	1,110	1,210	629	70	66

Calendar year 1951: Max 3,250 Min 0.1 Mean 241 Cfsm 2.56 In. 34.81 Ac-ft 174,500
Water year 1951-52: Max 2,940 Min 0.2 Mean 203 Cfsm 2.16 In. 29.34 Ac-ft 147,200

Peak discharge (base, 1,600 cfs).--Nov. 30 (7 to 8 p.m.) 1,930 cfs (10.81 ft); Dec. 5 (10 to 11 a.m.) 3,160 cfs (11.73 ft); Dec. 30 (5 a.m.) 2,030 cfs (10.90 ft); Jan. 10 (11 to 12 p.m.) 1,880 cfs (10.76 ft).

* Discharge measurement made on this day.

Fern Ridge Reservoir near Elmira, Oreg.

Location.--Lat 44°07'20", long. 123°17'55", 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.

Drainage area.--252 sq mi.

Records available.--October 1941 to September 1952.

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

Extremes.--Maximum contents during year, 89,630 acre-ft July 2-4 (elevation, 372.21 ft); minimum, 6,410 acre-ft Nov. 15 (elevation, 352.60 ft).
1941-52: Maximum contents, 105,400 acre-ft Jan. 1, 1943 (elevation, 373.94 ft); minimum since first filling in 1942, 189 acre-ft Nov. 11, 1950 (elevation, 344.00 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1941 by Corps of Engineers; storage began Nov. 13, 1941. Capacity, 101,200 acre-ft between elevations 340 ft (sill of outlet gate) and 373.5 ft (normal maximum operating pool level); dead storage, 23 acre-ft below elevation 340 ft. 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.

Cooperation.--Water-stage recorder inspected by employees of Corps of Engineers.

Contents, in acre-feet, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,970	7,380	12,170	7,280	9,580	38,370	71,180	84,060	86,050	89,540	85,130	65,600
2	7,250	7,220	15,860	7,030	10,280	39,730	72,060	84,300	86,050	89,540	85,050	64,650
3	7,180	7,030	18,020	7,560	12,890	41,470	72,870	84,390	85,970	89,540	84,880	63,570
4	7,090	7,070	25,420	7,840	15,030	42,640	73,540	84,550	85,800	89,540	84,550	62,770
5	7,090	7,180	35,050	7,280	14,790	43,330	74,210	84,720	85,800	89,370	84,300	61,920
6	7,090	7,210	43,030	7,350	14,230	43,930	74,510	84,970	85,720	89,020	84,220	61,070
7	7,090	7,240	45,710	6,980	15,180	44,990	75,190	85,220	85,630	89,110	83,970	60,230
8	7,070	7,270	42,640	7,060	16,480	46,130	75,720	85,220	85,470	89,110	83,810	59,650
9	7,040	7,420	38,280	7,380	17,590	47,400	76,180	85,470	85,380	89,020	83,400	58,760
10	7,010	7,750	33,420	8,750	18,450	48,700	76,560	85,550	85,470	88,770	82,740	57,880
11	7,300	8,110	28,270	9,430	19,050	50,080	77,020	85,630	85,720	88,680	82,250	57,080
12	7,360	8,340	22,870	7,900	19,900	51,200	77,330	85,720	85,630	88,510	81,770	56,040
13	7,380	8,130	17,230	7,280	20,760	52,350	78,270	85,970	85,630	88,340	81,120	55,250
14	7,330	6,960	11,240	7,280	21,890	53,280	78,740	85,890	86,310	88,250	80,640	54,410
15	7,130	6,720	7,380	6,680	23,680	54,170	79,210	85,970	86,310	88,000	80,160	53,280
16	7,060	6,640	6,970	6,790	25,880	55,130	79,600	86,140	86,310	87,490	79,370	52,010
17	7,070	6,640	7,220	7,130	26,420	56,220	80,080	86,310	86,390	87,320	78,500	50,750
18	7,280	6,900	7,620	7,020	27,160	57,570	80,400	86,220	86,310	87,150	77,570	49,520
19	7,350	7,030	8,030	6,880	28,200	58,820	80,640	86,310	86,220	87,060	76,720	48,420
20	7,480	7,270	7,750	7,280	28,970	59,910	80,960	86,310	86,310	86,810	75,870	47,080
21	7,870	7,190	7,240	7,510	29,690	60,680	81,200	86,310	86,310	86,810	74,810	45,660
22	8,130	7,010	7,190	7,830	31,200	61,720	81,440	86,470	86,310	86,730	74,060	44,180
23	8,160	6,840	7,390	7,720	31,810	62,910	81,850	86,470	86,390	86,470	73,310	42,590
24	8,130	6,770	7,270	7,900	32,670	63,840	81,930	86,470	86,310	86,310	72,570	40,950
25	7,420	7,150	7,070	7,640	33,940	64,650	82,170	86,390	86,310	86,220	71,540	39,410
26	7,100	7,950	8,180	6,620	34,840	65,600	82,330	86,390	86,220	86,050	70,600	37,880
27	7,220	8,060	8,470	6,750	35,640	66,570	82,660	86,390	86,310	85,970	69,810	36,360
28	7,480	7,640	8,130	7,280	36,480	67,470	82,740	86,140	87,230	85,800	69,100	34,880
29	7,700	8,550	8,270	7,470	37,310	68,530	82,990	86,140	88,680	85,720	68,030	33,420
30	7,730	10,320	8,870	8,060	-	69,520	83,730	86,140	89,370	85,550	67,400	31,930
31	7,560	-	8,000	8,820	-	70,240	-	86,050	-	85,300	66,430	-

Monthly elevation and contents, water year October 1951 to September 1952

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	353.01	7,000	-
Oct. 31	353.38	7,560	+560
Nov. 30	355.00	10,320	+2,760
Dec. 31	353.66	8,000	-2,320
Calendar year 1951	-	-	+1,120
Jan. 31	354.16	8,820	+820
Feb. 29	364.03	37,310	+28,490
Mar. 31	369.76	70,240	+32,930
Apr. 30	371.51	83,730	+13,490
May 31	371.79	86,050	+2,320
June 30	372.18	89,370	+3,320
July 31	371.70	85,300	-4,070
Aug. 31	369.22	66,430	-18,870
Sept.30	362.72	31,930	-34,500
Water year 1951-52	-	-	+24,930

† Elevation at 12 p.m.

Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.

Location (revised).--Lat 44°07'25", long. 123°17'50", in SE¼ sec. 4, T. 17 S., R. 5 W., on left bank in canalized river channel 1,000 ft downstream from Fern Ridge Dam, which impounds runoff of Long Tom River and Coyote Creek, and 2⅔ miles south of Smithfield.

Drainage area.--252 sq mi.

Records available.--August 1939 to September 1952. Prior to October 1943, published as "at Smithfield."

Gage.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1939, staff gage and Sept. 21, 1939, to Sept. 13, 1943, water-stage recorder, at site 2½ miles downstream at datum 11.09 ft lower.

Average discharge.--13 years, 528 cfs.

Extremes.--Maximum discharge during year, 3,800 cfs Feb. 5; minimum daily, 34 cfs July 25, 29, 30.

1939-52: Maximum discharge, 11,500 cfs Jan. 1, 1943 (gage height, 15.12 ft, site and datum then in use); minimum daily, 2 cfs Aug. 7, 1941.

Remarks.--Records good. A few small diversions above station. Records include diversion for irrigation and stockwater to Coyote Creek channel through 24-inch concrete pipe 600 ft long. The diversion is several hundred feet upstream and point of return to Long Tom River about 2½ miles downstream. Record for Coyote Creek is based on daily staff-gage readings and occasional measurements. Fern Ridge Dam, 1,000 ft above station, was completed in 1941, and has regulated flow since Nov. 13, 1941 (see preceding page). Monthly discharge not adjusted for storage or release from Fern Ridge Dam as evaporation from reservoir at times exceeds natural flow and diversions.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water years 1940, 1941, and 1948, superseding those published in Water-Supply Papers 904, 934, and 1124, are given herein. These revised daily figures do not include diversion to Coyote Creek.

Date	Discharge	Date	Discharge	Date	Discharge
1940		1940-Con.		1941	
Sept.17	29	Sept.23	22	Apr. 10	449
18	31	24	15		
19	31	25	18	1948	
20	31	26	22	Mar. 28	519
21	28	27	26	29	324
22	24	28	28	30	324

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
September 1940.....	708	45	13	23.6	0.090	0.10	1,400
Water year 1939-40.....	155,932	4,220	7	426	1.62	22.05	309,300
Calendar year 1940.....	181,832	4,220	13	497	1.89	25.71	360,600
April 1941.....	8,487	828	121	283	1.08	1.20	16,830
Water year 1940-41.....	114,389	2,910	2	313	1.19	16.17	226,900
Calendar year 1941.....	132,531	2,910	2	363	-	-	262,900

Month	Observed				Diversion to Coyote Creek Channel (acre-feet)	Adjusted for diversion			
	Maximum	Minimum	Mean	Runoff in acre-feet		Mean	Per square mile	Runoff in inches	Runoff in acre-feet
March 1948.....	2,810	40	609	37,460	216	613	-	-	37,680
Water year 1947-48..	3,330	8	672	487,900	3,240	676	2.68	36.54	491,100
Calendar year 1948..	3,330	8	691	501,700	3,414	696	2.76	37.58	505,100

Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	*157	2,780	2,310	2,100	368	39	46	39	40	35	411
2	150	154	1,240	1,500	2,490	126	36	46	39	40	35	413
3	208	154	2,810	1,080	2,520	46	36	46	41	37	37	408
4	143	60	1,980	1,460	2,770	305	36	43	41	37	37	408
5	67	54	1,540	1,660	3,380	427	36	43	*39	39	40	407
6	43	58	955	1,520	2,600	297	36	43	39	40	39	418
7	42	57	1,680	1,500	1,320	158	36	44	38	40	41	429
8	40	57	*3,380	1,260	741	40	36	44	40	40	38	429
9	40	57	3,580	1,320	592	40	35	44	38	40	163	428
10	38	150	3,530	2,260	586	39	41	44	38	42	214	428
11	42	524	3,480	3,000	592	38	41	44	38	42	212	422
12	38	1,240	3,390	3,260	538	36	41	44	38	44	212	422
13	107	1,770	3,340	2,310	409	40	41	44	38	45	212	422
14	147	1,960	3,320	2,020	245	*40	41	44	39	36	211	416
15	146	1,280	2,460	2,160	106	39	41	44	39	42	212	557
16	97	787	657	1,700	219	42	41	42	38	*42	348	618
17	59	534	456	1,280	837	40	*41	42	36	44	395	625
18	59	324	961	1,180	795	40	41	41	36	44	396	588
19	59	339	1,340	1,140	831	127	41	41	36	40	392	576
20	59	334	1,420	1,340	925	274	41	41	36	40	392	663
21	59	394	1,460	1,760	817	423	41	41	38	40	398	677
22	231	414	1,440	2,080	505	254	41	42	39	40	393	722
23	717	359	1,380	2,490	1,040	181	41	42	39	40	409	749
24	901	294	1,400	2,650	925	345	46	43	39	38	410	749
25	878	273	1,220	*2,640	845	365	46	43	39	34	410	749
26	476	494	1,020	2,580	1,100	211	46	42	39	35	410	736
27	175	1,370	1,770	1,740	1,020	105	46	42	41	37	410	736
28	58	2,000	2,270	1,240	736	39	46	42	43	35	409	729
29	55	2,120	2,790	1,180	629	37	46	42	46	34	409	722
30	89	2,620	3,460	1,190	-	39	46	42	41	34	414	736
31	157	-	3,260	1,490	-	35	-	40	-.	35	410	-
Total	5,625	20,388	63,769	56,300	32,213	4,596	1,222	1,331	1,170	1,216	8,143	16,793
Mean	181	680	2,122	1,816	1,111	148	40.7	42.9	39.0	39.2	263	560
Ac-ft	11,160	40,440	130,500	111,700	63,890	9,120	2,420	2,640	2,320	2,410	16,150	33,310

Observed

Calendar year 1951: Max 3,580 Min 22 Mean 681 Ac-ft 492,900
Water year 1951-52: Max 3,580 Min 34 Mean 587 Ac-ft 426,100

Adjusted

Calendar year 1951: Mean 682 Cfsm 2.71 In. 36.75 Ac-ft 494,000
Water year 1951-52: Mean 621 Cfsm 2.46 In. 33.56 Ac-ft 451,000

* Discharge measurement made on this day.

Long Tom River at Monroe, Oreg.

Location.--Lat 44°18'50", long. 123°17'45", in NE¼ sec. 33, T. 14 S., R. 5 W., on left bank in canalized river channel at Monroe, 800 ft upstream from a concrete drop structure and just downstream from Shafer Creek.

Drainage area.--391 sq mi.

Records available.--November 1920 to September 1952 (1925-27 incomplete).

Gage.--Water-stage recorder and concrete control. Datum of gage is 270.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 24, 1944, staff gages at various sites ranging from present site to 1½ miles downstream, at different datums.

Average discharge.--29 years (1921-25, 1927-52), 748 cfs.

Extremes.--Maximum discharge during year, 5,860 cfs Dec. 3 (gage height, 8.40 ft); minimum, 30 cfs Aug. 8 (gage height, 4.17 ft).

1920-52: Maximum discharge, 19,300 cfs Jan. 2, 1943 (gage height, 17.14 ft, site and 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 cfs Sept. 29, Oct. 1, 1939.

Revisions.--The maximum discharges for the water years 1927 and 1928 have been revised to 14,400 cfs Feb. 21 or 22, 1927 (gage height, 14.2 ft) and 6,540 cfs Apr. 2, 1928 (gage height, 11.45 ft), superseding figures published in Water-Supply Papers 654 and 674, respectively.

Remarks.--Records excellent except those below 100 cfs, which are good. A few small diversions above station. Flow regulated by Fern Ridge Reservoir beginning Nov. 13, 1941 (see p. 161). 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.

Revisions.--W 654: Drainage area. Revised figures of discharge, in cubic feet per second, for periods in the water years 1923 and 1927, superseding figures published in Water-Supply Papers 574 and 654, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1923		1927-Con.		1927-Con.	
June 17	95	Jan. 22	5,120	Feb. 7	3,250
		23	3,330	8	2,930
1927		24	2,640	9	2,640
Jan. 2	2,290	25	2,780	10	2,270
3	5,120	26	2,930	18	2,190
4	6,950	27	2,930	19	2,850
5	6,950	28	2,930	20	4,820
6	6,160	29	4,970	21	11,900
7	4,970	30	4,970	22	13,300
8	4,540	31	4,820	23	7,170
9	3,600	Feb. 1	5,120	24	5,120
10	2,510	2	7,400	25	4,820
11	2,140	3	7,400	26	3,700
19	2,240	4	6,160	27	3,330
20	5,120	5	5,120	28	2,570
21	5,450	6	3,810		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
June 1923	124	73	92.6	0.235	0.26	5,510
Water year 1922-23	15,800	12	791	2.01	27.25	573,000
Calendar year 1923	15,800	23	688	1.75	23.69	498,000
January 1927	6,950	1,100	3,430	8.71	10.04	211,000
February	13,300	1,060	4,190	10.6	11.04	233,000

Long Tom River at Monroe, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

4.1	14	5.1	550
4.2	38	5.5	920
4.3	72	6.0	1,500
4.5	155	7.0	2,990
4.8	320	8.5	6,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	327	170	4,490	3,300	3,560	793	175	114	64	102	38	383
2	146	170	2,760	2,180	4,060	526	190	106	64	83	38	383
3	200	165	4,070	1,630	4,740	369	190	102	64	76	41	383
4	170	142	4,900	2,180	4,870	559	170	99	64	64	41	383
5	99	41	5,030	2,420	4,450	793	160	95	60	64	41	383
6	47	64	3,080	2,300	3,860	676	150	95	60	57	*44	390
7	41	72	2,000	2,160	2,350	478	137	99	57	54	36	406
8	41	68	3,980	1,870	1,350	266	132	95	57	54	33	414
9	41	72	4,160	*1,820	1,050	249	*124	91	57	54	74	414
10	36	106	4,060	3,650	1,000	290	124	91	57	54	200	414
11	44	596	3,940	4,220	980	266	124	91	60	54	195	406
12	51	1,870	3,840	4,340	950	244	124	87	60	54	195	406
13	60	2,260	3,750	3,380	802	232	137	*83	60	54	195	398
14	150	2,720	3,710	2,990	622	227	155	83	76	51	195	398
15	150	1,940	3,290	3,300	494	227	137	83	80	47	195	478
16	142	1,100	1,080	2,610	685	210	128	80	68	51	272	604
17	*72	793	694	1,870	1,130	210	119	80	64	47	376	604
18	68	510	1,420	1,680	1,290	302	114	80	60	51	376	586
19	64	462	2,140	1,640	*1,440	414	110	80	60	47	376	568
20	72	486	2,000	2,000	1,560	518	106	80	60	47	376	622
21	80	526	1,930	2,710	1,330	703	106	76	68	47	369	676
22	148	526	2,370	3,290	1,080	559	102	76	68	44	369	703
23	805	470	1,970	4,200	1,080	390	102	72	64	44	376	*757
24	1,110	398	1,870	4,040	1,710	494	102	72	64	47	383	748
25	1,000	341	1,670	3,710	1,350	694	102	72	60	44	383	748
26	710	1,240	1,540	3,430	1,940	478	102	72	60	44	383	739
27	272	1,770	2,890	2,660	1,700	334	99	68	*60	44	383	730
28	119	3,110	3,560	1,860	1,270	216	99	68	76	44	383	730
29	91	3,300	4,180	1,680	1,120	195	99	64	165	41	383	730
30	83	*4,140	5,180	1,840	-	195	114	68	146	38	390	721
31	155	-	4,510	2,450	-	190	-	68	-	38	390	-
Total	6,594	29,628	96,064	83,410	53,823	12,297	3,833	2,590	2,083	1,640	7,529	16,305
Mean	213	988	3,099	2,691	1,856	397	128	83.5	69.4	52.9	243	544
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	13,080	58,770	190,500	165,400	106,800	24,390	7,600	5,140	4,130	3,250	14,930	32,340

Calendar year 1951: Max 5,600 Min 33 Mean 1,050 Cfsm 2.68 In. 3.64 Ac-ft 760,000
Water year 1951-52: Max 5,180 Min 33 Mean 863 Cfsm 2.21 In. 3.08 Ac-ft 626,300

* Discharge measurement made on this day.

Rock Creek near Philomath, Oreg.

Location.--Lat 44°30'05", long. 123°26'20", in NE¼ sec. 29, T. 12 S., R. 6 W., on right bank 250 ft upstream from State Highway 34, a quarter of a mile upstream from mouth, and 4½ miles southwest of Philomath.

Drainage area.--14.6 sq mi.

Records available.--October 1945 to September 1952 (discontinued).

Gage.--Water-stage recorder and concrete control. Datum of gage is 354.16 ft above mean sea level, datum of 1929 (Oregon State Highway Department benchmark).

Average discharge.--7 years, 59.4 cfs.

Extremes.--Maximum discharge during year, 1,350 cfs Dec. 4 (gage height, 5.20 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum, 0.2 cfs Sept. 1, 2, 3.

1945-52: Maximum discharge, 1,650 cfs Jan. 6, 1948 (gage height, 5.78 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum, 0.2 cfs Aug. 24, 1946, several days in summers of 1949 and 1950, and Sept. 1, 2, 3, 1952.

Remarks.--Records good. Flow regulated by small storage reservoir operated by city of Corvallis; most of low-water flow diverted to Corvallis water-supply system.

Revisions (water years).--W 1124: 1946(m).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.4	0.2	1.5	18
.5	.4	1.7	34
.6	.7	1.9	59
.7	1.2	2.3	139
.9	3.0	3.0	350
1.1	5.9	4.0	750
1.3	10		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	16	322	112	428	82	49	22	6.8	11	1.0	0.3
2	48	15	197	95	392	71	49	19	6.6	9.1	.9	.3
3	41	15	329	91	464	93	48	17	6.4	7.2	.8	.3
4	13	14	620	103	374	106	45	17	6.3	6.4	.7	.4
5	7.7	13	572	123	259	91	46	16	6.3	5.9	.7	.4
6	5.6	12	312	116	200	84	48	16	5.9	5.6	*.7	.4
7	4.5	12	208	103	167	71	43	15	5.6	4.9	.7	.4
8	4.0	11	159	91	142	64	37	14	5.4	4.3	.6	1.0
9	3.4	21	125	163	123	66	*34	14	5.3	3.9	.6	.8
10	3.8	93	106	208	112	101	32	13	5.6	3.6	.6	.5
11	14	244	91	*172	108	91	31	14	5.9	3.5	.6	.4
12	13	208	84	137	91	82	30	13	5.6	3.4	.5	.4
13	9.5	159	74	116	82	74	37	*13	5.7	3.3	.5	.4
14	18	137	69	106	80	78	33	15	12	2.9	.5	.3
15	16	97	62	101	76	78	30	13	7.3	2.6	.5	.3
16	*14	73	64	91	71	71	28	12	5.4	2.4	.5	.3
17	11	61	66	80	66	69	27	11	4.9	2.3	.5	.3
18	15	51	290	74	62	73	27	11	4.5	2.3	.4	.3
19	23	43	200	78	62	71	28	11	4.2	2.2	.4	.3
20	30	41	139	116	59	71	24	11	4.8	2.0	.5	.3
21	51	36	156	99	*53	68	23	11	5.4	1.9	.5	.6
22	86	32	241	99	53	61	22	10	4.6	1.8	.5	1.3
23	259	30	172	144	69	61	21	9.5	4.6	1.8	.4	*1.3
24	186	28	132	200	82	99	20	9.3	4.8	1.8	.5	1.3
25	89	51	108	180	99	93	19	9.1	4.0	1.5	.7	.4
26	55	139	101	167	137	86	19	8.8	3.9	2.5	.5	.4
27	38	*125	118	169	128	74	19	8.2	*4.8	1.3	.4	.6
28	30	152	132	159	110	69	19	7.5	14	1.2	.4	.6
29	26	183	226	154	93	59	18	7.5	33	1.1	.3	.7
30	21	211	188	267	-	56	25	7.3	15	1.1	.3	.7
31	18	-	137	413	-	56	-	7.2	-	1.0	.3	-
Total	1,191.5	2,323	5,800	4,327	4,242	2,369	931	382.4	214.6	105.8	17.0	16.0
Mean	38.4	77.4	187	140	146	76.4	31.0	12.3	7.15	3.41	0.55	0.53
Ac-ft	2,360	4,610	11,500	8,580	8,410	4,700	1,850	758	426	210	34	32

Calendar year 1951: Max 714 Min 0.5 Mean 69.2 Ac-ft 50,110
Water year 1951-52: Max 620 Min 0.3 Mean 59.9 Ac-ft 43,470

55.86

Peak discharge (base, 500 cfs).--Dec. 4 (7:30 p.m.) 1,350 cfs (5.20 ft); Feb. 3 (2 p.m.) 532 cfs (3.48 ft).

* Discharge measurement made on this day.

Marys River near Philomath, Oreg.

Location.--Lat 44°31'35", long. 123°20'00", in SW¼ sec. 18, T. 12 S., R. 5 W., near mid-span on upstream side of bridge, 2 miles southeast of Philomath and 3½ miles upstream from Muddy Creek.

Drainage area.--159 sq mi (including drainage area of Evergreen Creek above road crossing 1½ miles south of station).

Records available.--October 1940 to September 1952.

Gage.--Wire-weight gage read twice daily, oftener during floods. Altitude of gage is 218 ft (by barometer).

Average discharge.--12 years, 455 cfs.

Extremes.--Maximum discharge observed, 6,010 cfs Dec. 5 (gage height, 20.10 ft); minimum observed, 5.2 cfs Sept. 24.
1940-52: Maximum discharge, 8,250 cfs Dec. 15, 1946 (gage height, 20.67 ft, from floodmark); minimum, that of Sept. 24, 1952.

Remarks.--Records good. Records include flow of Evergreen Creek (tributary to Muddy Creek) at road crossing 1½ miles south, with which overflow from Marys River may at times be mingled. City of Corvallis diverts municipal supply from headwaters; other small diversions above station for irrigation of about 1,500 acres. Slight regulation by small storage reservoir on Rock Creek operated by city of Corvallis.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Nov. 28 to Dec. 4)

Oct. 1 to Nov. 11				Nov. 12 to Sept. 30			
2.6	14	5.0	210	1.8	4.7	7.0	576
2.8	19	7.0	526	1.9	7.0	10.0	1,180
3.0	28	10.0	1,180	2.1	14	15.0	2,500
3.5	60	14.0	2,200	2.5	35	18.0	3,670
4.0	102			3.0	70	19.0	4,380
				4.0	156	20.0	5,800
				5.0	264		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	144	2,420	1,070	2,850	806	441	189	65	92	13	7.7
2	197	124	1,890	878	3,060	692	424	170	62	71	12	7.4
3	190	120	2,240	758	3,570	711	394	157	57	60	12	7.0
4	113	123	3,200	995	3,440	751	363	150	55	50	11	6.1
5	52	117	*5,760	1,040	2,660	728	345	144	54	45	11	6.5
6	32	104	3,710	1,080	1,920	690	325	141	53	42	*11	8.0
7	24	97	2,420	986	1,450	616	306	142	51	39	11	7.0
8	18	93	1,710	902	1,120	549	286	135	50	33	10	9.8
9	16	88	1,280	*1,050	930	513	*269	128	47	30	10	13
10	15	406	984	1,900	788	728	254	124	46	28	9.8	11
11	27	1,690	810	2,050	724	786	254	121	50	27	11	11
12	56	2,280	696	1,610	720	747	242	119	54	27	10	11
13	97	1,820	605	1,260	628	690	264	*117	59	27	11	9.4
14	74	1,630	526	1,140	585	747	272	123	72	26	12	9.1
15	*124	1,460	467	1,180	554	778	242	121	83	24	12	7.0
16	111	880	472	966	542	694	231	111	75	22	12	7.0
17	93	678	472	798	506	619	219	104	59	20	12	6.5
18	73	558	1,500	707	475	716	214	99	53	20	12	7.0
19	101	484	1,730	650	530	587	215	99	47	18	11	7.0
20	184	455	1,270	938	511	786	206	97	47	18	10	6.8
21	280	388	1,140	906	*469	768	196	96	53	18	9.4	6.5
22	458	357	2,120	874	489	726	189	96	52	18	9.1	6.5
23	1,710	306	1,840	1,270	659	690	183	89	48	18	9.1	*7.0
24	1,950	274	1,380	1,830	826	892	179	84	50	18	9.1	6.1
25	1,060	281	1,070	1,750	978	997	174	80	46	15	9.8	6.5
26	592	*954	910	1,510	1,280	886	170	77	45	17	10	6.3
27	389	878	1,060	1,360	1,280	758	165	75	*43	15	10	7.0
28	310	1,080	1,040	1,200	1,100	659	164	70	56	15	9.1	7.4
29	248	1,390	1,710	1,070	934	576	162	68	168	14	9.1	6.8
30	202	*1,490	1,750	1,430	-	528	190	69	140	14	9.1	7.4
31	168	-	1,390	2,490	-	506	-	65	-	13	8.4	-
Total	9,018	20,749	49,572	37,648	35,578	21,920	7,538	3,460	1,840	894	326.0	232.8
Mean	291	692	1,599	1,214	1,227	707	251	112	61.3	28.8	10.5	7.76
Cfsm	1.83	4.35	10.1	7.64	7.72	4.45	1.58	0.704	0.386	0.181	0.066	0.049
In.	2.11	4.85	11.59	8.81	8.32	5.13	1.76	0.81	0.43	0.21	0.08	0.05
Ac-ft	17,890	41,160	98,320	74,670	70,570	43,480	14,950	6,860	3,650	1,770	647	462

Calendar year 1951: Max 5,760 Min 8 Mean 624 Cfsm 3.92 In. 53.28 Ac-ft 451,800
Water year 1951-52: Max 5,760 Min 6.1 Mean 516 Cfsm 3.25 In. 44.15 Ac-ft 374,400

Peak discharge (base, 2,500 cfs).--Dec. 1 (9 a.m.) 2,890 cfs (16.11 ft); Dec. 5 (8 a.m.) 6,010 cfs (20.10 ft); Feb. 3 (4 p.m.) 4,090 cfs (18.66 ft).
* Discharge measurement made on this day.

Calapooya River at Holley, Oreg.

Location.--Lat 44°21'00", long. 122°47'00", in SE¼ sec. 15, T. 14 S., R. 1 W., on right bank a quarter of a mile southwest of Holley and 5 miles upstream from Brush Creek.

Drainage area.--105 sq mi.

Records available.--September 1935 to September 1952.

Gage.--Staff gage read once daily below, and two or more times daily above 3.0 ft gage height. Datum of gage is 527.20 ft above mean sea level, datum of 1929.

Average discharge.--17 years, 431 cfs.

Extremes.--Maximum discharge during year, 3,540 cfs Oct. 23 (gage height, 6.9 ft); minimum, 24 cfs Sept. 30.
1935-52: Maximum discharge, 12,200 cfs Dec. 28, 1945 (gage height, 14.1 ft, from floodmark), from rating curve extended above 5,300 cfs by logarithmic plotting; minimum observed, 13 cfs Sept. 8, 1940.

Remarks.--Records good. No diversion 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.

Revisions (water years).--W 1044: 1943. W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 9 to Mar. 23)

0.9	23	2.5	370
1.0	29	3.0	590
1.3	56	4.0	1,160
1.6	101	5.0	1,900
2.0	202	7.0	3,630

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	330	227	2,380	700	2,820	650	800	442	132	474	61	33
2	*450	208	1,640	600	2,770	560	836	362	122	350	60	32
3	980	191	2,300	560	2,910	535	806	323	120	284	57	31
4	430	194	2,640	580	3,310	580	730	288	116	242	56	31
5	224	168	2,910	530	2,220	565	872	260	114	213	57	36
6	149	157	*1,720	515	*1,550	555	980	248	120	194	54	36
7	114	146	1,160	450	1,260	525	866	239	107	168	52	35
8	91	134	932	422	1,120	505	700	330	99	157	52	*35
9	76	129	740	410	1,000	535	605	378	98	144	52	59
10	70	257	655	740	896	740	570	316	*101	134	51	53
11	69	590	640	680	872	680	540	312	136	127	49	40
12	213	1,580	655	540	800	625	490	295	146	120	48	37
13	227	1,440	620	470	715	565	520	295	154	114	47	35
14	370	*1,300	535	478	670	530	575	295	114	107	46	35
15	640	926	466	430	710	495	490	288	202	103	45	33
16	402	730	474	386	794	466	450	260	139	96	43	31
17	302	580	474	338	710	*462	442	281	114	92	42	30
18	236	482	*1,300	320	675	490	530	281	105	89	42	30
19	402	430	1,150	298	625	466	590	267	98	87	42	29
20	740	402	806	402	570	450	474	260	99	84	41	28
21	860	402	860	370	525	450	402	260	107	81	40	28
22	908	370	2,140	354	495	442	370	227	92	80	39	27
23	2,640	316	1,370	490	710	580	358	208	87	76	39	27
24	1,430	288	980	980	685	2,730	354	219	103	75	39	26
25	860	295	830	920	705	2,140	410	213	98	72	39	26
26	640	590	752	848	830	1,640	410	196	94	72	39	25
27	474	690	740	848	806	1,360	394	182	87	68	37	25
28	398	1,030	764	788	776	1,200	442	188	134	66	37	25
29	338	1,840	1,510	848	690	968	362	174	1,030	*64	36	25
30	288	2,550	1,240	1,430	-	890	*338	146	800	62	35	24
31	254	-	908	2,080	-	1,000	-	144	-	81	35	-
Total	15,605	18,642	36,291	19,805	33,219	24,379	16,706	8,177	5,068	4,156	1,412	967
Mean	503	621	1,171	639	1,145	786	557	264	169	134	45.5	32.2
Cfsm	4.79	5.91	11.2	6.09	10.9	7.49	5.30	2.51	1.61	1.28	0.433	0.307
In.	5.53	6.60	12.85	7.01	11.77	8.63	5.92	2.90	1.80	1.47	0.50	0.34
Ac-ft	30,950	36,980	71,980	39,280	65,890	48,360	33,140	16,220	10,050	8,240	2,800	1,920

Calendar year 1951: Max 3,870 Min 20 Mean 523 Cfsm 4.98 In. 67.56 Ac-ft 378,500
Water year 1951-52: Max 3,310 Min 24 Mean 504 Cfsm 4.80 In. 65.32 Ac-ft 365,800

Peak discharge (base, 2,600 cfs).--Oct. 23 (11 a.m.) 3,540 cfs (6.9 ft); Nov. 30 (1 a.m.) 3,140 cfs (6.46 ft); Dec. 5 (3 a.m.) 3,410 cfs (6.76 ft); Dec. 22 (8 a.m.) 2,780 cfs (6.06 ft); Feb. 3 (11 p.m.) 3,450 cfs (6.8 ft); Mar. 24 (10:30 a.m.) 3,220 cfs (6.54 ft).
* Discharge measurement made on this day.

Calapooya River at Albany, Oreg.

Location.--Lat 44°37'15", long. 123°07'40", in NW¼ sec. 13, T. 11 S., R. 4 W., near right bank on upstream side of highway bridge, half a mile downstream from Oak Creek, 1½ miles southwest of Albany, and 3 miles upstream from mouth.

Drainage area.--372 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Wire-weight gage read twice daily, oftener at high stages. Datum of gage is 180.37 ft above mean sea level, datum of 1929.

Average discharge.--12 years, 901 cfs.

Extremes.--Maximum discharge observed during year, 9,400 cfs Dec. 6 (gage height, 17.79 ft); minimum observed, 5 cfs Sept. 30; minimum daily, 6 cfs Sept. 30.
1940-52: Maximum discharge observed, 24,900 cfs Jan. 8, 1948; maximum gage height, 25.5 ft Jan. 2, 1943, from graph based on gage readings (backwater from Willamette River); minimum discharge observed, 5 cfs Aug. 14, 21, 28, Sept. 18, 1951, Sept. 30, 1952; minimum daily, 6 cfs Aug. 14, 21, 28, Sept. 18, 1951, Sept. 30, 1952.

Remarks.--Records fair. A few small diversions above station for irrigation. Diurnal fluctuation caused by ponds at flour mills near Shedd.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from Willamette River Feb. 5, 6)

Oct. 1 to Nov. 30				Dec. 1 to Sept. 30			
1.4	25	4.0	428	0.9	5	4.0	428
1.9	59	6.0	1,010	1.1	12	5.0	700
2.4	114	9.0	2,140	1.3	22	10.0	2,600
3.0	203	13.0	4,000	1.7	47	14.0	4,900
				2.0	74	17.0	8,000
				2.5	131	18.0	9,900
				3.0	203		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	330	5,600	2,330	4,240	1,060	1,300	493	150	892	51	19
2	85	298	5,490	1,550	5,710	900	1,110	498	150	500	48	*26
3	413	264	4,680	1,160	6,270	802	1,180	423	*139	356	54	26
4	883	241	*5,620	1,810	6,190	987	1,050	393	134	282	32	24
5	438	241	9,120	1,910	5,910	1,130	952	332	126	229	51	27
6	262	*227	8,800	1,680	4,520	1,010	1,050	323	123	205	47	29
7	173	217	5,550	1,690	3,160	847	1,120	302	124	176	45	19
8	141	203	3,210	1,220	2,080	714	980	291	123	178	41	20
9	124	200	1,940	1,050	1,630	652	798	408	104	151	41	33
10	106	237	1,460	2,230	1,370	931	688	390	116	140	47	35
11	114	730	1,190	3,040	1,220	*1,060	640	354	122	136	28	53
12	96	1,580	1,090	2,300	1,280	917	607	335	*134	111	37	66
13	183	2,720	1,050	1,440	1,290	794	580	328	159	110	40	38
14	249	3,310	952	1,400	1,060	707	661	335	126	96	37	36
15	312	3,150	798	1,810	1,150	652	649	323	147	99	39	25
16	580	1,930	694	1,260	1,480	575	564	307	193	95	35	32
17	428	1,200	749	889	1,720	544	528	291	168	*87	39	32
18	335	910	1,260	752	1,310	688	523	286	144	87	26	30
19	269	769	*2,870	742	1,250	1,170	586	280	128	81	29	29
20	410	748	2,940	1,050	1,990	952	604	284	128	74	37	24
21	658	781	1,750	2,150	1,550	805	510	282	116	66	35	19
22	850	763	2,390	1,960	966	682	*460	280	127	79	30	18
23	1,120	595	3,480	2,740	1,670	575	428	233	111	76	31	8
24	2,310	510	2,760	2,680	1,570	1,500	408	197	126	72	46	20
25	2,730	476	1,730	2,770	1,280	3,500	423	192	126	72	29	27
26	1,400	1,180	1,310	2,270	1,920	3,920	460	205	128	71	35	20
27	802	2,460	2,230	1,700	1,920	2,930	453	197	126	78	35	18
28	610	2,400	3,230	1,510	1,400	2,040	440	186	119	40	30	26
29	488	3,130	2,960	*1,350	1,170	1,670	483	184	200	74	35	18
30	443	3,720	3,940	1,450	-	1,360	428	172	1,030	60	32	6
31	383	-	4,010	2,820	-	1,320	-	166	-	46	35	-
Total	17,420	35,520	94,853	54,713	68,276	37,394	20,663	9,270	4,947	4,819	1,177	803
Mean	562	1,184	3,060	1,765	2,354	1,206	689	299	165	155	38.0	26.8
Cfsm	1.51	3.18	8.23	4.74	6.33	3.24	1.85	0.804	0.444	0.417	0.102	0.072
In.	1.74	3.55	9.48	5.47	6.83	3.74	2.07	0.93	0.49	0.48	0.12	0.08
Ac-ft	34,550	70,450	188,100	108,500	135,400	74,170	40,980	18,390	9,810	9,560	2,330	1,590

Calendar year 1951: Max 9,120 Min 6 Mean 1,081 Cfsm 2.91 In. 39.45 Ac-ft 782,700
Water year 1951-52: Max 9,120 Min 6 Mean 956 Cfsm 2.57 In. 34.98 Ac-ft 693,800

* Discharge measurement made on this day.

Willamette River at Albany, Oreg.

Location.--Lat 44°38'20", long. 123°06'20", in SW¼ sec. 6, T. 11 S., R. 3 W., on right bank at Albany, a quarter of a mile downstream from Calapooya River and at mile 120.0.

Drainage area.--4,840 sq mi, approximately.

Records available.--November 1878 to April 1882, 1883 to 1888 (fragmentary), January 1892 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 172.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 27, 1906, staff gage at site a quarter of a mile upstream at same datum. Sept. 27, 1906, to Nov. 14, 1934, staff gage at site 300 ft upstream at same datum.

Average discharge.--57 years (1895-1952), 13,970 cfs.

Extremes.--Maximum discharge during year, 81,900 cfs Dec. 6 (gage height, 18.62 ft); minimum, 3,950 cfs Sept. 4, 5.

1878-82, 1892-1952: Maximum discharge, 266,000 cfs Jan. 14, 1881 (gage height, 32.8 ft); minimum, 1,840 cfs Sept. 1, 2, 1940.

Maximum stage known, 36.0 ft Dec. 4, 1861 (discharge, 340,000 cfs, from rating curve extended above 220,000 cfs). Flood of Feb. 4, 1890, reached a stage of 33.9 ft (discharge, 291,000 cfs).

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated:

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
414.....	1915	Jan. 15, 1915	53,300	14.9
464.....	1917	Apr. 9, 1917	49,500	14.2
769.....	1934	Jan. 25, 1934	76,300	18.2

Remarks.--Records good. Flow regulated at times by Cottage Grove, Dorena, and Fern Ridge Reservoirs (see pp. 131, 134, 161). Albany power canal diverts water from South Santiam River into Willamette River above station; small diversions for irrigation.

Revisions (water years).--W 694: Drainage area. W 904: 1939. W 964: 1881, 1890, 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927, 1932(M). W 984: 1916. Revised figures of discharge, in cubic feet per second, for the water years 1985, 1902, 1907, 1918, and 1919, superseding figures published in Water-Supply Papers 370, 484, 514, and 964, are given herein:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1895		1918-Con.		1918-Con.		1919-Con.	
Jan. 4	62,100	Aug. 17	3,020	Oct. 3	2,360	Aug. 16	2,800
		18	3,250	4	2,360	17	2,580
1902		19	3,250	5	2,580	18	2,580
July 12	8,500	20	3,250	6	2,580	19	2,580
13	8,000	21	3,020	7	3,490	20	2,580
14	7,500	22	3,020	8	3,730	21	2,580
15	7,000	23	3,020	9	3,730	22	2,580
16	6,600	24	3,020	10	3,250	23	2,360
17	6,300	25	3,020	11	3,020	24	2,360
18	6,000	26	3,020	12	2,800	25	2,360
19	5,800	27	3,020	13	2,580	26	2,360
20	5,500	28	3,020	14	2,360	27	2,360
21	5,200	29	3,020	15	2,360	28	2,140
22	5,000	30	3,020	16	2,800	29	2,140
23	4,900	31	3,020	17	3,490	30	2,140
24	4,800	Sept. 1	3,020	18	5,650	31	2,140
25	4,700	2	3,020	19	4,450	Sept. 1	2,140
26	4,600	3	2,800	20	3,730	2	2,140
27	4,600	4	2,800	21	3,490	3	2,140
28	4,600	5	2,800	22	3,250	4	2,360
29	4,600	6	2,800	23	3,250	5	2,580
		7	2,800	24	3,250	6	3,250
1907		8	2,800	25	3,020	7	4,450
Feb. 4	102,000	9	2,580	26	3,020	8	5,900
5	163,000	10	2,580	27	3,020	9	5,410
6	212,000	11	2,580	28	3,020	10	4,690
7	154,000	12	2,580	29	3,020	11	3,730
8	104,000	13	2,580	30	3,020	12	3,490
9	65,100	14	2,580	31	3,020	13	3,970
		15	2,580			14	3,970
1918		16	2,800	1919		15	3,970
Aug. 1	3,490	17	2,800	Aug. 1	3,250	16	3,490
2	3,490	18	2,580	2	3,250	17	3,250
3	3,490	19	2,580	3	3,250	18	3,250
4	3,250	20	2,580	4	3,250	19	3,020
5	3,250	21	2,580	5	3,250	20	3,020
6	3,250	22	2,360	6	3,250	21	3,020
7	3,250	23	2,360	7	3,020	22	3,020
8	3,250	24	2,360	8	3,020	23	3,020
9	3,020	25	2,360	9	3,020	24	2,800
10	3,020	26	2,360	10	3,020	25	2,800
11	3,020	27	2,360	11	3,020	26	2,800
12	3,020	28	2,360	12	3,020	27	2,800
13	3,020	29	2,140	13	2,800	28	2,580
14	3,020	30	2,140	14	2,800	29	2,580
15	3,020	Oct. 1	2,140	15	2,800	30	2,580
16	3,020	2	2,140				

Willamette River at Albany, Oreg.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1895, 1902, 1907, 1918, 1919

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
January 1895	79,700	10,300	33,800	6.98	8.05	2,080,000
Calendar year 1895	79,700	2,220	11,700	2.42	32.84	8,480,000
July 1902	17,500	4,360	7,620	1.57	1.81	469,000
Water year 1901-2	79,700	2,950	14,200	2.93	39.92	10,300,000
Calendar year 1902	124,000	2,950	16,300	3.37	45.60	11,800,000
February 1907	212,000	13,600	50,100	10.4	10.83	2,780,000
Water year 1906-7	212,000	2,580	15,700	3.24	43.90	11,300,000
Calendar year 1907	212,000	2,580	16,600	3.43	46.57	12,000,000
August 1918	3,490	3,020	3,120	.645	.74	192,000
September	3,020	2,140	2,590	.535	.60	154,000
Water year 1917-18	89,000	2,140	14,400	2.98	40.39	10,400,000
October 1918	5,650	2,140	3,100	.640	.74	191,000
Calendar year 1918	87,500	2,140	12,200	2.52	34.28	8,850,000
August 1919	3,250	2,140	2,730	.564	.65	168,000
September	5,900	2,140	3,270	.676	.75	195,000
Water year 1918-19	86,800	2,140	14,300	2.95	40.00	10,300,000
Calendar year 1919	86,800	2,140	16,600	3.43	46.48	12,000,000

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

-0.8	3,950	7.0	25,400
0.0	5,210	13.0	51,200
2.0	9,260	19.0	84,400

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,380	9,060	61,100	36,800	48,400	19,600	27,100	15,700	11,700	20,100	4,340	4,080
2	6,220	8,210	68,300	28,200	61,600	17,500	23,900	15,100	10,700	14,400	4,300	*4,060
3	7,830	7,530	64,300	22,900	72,900	15,700	22,600	13,900	10,200	11,900	4,210	4,020
4	11,600	7,200	62,200	22,500	77,300	15,400	21,900	12,500	10,000	10,500	4,220	3,990
5	8,740	6,860	75,600	22,900	79,400	15,800	20,800	11,500	10,100	9,440	4,300	4,020
6	6,710	*6,550	*80,800	22,100	72,400	15,200	22,400	11,000	10,500	8,740	4,320	4,210
7	5,850	6,310	66,500	21,200	54,200	14,200	25,100	10,600	10,800	8,070	4,210	4,220
8	5,280	6,060	44,400	19,300	39,100	13,100	25,500	10,600	10,300	7,550	4,160	4,270
9	4,830	5,940	33,900	17,700	31,600	12,300	22,600	13,600	9,790	7,180	4,150	4,380
10	4,640	6,280	28,100	21,700	27,800	13,100	19,500	14,200	9,840	6,930	4,180	4,850
11	4,670	9,460	24,700	31,700	25,000	16,600	18,000	13,600	9,940	6,760	4,400	4,750
12	4,640	19,000	23,100	31,100	24,200	*16,900	17,400	14,000	*9,640	6,550	4,480	4,460
13	6,080	39,500	22,800	25,700	23,500	15,800	16,800	13,900	9,080	6,370	4,380	4,320
14	6,690	45,600	22,100	22,100	20,800	14,600	17,300	15,000	8,570	6,150	4,340	4,260
15	6,920	42,700	20,200	22,300	19,300	13,700	18,600	15,700	8,660	5,940	4,320	4,160
16	10,400	32,800	17,400	20,400	20,900	12,500	17,600	14,800	9,460	5,760	4,270	4,200
17	9,040	23,600	15,700	17,200	24,400	11,800	16,100	13,900	8,500	*5,570	4,350	4,200
18	7,590	18,600	17,000	15,100	23,500	12,100	15,500	14,200	8,070	5,430	4,530	4,180
19	7,050	15,600	27,400	14,200	21,800	13,300	17,200	14,800	7,980	5,310	4,500	4,140
20	8,500	14,000	33,700	14,700	22,100	13,200	19,500	15,500	8,010	5,190	4,430	4,060
21	13,300	13,300	*26,800	18,800	19,700	13,400	17,900	15,600	8,010	5,090	4,380	4,080
22	16,300	12,600	27,300	19,900	17,700	12,800	16,000	14,700	7,980	5,010	4,300	4,050
23	20,700	11,300	46,700	23,200	18,900	12,100	*14,500	13,500	7,720	4,900	4,290	4,060
24	38,700	10,300	48,800	26,200	21,100	15,900	14,100	12,900	7,790	4,880	4,270	4,100
25	42,800	9,660	39,500	30,100	20,700	43,800	14,700	13,100	8,500	4,800	4,300	4,120
26	29,700	11,400	31,700	30,400	22,600	57,700	16,500	13,500	8,280	4,690	4,430	4,090
27	22,700	15,800	29,200	27,600	23,600	50,800	17,800	13,200	7,850	4,620	4,350	4,080
28	19,000	20,600	32,900	25,500	22,500	41,300	17,800	13,100	7,870	4,580	4,240	4,100
29	15,100	30,300	36,800	*23,800	21,900	36,400	18,900	13,800	9,970	4,460	4,200	4,080
30	11,900	40,900	45,300	24,600	-	32,400	17,100	13,200	18,300	4,340	4,100	4,030
31	10,300	-	48,700	33,300	-	32,700	-	12,200	-	4,320	4,080	-
Total	378,160	507,020	‡1,223	733,200	978,900	641,700	570,700	422,900	284,110	215,530	133,330	125,620
Mean	12,200	16,900	39,450	23,650	33,760	20,700	19,020	13,640	9,470	6,953	4,301	4,187
Cfsm	2.52	3.49	8.15	4.89	6.98	4.28	3.93	2.82	1.96	1.44	0.889	0.865
In.	2.91	3.90	9.40	5.63	7.52	4.93	4.39	3.25	2.18	1.66	1.02	0.97
Ac-ft	750,100	‡1,006	‡2,426	‡1,454	‡1,942	‡1,273	‡1,132	838,800	563,500	427,500	264,500	249,200

Calendar year 1951: Max 89,900 Min 3,380 Mean 18,640 Cfsm 3.85 In. 52.27 Ac-ft 13,490,000
Water year 1951-52: Max 80,800 Min 3,990 Mean 16,980 Cfsm 3.51 In. 47.76 Ac-ft 12,330,000

Peak discharge (base, 59,000 cfs).--Dec. 6 (1 p.m.) 81,900 cfs (18.62 ft); Feb. 5 (4 p.m.) 80,400 cfs (18.37 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

North Santiam River at Detroit, Oreg.

Location.--Lat 44°43'30", long. 122°08'00", in NE¼ sec. 12, T. 10 S., R. 5 E., on right bank 1 mile east of Detroit, 2¼ miles upstream from Breitenbush River, and 2¾ miles downstream from Boulder Creek.

Drainage area.--224 sq mi.

Records available.--January 1907 to October 1909, October 1928 to September 1952 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,475.68 ft above mean sea level, datum of 1929. Jan. 24, 1907, to Oct. 31, 1909, staff gage at site a quarter of a mile upstream at different datum. Oct. 1, 1928, to June 30, 1932, staff gage at site half a mile downstream at different datum.

Average discharge.--26 years (1907-9, 1928-52), 971 cfs.

Extremes.--Maximum discharge during year, 4,280 cfs Oct. 23 (gage height, 5.41 ft); minimum, 458 cfs Sept. 30 (gage height, 0.76 ft).

1907-9, 1928-52: Maximum discharge, 20,300 cfs Dec. 28, 1945 (gage height, 11.24 ft); minimum, 250 cfs Sept. 13, 1909 (gage height, 0.40 ft, site and datum then in use).

Remarks.--Records good. No diversion above station. Slight diurnal fluctuation caused by powerplant at Idanha. Records of water temperatures, at site 2.0 miles upstream, for the water year 1952 are given in Water-Supply Paper 1253.

Revisions.--W 814: Drainage area. Revised figures of discharge, in cubic feet per second, for water year 1931, superseding those published in Water-Supply Paper 724, are given herewith:

Apr. 18, 1931..... 1,070

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
April 1931.....	52,550	10,100	830	1,750	7.64	8.52	104,000
Water year 1930-31....	254,800	10,100	306	698	3.05	41.34	505,000

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3		Feb. 4 to Sept. 30	
0.9	500	0.7	440
1.5	740	1.0	545
2.0	1,020	2.0	1,050
3.0	1,720	3.0	1,740
5.0	3,710	5.0	3,710

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	720	730	3,560	936	2,250	858	1,330	*1,860	1,620	1,300	605	498
2	966	686	2,660	840	2,470	842	1,340	1,680	1,570	1,200	601	498
3	1,160	678	2,430	815	2,480	848	1,330	1,560	1,590	1,150	605	505
4	*790	682	2,360	800	3,160	836	1,370	1,460	1,680	1,130	601	509
5	658	650	*2,320	770	2,680	815	1,610	1,380	1,820	1,070	597	541
6	602	634	1,800	745	2,110	800	2,000	1,340	1,780	990	585	509
7	566	618	1,510	720	1,790	780	2,120	1,380	1,600	936	581	502
8	534	606	1,310	700	*1,580	765	1,920	1,640	1,540	930	585	537
9	524	598	1,160	745	1,480	795	1,740	1,620	1,570	924	597	565
10	515	695	1,110	745	1,380	853	1,670	1,680	1,520	908	585	517
11	524	996	1,070	705	1,360	826	1,640	1,840	1,380	870	577	*502
12	618	1,740	1,050	678	1,310	800	1,610	1,890	*1,240	836	573	494
13	606	1,580	1,010	666	1,220	780	1,710	2,200	1,150	810	569	494
14	745	1,400	972	666	1,180	760	1,770	2,220	1,260	800	561	488
15	830	*1,180	930	654	1,170	745	1,710	2,040	1,310	775	553	488
16	740	1,040	942	634	1,140	735	1,640	2,040	1,190	745	549	484
17	666	942	894	622	1,090	745	1,690	2,200	1,180	720	545	480
18	670	882	1,190	614	1,040	750	2,040	2,280	1,210	700	537	480
19	835	846	1,120	614	1,030	735	2,290	2,350	1,220	690	533	480
20	1,280	825	*990	626	960	*710	2,000	2,350	1,220	680	529	477
21	1,190	810	1,070	622	919	695	1,820	2,180	1,200	670	525	474
22	1,410	780	1,510	618	902	685	1,760	1,980	1,100	*666	533	470
23	3,310	750	1,260	618	892	790	1,790	1,960	1,090	661	533	470
24	2,180	725	1,130	682	853	*1,430	1,890	2,050	1,130	656	529	470
25	1,610	765	1,030	682	842	1,680	2,170	2,100	1,060	638	521	470
26	1,280	1,170	984	690	870	1,760	2,410	2,040	1,000	634	513	470
27	1,100	1,260	954	690	880	1,720	2,420	2,080	1,010	630	509	470
28	996	1,670	978	682	880	1,750	2,400	2,190	1,100	625	509	464
29	918	2,050	1,150	686	880	1,600	2,050	2,060	1,580	621	509	461
30	840	2,560	1,030	906	-	1,520	1,930	1,880	1,540	621	505	458
31	780	-	954	1,440	-	1,460	-	1,790	-	617	502	-
Total	30,163	30,548	42,438	22,611	40,798	30,868	55,170	59,320	40,460	25,203	17,156	14,725
Mean	973	1,018	1,369	729	1,407	996	1,839	1,914	1,349	813	553	491
Cfsm	4.34	4.54	6.11	3.25	6.28	4.45	8.21	8.54	6.02	3.63	2.47	2.19
In.	5.01	5.07	7.05	3.75	6.77	5.12	9.16	9.85	6.72	4.18	2.85	2.44
Ac-ft	59,830	60,590	84,170	44,850	80,920	61,230	109,400	117,700	80,250	49,990	34,030	29,210
(†)	956	1,006	1,326	718	1,320	927	1,775	1,886	1,330	806	544	478

Calendar year 1951: Max 4,900 Min 461 Mean 1,193 Cfsm 5.33 In. 72.32 Ac-ft 863,900
Water year 1951-52: Max 3,560 Min 458 Mean 1,119 Cfsm 5.00 In. 67.97 Ac-ft 812,200

Peak discharge (base, 3,300 cfs).--Oct. 23 (6:30 a.m.) 4,280 cfs (5.41 ft); Dec. 1 (8 a.m.) 4,220 cfs (5.37 ft).

* Discharge measurement made on this day.

† Mean discharge at new station 2.0 miles upstream which, beginning with records for 1953, will replace this station. Mean discharge at new station for calendar year 1951, 1,163 cfs; for water year 1952, 1,088 cfs.

Breitenbush River above French Creek, near Detroit, Oreg.

Location.--Lat 44°45'00", long. 122°08'00", in NE¼ sec. 36, T. 9 S., R. 5 E., on left bank 500 ft downstream from Canyon Creek, 1½ miles upstream from French Creek, and 2 miles northeast of Detroit.

Drainage area.--108 sq mi.

Records available.--June 1932 to September 1952 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,559.64 ft above mean sea level, datum of 1929.

Average discharge.--20 years, 553 cfs.

Extremes.--Maximum discharge during year, 3,630 cfs Oct. 23 (gage height, 5.97 ft); minimum, 134 cfs Sept. 29, 30.
1932-52: Maximum discharge, 11,600 cfs Dec. 28, 1945 (gage height, 11.86 ft); minimum, 87 cfs Sept. 2, 1940 (gage height, 0.36 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion or regulation above station. Records of water temperatures at site above Canyon Creek, for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 1044: 1943(M). Revised figures of discharge, in cubic feet per second, for water year 1947, superseding those published in Water-Supply Paper 1094, are given herewith:

Oct. 27, 1946..... 495
Nov. 20, 1946..... 1,190

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October 1946.....	9,292	1,090	129	300	2.78	3.20	18,430
November.....	28,781	3,370	213	959	8.88	9.91	57,090
Calendar year 1946....	244,448	7,590	129	670	6.20	84.18	484,800
Water year 1946-47....	211,837	7,590	129	580	5.37	72.95	420,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	396	323	2,830	400	1,850	440	698	*914	650	610	211	150
2	780	306	1,720	370	1,900	386	698	808	645	534	206	148
3	1,110	306	1,490	340	1,900	386	692	720	703	520	206	148
4	*480	334	1,470	340	2,450	376	752	655	813	525	201	150
5	326	298	1,480	330	1,900	362	1,050	615	914	494	196	174
6	262	277	1,010	320	1,350	354	1,420	600	808	424	191	157
7	227	262	769	300	1,050	344	1,420	625	665	396	189	155
8	206	250	686	290	*840	340	1,140	786	635	420	189	176
9	191	247	595	310	764	362	962	764	714	424	196	191
10	182	326	543	320	708	452	914	835	665	412	186	161
11	191	608	543	300	742	428	914	968	530	393	184	*155
12	277	1,140	543	280	708	393	884	986	*460	368	182	152
13	298	1,020	525	280	640	372	1,010	1,210	412	362	180	150
14	630	774	484	280	590	354	1,040	1,110	498	351	180	146
15	556	630	456	270	575	340	938	944	502	340	178	144
16	416	*516	476	260	552	334	902	992	452	316	176	144
17	344	448	456	240	516	340	998	1,160	484	292	174	142
18	337	416	742	240	480	351	1,330	1,170	552	277	174	142
19	645	396	645	240	460	334	1,440	1,220	575	274	171	142
20	1,060	408	*525	250	424	*316	1,120	1,190	575	271	169	141
21	774	408	580	240	396	302	962	1,010	520	*265	167	139
22	1,000	390	1,100	240	386	295	926	868	456	250	165	139
23	2,670	368	750	240	376	398	932	896	440	253	165	139
24	1,360	348	600	290	354	1,010	1,060	992	476	250	165	139
25	884	390	520	320	354	*1,100	1,340	1,010	436	238	165	139
26	650	1,050	470	350	379	1,100	1,440	944	408	235	163	137
27	534	1,000	440	390	424	1,080	1,420	980	436	232	161	137
28	468	1,310	440	360	436	1,110	1,350	1,060	498	224	159	137
29	432	1,460	620	360	424	926	1,050	920	932	219	157	137
30	386	1,850	540	670	-	852	962	791	816	219	155	136
31	354	-	460	1,300	-	830	-	752	-	213	152	-
Total	18,426	17,859	24,508	10,720	23,928	16,331	31,764	28,495	17,672	10,601	5,513	4,447
Mean	594	595	791	346	825	527	1,059	919	589	342	178	148
Cfsm	5.50	5.51	7.32	3.20	7.64	4.88	9.81	8.51	5.45	3.17	1.65	1.37
In.	6.34	6.15	8.44	3.69	8.24	5.62	10.94	9.81	6.09	3.65	1.90	1.53
Ac-ft	36,550	35,420	48,610	21,260	47,460	32,330	63,000	56,520	35,050	21,030	10,930	8,820
(†)	603	593	786	338	831	526	1,033	935	583	337	173	149

Calendar year 1951: Max 3,740 Min 130 Mean 629 Cfsm 5.82 In. 79.00 Ac-ft 455,100
Water year 1951-52: Max 2,830 Min 136 Mean 574 Cfsm 5.31 In. 72.40 Ac-ft 417,000

Peak discharge (base, 4,000 cfs).--No peak above base.
* Discharge measurement made on this day.
† Mean discharge at station upstream above Canyon Creek, which, beginning with records for 1953, will replace this station. Mean discharge for water year 1952 is 572 cfs.
Note.--No gage-height record Dec. 22 to Feb. 7; discharge estimated on basis of recorded range in stage, weather records, and records for station above Canyon Creek near Detroit.

North Santiam River above Mayflower Creek, near Detroit, Oreg.

Location.--Lat 44°43'30", long. 122°15'10", in NW¼ sec. 7, T. 10 S., R. 5 E., on left bank 1,600 ft downstream from axis of Detroit Dam, 0.3 mile upstream from Mayflower Creek, and 5 miles west of Detroit.

Drainage area.--438 sq mi.

Records available.--October 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,189.50 ft above mean sea level, datum of 1929. Prior to Oct. 4, 1939, staff gage at site 1,600 ft upstream at datum 10.50 ft higher. Oct. 4 to Nov. 16, 1939, staff gage and Nov. 17, 1939, to Sept. 8, 1949, water-stage recorder, at site 800 ft upstream at datum 2.70 ft higher.

Average discharge.--14 years, 2,107 cfs.

Extremes.--Maximum discharge during year, 12,000 cfs Oct. 23 (gage height, 11.25 ft), from rating curve extended above 7,400 cfs by logarithmic plotting; minimum, 340 cfs Sept. 18 (caused by construction operations at Detroit Dam); minimum daily, 515 cfs Sept. 18.
1938-52: Maximum discharge, 41,200 cfs Dec. 28, 1945 (gage height, 18.20 ft, site and datum then in use), from rating curve extended above 18,000 cfs by logarithmic plotting; minimum, that of Sept. 18, 1952; minimum daily, 432 cfs Sept. 1, 1940.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station. Slight diurnal fluctuation caused by powerplant at Idanha.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23)

Oct. 1-23		Oct. 23 to Feb. 1		Feb. 2 to Sept. 30	
5.0	710	5.4	1,060	4.5	490
6.0	1,440	6.0	1,600	5.0	780
7.0	2,490	7.0	2,780	6.0	1,600
9.0	5,600	9.0	6,200	7.0	2,900
11.0	10,000	11.0	11,300	9.0	7,100
				11.0	13,300

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,440	1,480	a10,000	1,890	6,820	1,780	2,980	*3,750	2,680	2,880	913	714
2	2,450	1,390	a7,000	1,730	8,380	1,680	2,960	3,280	2,600	2,430	899	708
3	3,360	1,350	a5,800	1,700	7,830	1,680	2,960	2,940	2,670	2,100	885	714
4	1,890	1,380	a5,800	1,630	11,300	1,680	3,050	2,710	2,880	1,970	878	720
5	*1,330	1,300	*5,480	1,560	8,380	1,590	3,990	2,540	3,150	1,890	878	762
6	1,160	1,230	a4,500	1,490	5,790	1,550	5,360	2,440	3,040	1,720	864	756
7	960	1,190	a3,500	1,430	4,400	1,510	5,560	2,510	2,650	1,560	850	732
8	878	1,150	a3,000	1,390	*3,640	1,480	4,510	3,190	2,510	1,520	850	744
9	824	1,120	a2,600	1,470	3,260	1,540	3,830	3,160	2,610	1,520	864	843
10	800	1,420	a2,500	1,520	3,070	1,890	3,560	3,230	2,580	1,480	857	750
11	818	2,440	a2,400	1,390	3,110	1,790	3,540	3,690	2,260	1,420	843	762
12	1,190	4,840	a2,300	1,340	3,000	1,660	3,430	3,670	*2,010	1,390	836	714
13	1,220	4,150	a2,200	1,300	2,720	1,570	3,790	4,450	1,850	1,330	822	702
14	1,840	3,340	a2,100	1,290	2,710	1,500	4,030	4,400	2,060	1,300	808	690
15	2,040	*2,660	a2,000	1,230	2,470	1,440	3,730	3,910	2,240	1,260	801	652
16	1,660	2,290	a2,000	1,200	2,430	1,420	3,510	3,850	1,970	1,210	794	*637
17	1,400	2,050	a1,900	1,160	2,260	1,450	3,690	4,400	1,970	1,160	787	708
18	1,300	1,880	a2,800	1,160	2,140	1,490	4,980	4,540	2,050	1,120	780	515
19	1,930	1,810	a2,400	1,140	2,050	1,430	5,700	4,690	2,100	1,080	774	720
20	3,350	1,800	a2,100	1,170	1,890	1,360	4,430	4,670	2,110	1,060	774	726
21	2,780	1,780	*2,390	1,140	1,790	1,330	3,730	4,260	2,020	1,050	768	666
22	3,220	1,680	4,320	1,130	1,720	1,320	3,580	3,620	1,850	1,030	768	654
23	9,400	a1,600	3,090	1,150	1,680	1,660	3,600	3,620	1,760	1,020	762	648
24	*5,660	a1,500	2,550	1,410	1,590	*4,710	3,990	3,790	1,160	1,010	756	648
25	3,730	a1,700	2,250	1,500	1,590	5,310	4,890	3,950	843	990	756	648
26	2,790	a3,200	2,050	1,520	1,730	5,060	5,450	3,690	1,120	969	750	648
27	2,340	a3,200	1,960	1,620	1,870	4,670	5,310	3,710	1,490	962	738	642
28	2,070	a4,500	2,010	1,580	1,890	4,670	5,330	4,070	1,720	948	732	636
29	1,900	a5,500	2,720	1,580	1,870	3,950	4,210	3,690	2,500	941	726	630
30	1,730	a7,500	2,380	2,490	-	3,540	3,830	3,180	3,260	934	726	630
31	1,610	-	2,070	4,470	-	3,450	-	3,000	-	920	714	-
Total	69,070	72,430	100,170	47,780	103,380	71,160	123,510	112,600	65,713	42,174	24,953	20,719
Mean	2,228	2,414	3,231	1,541	3,565	2,295	4,117	3,632	2,190	1,360	805	691
Cfsm	5.09	5.51	7.38	3.52	8.14	5.24	9.40	8.29	5.00	3.11	1.84	1.58
In.	5.86	6.15	8.51	4.06	8.78	6.04	10.49	9.56	5.58	3.58	2.12	1.76
Ac-ft	137,000	143,700	198,700	94,770	205,100	141,100	245,000	223,300	130,300	83,650	49,490	41,100

Calendar year 1951: Max 12,000 Min 605 Mean 2,322 Cfsm 5.30 In. 71.96 Ac-ft 1,681,000
Water year 1951-52: Max 11,300 Min 515 Mean 2,332 Cfsm 5.32 In. 72.49 Ac-ft 1,693,000

Peak discharge (base, 10,000 cfs).--Oct. 23 (10 a.m.) 12,000 cfs (11.25 ft); Dec. 1 (about 10 a.m.) 11,600 cfs (11.10 ft); Feb. 4 (2 to 4 p.m.) 11,700 cfs (10.52 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for station at Detroit and Breitenbush River near Detroit.

Little North Santiam River near Mehama, Oreg.

Location.--Lat 44°47'30", long. 122°34'40", in NW¼ sec. 16, T. 9 S., R. 2 E., on left bank 2 miles east of Mehama and 2 miles upstream from mouth.

Drainage area.--110 sq mi.

Records available.--October 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 655.41 ft above mean sea level, datum of 1929. Oct. 1-26, 1931, staff gage at site 4 miles upstream at different datum. Oct. 27, 1931, to June 10, 1948, wire-weight gage at about present site at same datum.

Average discharge.--21 years, 755 cfs.

Extremes.--Maximum discharge during year, 7,850 cfs Oct. 23 (gage height, 9.80 ft); minimum, 27 cfs Sept. 28-30.
1931-52: Maximum discharge, 19,900 cfs Dec. 28, 1945 (gage height, 15.20 ft), from rating curve extended above 9,700 cfs by logarithmic plotting; minimum, 21 cfs Sept. 11, 1934, Sept. 27, 28, 1938, Sept. 1, 1940.

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

Revisions (water years).--W 754: 1932. W 1218: 1934, 1936, 1949-50.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.3	24	4.5	590
2.5	33	5.0	900
2.8	64	6.0	1,800
3.1	112	7.0	3,000
3.5	204	9.0	6,300
4.0	365		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	978	373	3,200	759	3,760	705	1,060	1,020	425	1,140	75	35
2	2,000	337	2,060	645	3,640	612	1,110	*804	397	830	72	33
3	*3,110	340	2,160	580	3,800	590	1,070	663	417	657	68	32
4	1,230	393	2,310	555	4,970	590	1,040	565	445	560	64	32
5	651	337	2,660	505	2,940	545	1,500	510	495	481	63	34
6	429	302	1,720	476	1,990	530	1,930	486	481	421	62	38
7	323	278	1,190	441	*1,540	495	1,630	505	385	362	59	38
8	259	259	949	413	1,300	486	1,150	765	344	326	58	43
9	215	256	778	437	1,190	580	914	804	362	302	68	62
10	186	365	705	575	1,080	1,120	879	753	393	278	64	52
11	196	1,200	778	500	1,100	900	893	893	377	259	56	42
12	1,050	3,130	921	458	1,040	765	837	791	340	235	54	*40
13	1,060	2,460	893	429	879	675	1,020	900	*285	215	52	39
14	1,870	1,930	735	417	791	590	1,110	1,090	442	196	51	35
15	1,690	1,400	623	377	858	530	970	1,040	798	178	50	33
16	1,040	*1,020	928	358	844	495	879	928	540	168	50	32
17	747	810	928	330	753	495	992	1,050	445	156	51	32
18	675	693	1,830	320	657	495	1,490	1,020	417	150	49	32
19	1,480	687	*1,600	309	618	*463	1,540	992	393	143	48	31
20	2,740	711	1,090	320	540	433	1,030	1,040	365	134	47	30
21	1,740	657	1,660	302	486	409	772	1,120	358	130	45	30
22	2,260	580	3,590	306	468	413	741	886	348	*126	44	28
23	5,520	505	1,900	354	618	612	711	798	323	120	43	28
24	2,700	458	1,320	545	634	3,820	837	817	358	114	43	28
25	1,630	463	1,010	699	693	3,500	1,070	798	340	108	46	28
26	1,130	1,750	830	747	956	2,580	1,090	705	306	101	43	28
27	851	1,540	810	879	1,040	2,080	1,050	693	306	96	42	28
28	687	2,000	804	858	921	1,930	1,280	765	409	91	40	27
29	575	2,350	1,550	942	810	1,480	900	618	2,500	84	38	27
30	486	2,380	1,230	1,900	-	1,380	886	500	1,990	81	37	27
31	425	-	928	3,590	-	1,480	-	481	-	78	37	-
Total	39,933	29,964	43,690	20,326	40,916	31,778	32,381	24,800	15,784	8,320	1,619	1,024
Mean	1,288	999	1,409	656	1,411	1,025	1,079	800	526	268	52.2	34.1
Cfsm	11.7	9.08	12.8	5.96	12.8	9.32	9.81	7.27	4.78	2.44	0.475	0.310
In.	13.50	10.13	14.77	6.87	13.83	10.74	10.95	8.38	5.34	2.81	0.55	0.35
Ac-ft	79,210	59,430	86,660	40,320	81,160	63,030	64,230	49,190	31,310	16,500	3,210	2,030

Calendar year 1951: Max 5,520 Min 23 Mean 826 Cfsm 7.51 In. 101.87 Ac-ft 597,700
Water year 1951-52: Max 5,520 Min 27 Mean 794 Cfsm 7.22 In. 98.22 Ac-ft 576,300

Peak discharge (base, 8,200 cfs).--No peak above base.
* Discharge measurement made on this day.

North Santiam River at Mehama, Oreg.

Location.--Lat 44°47'20", long. 122°37'00", in NW¼ sec. 18, T. 9 S., R. 2 E., on right bank 300 ft downstream from highway bridge and 0.5 mile downstream from Little North Santiam River.

Drainage area.--665 sq mi.

Records available.--July 1905 to March 1907, October 1910 to September 1914, September 1921 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 601.78 ft above mean sea level, datum of 1929. Prior to June 15, 1933, staff gage at site 100 ft upstream at same datum.

Average discharge.--36 years (1905-6, 1910-14, 1921-52), 3,251 cfs.

Extremes.--1912-13: Maximum discharge during water year, 34,200 cfs Mar. 30 (gage height, 12.0 ft); minimum daily, 660 cfs Oct. 16.

1913-14: Maximum discharge observed during water year, 18,400 cfs Oct. 7 (gage height, 8.8 ft); minimum daily, 660 cfs Aug. 22 to Sept. 6.

1951-52: Maximum discharge during water year, 23,300 cfs Oct. 23 (gage height, 8.89 ft); minimum, 458 cfs Sept. 18, 19; minimum daily, 650 cfs Sept. 19.

1905-7, 1910-14, 1921-52: Maximum discharge, 76,600 cfs Dec. 28, 1945 (gage height, 15.37 ft), from rating curve extended above 36,000 cfs on basis of slope-area determination of peak flow; maximum gage height, 17.5 ft Nov. 20, 1921, from graph based on gage readings, and Jan. 6, 1923, from floodmark, at site then in use; minimum discharge, 400 cfs Sept. 29, Oct. 13, 1934; minimum daily, 420 cfs Sept. 18, 1924.

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede figures published in water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
594.....	1924	Dec. 6, 1923	31,500	11.5
769, 1044...	1934	Dec. 22, 1933	39,200	12.70
794, 1044...	1935	Dec. 20, 1934	34,100	11.7
814, 1044...	1936	Jan. 4, 1936	30,600	10.98
834, 1044...	1937	Apr. 14, 1937	30,100	10.89
864, 1044...	1938	Jan. 22, 1938	31,600	11.17
964, 1044...	1942	Dec. 2, 1941	26,600	10.18

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Slight regulation at low flow by milldam at Mill City. No diversion above station.

Revisions (water years).--W 634: Drainage area. W 739: 1922-23(M). W 1044: 1943. Revised figures of discharge, in cubic feet per second, for water years 1906, 1911-14, 1926, and 1937, superseding those published in Water-Supply Papers 312, 332c, 362c, 370, 394, 634, and 834, are given herein. Complete tables of daily discharges are given for water years 1913-14, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge
1906		1911-Con.		1912-Con.	
Mar. 25	2,510	Mar. 27	5,200	June 17	4,500
1911		1912		1926	
Mar. 5	2,100	June 6	4,300	Sept. 3	1,000
7	2,500	7	4,500		
8	3,080	12	3,500	1937	
24	7,500	14	7,000	May 1	4,140
25	7,000	15	6,400		
26	5,500	16	5,000		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
March 1906.....	115,540	7,310	1,980	3,730	5.61	6.47	229,000
Water year 1905-6.....	1,143,080	17,100	700	3,130	4.71	63.92	2,270,000
Calendar year 1906....	1,428,000	36,200	700	3,910	5.88	79.82	2,830,000
March 1911.....	123,380	7,500	1,440	3,980	5.98	6.89	245,000
Water year 1910-11....	1,115,490	21,700	660	3,060	4.60	62.36	2,210,000
June 1912.....	119,340	7,000	2,400	3,980	5.98	6.67	237,000
Water year 1911-12....	1,522,280	37,200	660	4,160	6.26	85.02	3,020,000
September 1926.....	33,783	2,800	580	1,130	1.70	1.90	67,200
Water year 1925-26....	833,087	30,000	480	2,280	3.43	46.62	1,650,000
May 1937.....	200,630	10,800	3,820	6,472	9.73	11.22	397,900
Water year 1936-37....	1,046,972	30,400	468	2,868	4.31	58.54	2,077,000
Calendar year 1937....	1,386,281	30,400	628	3,798	5.71	77.53	2,750,000

North Santiam River at Mehama, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	920	2,560	2,720	9,420	2,900	1,700	14,900	4,200	6,600	2,900	1,320	920
2	830	2,400	3,300	9,420	2,560	1,700	14,100	3,700	7,000	3,280	1,210	920
3	830	2,400	7,000	8,440	2,560	2,900	12,600	3,700	6,800	3,900	1,210	1,960
4	830	5,000	6,000	7,800	2,560	3,900	11,200	3,800	5,800	5,000	1,110	1,440
5	740	9,080	4,500	6,600	2,560	4,340	10,500	3,700	5,000	3,900	1,110	1,210
6	740	11,200	4,000	6,320	2,560	4,340	9,080	6,600	4,560	3,280	1,110	1,110
7	740	13,700	3,500	5,760	2,560	4,560	7,800	6,900	4,560	3,280	1,110	1,110
8	740	11,900	3,500	5,240	2,400	4,780	7,200	8,000	4,340	2,900	1,110	1,110
9	740	14,900	3,280	5,000	2,100	5,240	6,320	8,120	4,340	2,900	1,110	1,210
10	740	14,900	3,280	4,560	2,100	5,000	6,900	8,760	4,120	2,560	1,110	1,110
11	740	14,900	3,280	4,340	1,960	5,000	6,900	8,440	3,900	2,400	1,110	1,010
12	740	26,200	2,900	4,340	2,560	4,560	7,200	7,800	3,900	2,100	1,110	1,010
13	740	19,300	3,280	4,560	2,900	4,560	7,200	7,200	3,900	2,100	1,110	920
14	740	12,600	3,900	4,560	4,560	4,120	6,320	6,900	3,680	1,960	1,110	920
15	740	7,800	3,680	4,780	6,320	4,120	6,040	6,900	3,680	1,960	1,110	920
16	660	6,900	4,120	4,780	6,320	3,900	6,040	6,320	3,300	1,820	1,010	920
17	830	5,760	4,560	4,340	10,500	3,680	6,320	6,040	3,200	1,680	1,010	920
18	1,210	5,000	10,000	4,120	8,440	4,500	6,600	6,320	3,200	1,680	1,010	920
19	2,720	4,560	7,500	4,340	7,000	4,500	6,320	6,040	3,500	1,680	1,010	920
20	1,960	4,560	6,000	4,340	6,000	3,700	6,320	6,040	3,500	1,820	1,010	920
21	2,900	4,120	5,000	4,340	5,000	3,500	6,040	6,320	4,000	1,820	1,010	920
22	6,600	3,900	5,760	4,560	4,000	2,900	6,040	6,320	5,000	1,680	1,010	920
23	4,560	3,900	3,900	5,000	3,600	2,900	5,760	6,900	9,760	1,680	1,010	920
24	4,120	3,480	3,500	5,760	3,200	2,900	6,320	7,500	9,420	1,680	920	920
25	3,900	3,480	3,000	5,000	2,900	2,500	6,320	7,400	7,800	1,560	920	830
26	3,280	3,480	2,800	4,780	3,300	2,200	6,600	7,200	6,900	1,560	830	830
27	2,900	3,080	2,800	4,340	3,300	2,200	5,760	7,400	5,000	1,440	830	830
28	2,900	3,080	2,800	3,900	2,900	5,000	5,240	6,040	3,900	1,440	830	830
29	3,280	3,080	2,900	3,900	-	14,900	5,240	5,760	3,080	1,440	920	830
30	2,900	2,900	14,900	3,480	-	30,200	5,000	5,760	3,080	1,320	920	1,010
31	2,560	-	10,500	3,480	-	16,600	-	5,800	-	1,320	920	-
Total	58,830	230,120	148,160	161,600	109,620	166,900	224,180	197,880	146,820	70,040	32,230	30,320
Mean	1,900	7,670	4,780	5,210	3,920	5,380	7,470	6,380	4,890	2,260	1,040	1,010
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	117,000	456,000	294,000	320,000	218,000	331,000	444,000	392,000	291,000	139,000	64,000	60,100

Calendar year 1912: Max 37,200 Min 660 Mean 4,550 Cfsm 6.84 In. 92.92 Ac-ft 3,300,000
Water year 1912-13: Max 30,200 Min 660 Mean 4,320 Cfsm 6.50 In. 88.09 Ac-ft 3,130,000

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	830	1,320	5,500	3,300	4,340	13,000	3,280	2,800	1,820	1,440	830	660
2	830	1,320	4,000	3,800	3,900	11,200	2,800	2,800	1,820	1,320	830	660
3	830	1,210	3,500	4,500	3,900	9,760	3,000	2,800	2,100	1,320	830	660
4	830	4,000	3,000	6,800	3,480	9,420	5,000	3,000	2,250	1,320	830	660
5	830	6,000	2,900	10,000	3,200	9,080	5,600	3,280	2,400	1,210	830	660
6	1,010	4,500	2,700	9,000	2,900	9,080	4,560	2,600	2,400	1,210	785	660
7	18,400	4,000	2,500	8,400	2,700	9,500	3,900	2,500	3,080	1,210	785	740
8	9,420	4,000	2,500	8,000	2,700	9,000	4,400	2,500	2,900	1,110	740	740
9	6,040	2,800	2,500	6,400	2,500	7,500	5,000	2,500	2,560	1,110	740	740
10	3,280	2,800	2,500	6,000	3,300	7,000	6,600	2,500	2,560	1,110	740	740
11	3,280	2,600	2,500	5,600	3,900	6,320	6,040	2,720	2,250	1,110	740	740
12	4,120	2,400	2,400	5,000	4,120	5,760	5,500	2,720	2,250	1,110	740	740
13	3,900	2,200	2,400	3,680	4,120	5,760	5,240	2,560	2,100	1,010	740	740
14	3,680	2,100	2,200	3,480	3,900	5,500	7,200	2,700	1,960	1,010	740	875
15	3,900	2,100	2,200	3,680	3,600	5,240	12,300	2,700	1,960	1,010	740	3,480
16	3,900	1,900	2,100	3,500	3,500	5,000	9,420	2,720	1,820	1,010	740	2,900
17	3,480	1,900	2,000	3,500	3,400	5,000	7,800	2,560	1,680	1,010	740	3,680
18	3,280	1,900	1,900	3,500	3,400	4,560	6,320	2,400	1,680	1,010	740	2,560
19	3,080	1,900	1,900	3,100	3,700	4,560	5,760	2,400	1,560	1,010	740	5,000
20	2,900	1,900	1,900	2,900	4,000	4,120	5,100	2,250	1,560	1,010	740	4,340
21	2,560	2,200	2,000	9,420	4,300	4,120	4,500	2,100	1,680	920	740	2,560
22	2,250	3,900	1,900	14,900	5,000	3,900	4,000	2,100	1,820	920	660	2,250
23	2,100	10,500	1,900	11,900	6,000	3,600	4,200	1,960	1,560	920	660	1,680
24	1,820	6,320	1,800	10,500	8,000	3,400	3,700	2,100	1,560	920	660	1,440
25	1,560	5,000	1,800	9,080	7,000	3,200	3,800	1,960	1,560	920	660	1,440
26	1,440	4,560	2,000	8,120	6,400	3,200	3,500	2,100	1,560	830	660	1,440
27	1,320	4,560	2,800	6,500	10,100	3,000	3,200	2,100	1,440	830	660	1,380
28	1,320	4,560	2,400	5,500	11,200	2,900	3,200	1,820	1,440	830	660	1,380
29	1,320	7,800	2,000	5,000	-	2,800	2,800	1,820	1,440	830	660	1,210
30	1,320	6,900	2,100	4,800	-	2,800	3,000	1,820	1,440	830	660	1,110
31	1,440	-	2,700	4,600	-	3,100	-	1,680	-	830	660	-
Total	96,270	109,150	76,500	194,460	128,560	182,380	150,720	74,570	58,210	32,240	22,680	47,865
Mean	3,110	3,640	2,470	6,270	4,590	5,880	5,020	2,410	1,940	1,040	732	1,600
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	191,000	217,000	152,000	386,000	255,000	362,000	299,000	148,000	115,000	64,000	45,000	95,200

Calendar year 1913: Max 30,200 Min 830 Mean 3,890 Cfsm 5.85 In. 79.45 Ac-ft 2,820,000
Water year 1913-14: Max 18,400 Min 660 Mean 3,220 Cfsm 4.84 In. 65.63 Ac-ft 2,330,000

North Santiam River at Mehama, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.7	650	5.0	6,200
2.0	900	7.0	13,200
3.0	2,070	8.1	18,800
4.0	3,800		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,380	1,920	15,800	3,100	13,300	a2,900	4,780	5,340	a3,400	5,000	1,030	762
2	4,520	1,760	10,700	2,740	14,000	2,660	4,690	4,540	a3,200	3,910	990	762
3	7,360	1,740	10,000	2,580	13,600	2,530	4,710	4,020	a3,400	3,240	990	754
4	3,670	1,840	10,400	2,500	18,400	2,630	5,660	3,570	a3,600	2,880	981	762
5	*2,210	1,680	12,000	2,360	12,800	a2,500	6,040	3,280	a3,800	2,660	972	786
6	1,680	1,570	7,580	2,250	8,800	a2,400	7,920	a3,100	a3,600	2,410	945	810
7	1,420	1,500	5,560	2,130	*6,800	a2,300	7,850	a3,200	a3,400	2,210	936	786
8	1,210	1,450	4,520	2,060	5,740	2,250	6,280	a4,200	a3,000	2,060	936	802
9	1,090	1,410	3,780	2,180	5,190	2,640	5,360	a4,200	a3,200	2,030	972	900
10	1,020	1,830	3,370	2,630	4,710	3,430	5,000	a4,200	*3,100	1,940	954	819
11	1,060	3,670	3,390	2,350	4,750	3,050	4,970	a4,800	2,780	1,840	927	846
12	2,270	9,260	3,510	2,180	4,540	2,730	4,760	a4,800	2,470	1,800	918	*819
13	2,350	8,160	3,410	2,060	3,980	2,560	5,220	a5,500	2,210	1,720	900	786
14	3,850	6,630	3,090	2,040	3,630	2,400	5,660	a6,000	2,530	1,670	900	770
15	4,130	5,090	2,810	1,890	3,670	2,270	5,190	a5,500	3,510	1,600	891	714
16	2,900	*3,930	3,200	1,790	3,610	2,220	4,850	a5,000	2,780	1,530	882	682
17	2,350	3,280	3,180	1,710	3,330	2,210	5,000	a5,500	2,530	1,470	873	802
18	2,080	2,870	5,870	1,670	3,070	2,350	6,520	a6,000	2,530	1,370	864	698
19	3,280	2,690	5,440	1,660	2,940	*2,250	7,680	a6,000	2,530	1,330	846	650
20	6,600	2,690	4,060	1,720	2,680	2,140	5,940	a6,000	2,560	1,290	837	810
21	5,220	2,600	4,820	1,670	2,480	2,060	4,950	a5,500	2,520	1,280	828	738
22	5,990	2,420	10,100	1,670	2,440	2,030	4,640	a5,000	2,350	*1,240	819	714
23	17,500	2,270	6,280	1,800	2,690	2,470	4,590	a4,800	2,220	1,200	819	706
24	10,200	2,100	4,760	2,350	2,600	10,900	5,020	a5,000	1,920	1,200	810	698
25	6,280	2,150	3,870	2,690	2,740	11,400	6,040	a5,000	1,380	1,170	819	698
26	4,540	5,980	3,410	2,740	3,160	9,780	6,660	a4,800	1,510	1,130	810	698
27	3,550	5,740	3,300	3,010	3,350	8,220	6,570	a4,600	1,930	1,110	802	698
28	2,990	7,850	3,280	2,920	3,220	7,780	7,040	a5,000	2,310	1,090	794	698
29	2,630	9,400	5,140	3,010	3,200	6,360	5,640	a4,600	6,630	1,080	786	690
30	2,340	10,900	4,490	5,600	-	5,740	*5,170	a4,000	6,800	1,050	786	682
31	2,100	-	3,610	10,800	-	5,820	-	a3,800	-	1,040	778	-
Total	120,770	116,380	174,730	81,860	165,420	122,980	169,400	146,850	89,700	56,530	27,395	22,540
Mean	3,896	3,879	5,636	2,641	5,704	3,967	5,647	4,737	2,990	1,824	884	751
Cfsm	5.86	5.83	8.48	3.97	8.58	5.97	8.49	7.12	4.50	2.74	1.33	1.13
In.	6.75	6.51	9.77	4.58	9.25	6.88	9.47	8.21	5.02	3.16	1.53	1.26
Ac-ft	239,500	230,800	346,600	162,400	328,100	243,900	336,000	291,300	177,900	112,100	54,340	44,710

Calendar year 1951: Max 19,200 Min 650 Mean 3,779 Cfsm 5.68 In. 77.14 Ac-ft 2,736,000
Water year 1951-52: Max 18,400 Min 650 Mean 3,537 Cfsm 5.32 In. 72.39 Ac-ft 2,568,000

Peak discharge (base, 19,000 cfs).--Oct. 23 (10 a.m.) 23,300 cfs (8.89 ft); Feb. 3 (1 to 2 a.m.) 19,100 cfs (8.16 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station above Mayflower Creek near Detroit and Little North Santiam River near Mehama and recorded range in stage when available.

South Santiam River below Cascadia, Oreg.

Location.--Lat 44°23'30", long. 122°30'35", in SE¼ sec. 36, T. 13 S., R. 2 E., on right bank 100 ft downstream from bridge at Cascadia ranger station, half a mile downstream from Tollgate Creek, half a mile upstream from Deer Creek, and 1½ miles southwest of Cascadia. All records computed are for site at gaging cable 0.7 mile upstream, above Tollgate Creek.

Drainage area.--174 sq mi at gaging cable.

Records available.--September 1935 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 759.38 ft above mean sea level, datum of 1929. Prior to Nov. 1, 1935, staff gage at same site and datum.

Average discharge.--17 years, 773 cfs.

Extremes.--Maximum discharge during year, 7,750 cfs Oct. 23 (gage height, 10.28 ft); minimum daily, 54 cfs Sept. 30.
1935-52: Maximum discharge, 23,400 cfs Dec. 28, 1945 (gage height, 18.65 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 23 cfs Dec. 1, 2, 1936 (gage height, 0.98 ft).

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 of U. S. Forest Service.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
2.1	154	5.0	1,670	1.4	48	3.0	460
2.5	257	7.0	3,420	1.7	92	4.0	970
3.0	440	9.0	5,890	2.0	150	6.0	2,470
4.0	940			2.5	280	8.0	4,570

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	488	372	4,870	838	a4,500	730	1,350	1,220	575	1,380	120	68
2	915	332	2,870	715	a4,000	650	1,340	1,010	540	994	116	66
3	*1,600	314	3,020	650	a4,800	645	1,310	862	560	785	112	65
4	730	311	3,530	605	a5,800	665	1,270	750	590	675	118	65
5	436	274	3,450	560	*3,420	620	1,630	690	650	575	110	73
6	300	251	2,070	528	2,320	605	2,000	665	630	496	106	72
7	242	239	1,430	484	1,830	570	1,880	685	524	444	103	72
8	200	222	1,090	448	1,550	528	1,480	1,340	492	400	103	96
9	176	219	874	560	1,370	595	1,220	1,200	508	370	105	*161
10	158	372	796	820	1,240	886	1,140	1,100	*524	338	106	a110
11	169	968	880	665	1,210	802	1,100	1,130	496	310	105	a90
12	512	2,560	970	552	1,130	700	1,050	1,090	440	292	101	a80
13	456	2,260	928	492	946	630	1,160	1,200	380	274	99	a76
14	722	*1,990	796	472	946	560	1,250	1,230	464	253	97	a72
15	994	1,410	695	428	1,080	508	1,120	1,150	555	239	96	a70
16	740	1,030	772	a390	1,130	484	1,030	1,090	456	225	94	a68
17	560	802	*760	a360	976	480	1,100	1,180	432	214	92	a66
18	512	680	1,990	a340	850	*488	1,480	1,230	432	201	90	a64
19	760	620	1,730	a340	755	468	1,650	1,220	420	196	87	a62
20	1,700	585	1,150	a370	675	444	1,260	1,220	428	184	86	a62
21	1,820	548	1,390	a350	605	440	1,040	1,200	496	177	84	a60
22	2,370	496	4,030	a350	575	440	982	1,010	408	170	81	a60
23	5,500	448	2,170	a400	755	848	940	970	404	163	79	a58
24	2,780	420	1,490	a800	790	*4,330	1,020	1,000	480	159	81	a58
25	1,670	428	1,130	a800	892	3,580	1,260	988	432	*154	82	a56
26	1,120	970	1,020	a850	1,110	2,800	1,310	910	400	150	79	a56
27	820	1,170	1,040	a900	1,090	2,290	1,350	916	400	144	76	a55
28	670	2,010	1,080	a950	958	2,080	1,500	958	670	138	75	a55
29	565	3,680	1,850	a1,000	838	1,720	*1,170	908	3,020	132	73	a55
30	492	4,590	1,500	a1,800	-	1,640	1,150	705	2,290	128	70	a54
31	432	-	1,080	a3,300	-	1,670	-	655	-	124	69	-
Total	30,609	30,571	52,451	21,917	48,141	33,896	38,542	31,482	19,096	10,484	2,895	2,125
Mean	987	1,019	1,692	707	1,660	1,093	1,285	1,016	637	338	93.4	70.8
Cfsm	5.67	5.86	9.72	4.06	9.54	6.28	7.39	5.84	3.66	1.94	0.537	0.407
In.	6.54	6.53	11.21	4.68	10.29	7.24	8.24	6.73	4.08	2.24	0.62	0.45
Ac-ft	60,710	60,640	104,000	43,470	95,490	67,230	76,450	62,440	37,880	20,790	5,740	4,220

Calendar year 1951: Max 6,310 Min 54 Mean 911 Cfsm 5.24 In. 71.03 Ac-ft 659,200
Water year 1951-52: Max 5,800 Min 54 Mean 880 Cfsm 5.06 In. 68.85 Ac-ft 639,000

Peak discharge (base, 5,300 cfs).--Oct. 23 (8:30 a.m.) 7,750 cfs (10.28 ft); Dec. 1 (7 a.m.) 6,110 cfs (9.16 ft); Dec. 22 (3:30 a.m.) 5,650 cfs (8.83 ft); Feb. 3 (about 10 p.m.) 6,720 cfs (9.59 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for Middle Santiam River at mouth near Foster.

Middle Santiam River at mouth, near Foster, Oreg.

Location.--Lat 44°25'25", long. 122°37'20", in NE¼SE¼ sec. 24, T. 13 S., R. 1 E., on right bank half a mile upstream from mouth and 2½ miles northeast of Foster.

Drainage area.--287 sq mi.

Records available.--January 1951 to September 1952.

Gage.--Staff gage read twice daily. Datum of gage is 562.14 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Extremes.--Maximum discharge during year, 16,900 cfs Oct. 23 (gage height, 14.3 ft, from graph based on gage readings); minimum, 94 cfs Sept. 30 (gage height, 0.99 ft).
1951-52: Maximum discharge, that of Oct. 23, 1951; minimum, 72 cfs Sept. 22-24, 1951 (gage height, 0.77 ft).
During flood of Dec. 28, 1945, flow of 41,800 cfs occurred at former station upstream where drainage area is 6 percent smaller.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.9	85	6.0	1,560
2.0	219	7.0	2,520
3.0	373	10.0	6,690
4.0	600	13.0	13,300
5.0	960		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,380	880	8,390	1,720	9,460	1,580	2,740	2,220	924	1,700	222	125
2	3,250	758	4,870	1,480	8,390	1,340	2,730	1,860	884	1,270	213	120
3	4,590	734	5,430	1,330	10,000	1,330	2,730	1,570	890	1,050	209	117
4	1,790	768	5,730	1,270	12,300	1,400	2,520	1,370	892	904	205	118
5	1,010	654	6,590	1,160	7,600	1,300	3,430	1,270	969	772	200	129
6	651	600	4,110	1,090	5,010	1,240	4,370	1,180	956	695	195	135
7	512	558	2,990	996	3,810	1,160	3,930	1,200	790	606	192	128
8	414	520	2,230	944	3,290	1,120	2,970	1,900	730	555	188	166
9	353	495	1,880	1,000	2,970	1,260	2,450	1,720	744	518	187	*280
10	318	924	1,690	1,290	2,640	2,200	2,320	1,590	751	485	187	192
11	339	1,900	1,860	1,090	2,820	1,800	2,370	1,830	730	458	179	153
12	1,330	5,880	2,060	982	2,520	1,550	2,190	1,720	651	426	175	140
13	1,250	5,050	1,940	912	2,140	1,370	2,410	1,950	555	400	171	136
14	2,900	4,870	1,660	888	1,990	1,250	2,680	2,110	645	383	166	129
15	2,750	2,970	1,460	790	2,270	1,170	2,370	1,970	1,000	363	165	124
16	1,700	2,210	1,840	730	2,280	1,110	2,150	1,810	744	346	163	120
17	1,240	1,810	1,660	684	1,950	1,060	2,290	1,990	660	332	161	116
18	1,150	1,540	3,900	654	1,740	1,120	3,110	2,030	642	322	158	114
19	1,890	1,470	3,250	645	1,580	1,080	3,380	2,000	603	316	157	112
20	3,900	1,400	2,310	751	1,470	1,020	2,520	1,950	582	307	152	110
21	3,380	1,380	2,270	667	1,270	964	2,070	1,940	688	298	150	107
22	4,450	1,220	7,410	660	1,200	932	1,900	1,720	570	289	146	103
23	12,000	1,120	4,030	840	1,440	2,060	1,830	1,560	525	283	144	102
24	6,350	1,030	2,870	1,400	1,360	7,600	2,020	1,500	624	276	145	101
25	3,680	1,100	2,220	1,720	1,460	6,420	2,480	1,570	555	*268	149	100
26	2,360	2,990	1,940	1,720	1,900	5,220	2,560	1,400	505	259	146	99
27	1,940	2,750	1,790	1,900	2,040	4,480	2,750	1,390	505	253	140	97
28	1,540	3,930	1,940	1,770	1,900	4,370	2,850	1,500	674	241	138	95
29	1,280	5,730	3,900	1,910	1,720	3,390	2,130	1,300	4,310	237	133	95
30	1,120	7,220	2,970	4,000	-	3,250	2,010	1,080	3,120	232	128	94
31	1,000	-	2,080	7,410	-	3,650	-	1,060	-	226	127	-
Total	71,817	64,461	99,270	44,403	100,520	68,796	78,260	51,260	27,418	15,070	5,191	3,757
Mean	2,317	2,149	3,202	1,432	3,466	2,219	2,609	1,654	914	486	167	125
Cfsm	8.07	7.49	11.2	4.99	12.1	7.73	9.09	5.76	3.18	1.69	0.582	0.436
In.	9.31	8.35	12.86	5.75	13.03	8.91	10.14	6.64	3.55	1.95	0.67	0.49
Ac-ft	142,400	127,900	196,900	88,070	199,400	136,500	155,200	101,700	54,380	29,890	10,300	7,452

Calendar year 1951: Max 12,500 Min 72 Mean 1,811 Cfsm 6.31 In. 85.63 Ac-ft 1,311,000
Water year 1951-52: Max 12,300 Min 94 Mean 1,722 Cfsm 6.00 In. 81.65 Ac-ft 1,250,000

* Discharge measurement made on this day.

Wiley Creek near Foster, Oreg.

Location.--Lat 44°22'20", long. 122°37'20", in NE¼ sec. 12, T. 14 S., R. 1 E., on right bank 0.4 mile downstream from Little Wiley Creek and 3½ miles southeast of Foster.

Drainage area.--52 sq mi, approximately.

Records available.--October 1947 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 718.08 ft above mean sea level (Corps of Engineers benchmark).

Average discharge.--5 years, 240 cfs.

Extremes.--Maximum discharge during year, 2,060 cfs Dec. 4 (gage height, 4.82 ft); minimum, 10 cfs Sept. 30 (gage height, 0.82 ft).
1947-52: Maximum discharge, 5,410 cfs Jan. 7, 1948 (gage height, 7.52 ft); minimum, 6.9 cfs Sept. 4, 5, 1949.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 2-8)

0.8	10	2.0	230
1.0	23	3.0	680
1.2	44	4.0	1,350
1.5	92	5.0	2,240

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	147	99	1,320	341	1,500	269	346	202	57	310	26	15
2	*310	88	814	248	1,370	234	354	171	54	220	26	14
3	431	83	1,100	220	1,400	234	336	149	52	171	24	14
4	198	81	1,380	216	1,490	251	328	132	50	139	23	14
5	119	72	1,300	202	*970	230	390	124	48	119	22	20
6	83	68	*778	195	695	237	440	119	50	105	22	16
7	68	64	503	174	550	216	382	122	48	90	22	16
8	57	61	386	157	472	192	301	189	46	81	22	26
9	48	81	301	195	413	216	254	174	44	76	22	*39
10	43	129	265	364	364	350	240	157	*48	71	21	21
11	48	357	254	273	350	297	226	152	61	66	20	17
12	132	720	262	212	314	251	216	142	61	63	20	15
13	105	870	248	180	273	220	237	139	51	58	20	15
14	162	*615	216	171	277	192	251	139	85	54	19	14
15	240	440	186	149	314	174	216	134	101	50	19	13
16	174	318	206	132	346	162	202	122	74	47	19	12
17	132	248	*209	122	310	155	206	122	61	45	18	12
18	124	209	708	116	273	*165	244	119	55	43	18	12
19	177	186	570	114	248	157	254	114	50	42	17	12
20	372	162	386	155	220	149	198	114	54	39	17	11
21	422	155	452	134	192	152	171	114	66	39	17	11
22	472	134	928	139	183	157	157	96	52	37	17	11
23	1,200	122	590	209	328	289	149	90	55	36	17	11
24	690	112	426	521	346	*1,570	160	85	66	34	17	11
25	413	119	332	454	359	1,050	183	83	60	33	18	11
26	289	281	332	408	472	766	183	74	55	32	17	11
27	220	332	359	408	426	615	183	72	60	30	17	11
28	180	530	364	386	368	540	*209	69	119	*30	16	11
29	152	1,090	660	413	314	436	165	66	705	28	16	11
30	129	1,220	540	748	-	400	186	60	508	28	15	10
31	114	-	386	1,070	-	408	-	60	-	27	15	-
Total	7,451	8,826	16,761	8,826	15,137	10,734	7,367	3,705	2,896	2,243	599	437
Mean	240	294	541	285	522	346	246	120	96.5	72.4	19.3	14.6
Cfsm	4.62	5.65	10.4	5.48	10.0	6.65	4.73	2.31	1.86	1.39	0.371	0.281
In.	5.33	6.31	11.99	6.31	10.83	7.68	5.27	2.65	2.07	1.60	0.43	0.31
Ac-ft	14,780	17,510	33,240	17,510	30,020	21,290	14,610	7,350	5,740	4,450	1,190	867

Calendar year 1951: Max 1,820 Min 7.4 Mean 240 Cfsm 4.62 In. 62.55 Ac-ft 173,500
Water year 1951-52: Max 1,570 Min 10 Mean 232 Cfsm 4.46 In. 60.78 Ac-ft 168,600

Peak discharge (base, 1,400 cfs).--Oct. 23 (10 a.m.) 1,710 cfs (4.43 ft); Nov. 29 (11:30 p.m.) 1,720 cfs (4.45 ft); Dec. 4 (8:30 p.m.) 2,060 cfs (4.82 ft); Feb. 1 (7 a.m.) 1,680 cfs (4.35 ft); Feb. 3 (7 p.m.) 1,800 cfs (4.39 ft); Mar. 24 (6 a.m.) 1,920 cfs (4.67 ft).
* Discharge measurement made on this day.

South Santiam River at Waterloo, Oreg.

Location.--Lat 44°29'55", long. 122°49'20", in NW¼ sec. 28, T. 12 S., R. 1 W., on left bank 600 ft downstream from bridge at Waterloo and 2 miles upstream from Hamilton Creek.
Drainage area.--640 sq mi, approximately.
Records available.--July 1905 to March 1907, October 1910 to December 1911, July 1923 to September 1952. January to December 1911, gage heights only.
Gage.--Water-stage recorder. Datum of gage is 370.39 ft above mean sea level, datum of 1929. Prior to Dec. 31, 1911, staff gage at site half a mile downstream at datum about 5.0 ft lower. July 1, 1923, to Nov. 12, 1934, staff gage at present site and datum.
Average discharge.--30 years (1905-6, 1923-52), 2,762 cfs.
Extremes.--Maximum discharge during year, 27,900 cfs Oct. 23 (gage height, 12.45 ft); minimum, 157 cfs Sept. 30 (gage height, 1.99 ft).
1905-7, 1910-11, 1923-52: Maximum discharge, 74,200 cfs Dec. 28, 1945 (gage height, 22.85 ft), from rating curve extended above 37,000 cfs; minimum, 96 cfs Sept. 1, 2, 1940.
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
594.....	1924	Dec. 6, 1923	36,000	14.0
614.....	1925	Nov. 22, 1924	29,100	12.4
634.....	1926	Feb. 6, 1926	33,800	13.5
675.....	1928	Nov. 25, 1927	38,400	15.0

Remarks.--Records good. No diversion or regulation above station. Some diurnal fluctuation caused by numerous log ponds above station.
Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.
Revisions.--Revised figures of discharge, in cubic feet per second, for water years 1907, 1924-30, and 1932, superseding figures published in Water-Supply Papers 370, 594, 614, 634, 654, 674, 694, 709, and 739, are given herein. Complete tables of daily discharges are given for water years 1924-26, 1929, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge
1906		1927		1929	
Oct. 19	4,000	Mar. 2	5,400	Oct. 22	155
20	2,350	3	4,700	23	155
		4	4,000	24	155
1907		5	3,600	25	155
Feb. 6	30,000	6	3,400	26	155
7	20,000	7	3,000	27	180
8	15,000	13	6,000	28	220
		14	5,600	29	190
1926		15	5,000	30	170
Oct. 3	2,420	16	4,500	31	160
9	2,960	17	4,500		
12	1,400	18	4,500	1930	
13	1,600	19	4,200	Jan. 1	2,600
14	1,400	23	4,000	2	3,500
15	1,300	24	4,200	3	2,800
16	1,600	25	3,600	4	2,200
17	2,500	Nov. 9	2,700	22	1,000
18	1,800	10	2,600	23	1,000
19	1,500	14	4,500	24	950
20	1,300	15	9,000	25	950
21	1,200	16	15,000	26	900
26	3,900	17	10,500	27	900
27	5,180	18	7,500	28	900
28	3,900	19	5,000	29	1,500
29	2,600	20	6,000	30	2,300
Nov. 2	1,000	21	7,500	31	4,000
3	900	22	6,000	Feb. 1	7,000
4	800	23	6,200	2	11,000
5	730	24	10,000	3	8,000
6	730	25	33,000	4	6,500
7	1,500	26	25,000	5	10,000
8	1,200	27	17,000	6	8,800
9	1,000	28	23,000	7	7,000
10	900	29	18,000	8	10,000
11	800			9	7,500
13	3,700	1928		10	8,200
14	3,900	Feb. 12	2,000		
15	5,650	13	1,900	1932	
16	6,900	14	1,700	May 8	4,000
17	4,960	15	1,600	9	4,200
18	4,300	16	1,500	10	4,800
19	8,150	17	1,500	11	4,500
20	17,000	18	1,400	12	4,700
21	10,200	19	1,300	13	4,500
22	6,400	20	1,300	14	3,700
23	5,400	21	1,300	15	3,100
24	4,520	22	1,400	22	3,500
25	7,650	23	1,600		
26	7,650				
27	6,900				

South Santiam River at Waterloo, Oreg.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1907, 1924-30, 1932

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
October 1906	5,780	320	1,410	2.20	2.54	86,700
Calendar year 1906	36,900	192	3,470	5.42	73.46	2,510,000
February 1907	41,500	4,500	11,600	18.1	18.85	644,000
March	9,500	2,680	3,840	6.00	6.92	236,000
October 1926	5,180	800	1,820	2.84	3.27	112,000
November	30,000	730	5,640	8.81	9.83	336,000
Calendar year 1926	30,000	135	2,410	3.77	51.20	1,750,000
March 1927	6,000	2,480	3,910	6.11	7.04	240,000
Water year 1926-27	38,500	185	3,430	5.36	72.81	2,490,000
November 1927	33,000	1,060	7,930	12.4	13.83	472,000
Calendar year 1927	38,500	185	3,680	5.75	78.00	2,660,000
February 1928	3,700	1,300	2,010	3.14	3.39	116,000
Water year 1927-28	33,000	126	3,180	4.97	67.57	2,310,000
Calendar year 1928	29,400	126	2,340	3.66	49.65	1,700,000
October 1929	220	126	151	.236	.27	9,280
Calendar year 1929	21,100	106	2,230	3.48	47.32	1,620,000
January 1930	4,000	900	1,560	2.44	2.81	95,900
February	18,600	2,880	7,450	11.6	12.08	414,000
Water year 1929-30	21,100	106	1,800	2.81	38.18	1,300,000
Calendar year 1930	18,600	115	1,700	2.66	36.04	1,230,000
May 1932	5,520	2,620	3,940	6.16	7.10	242,000
Water year 1931-32	35,600	126	3,210	5.02	68.11	2,320,000
Calendar year 1932	35,600	129	3,420	5.34	72.74	2,480,000

Discharge, in cubic feet per second, water year October 1923 to September 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	205	430	3,900	4,960	16,200	3,240	2,340	1,420	500	310	165	135
2	205	430	2,670	3,010	12,000	2,670	2,850	1,310	500	282	165	135
3	205	430	2,670	3,350	9,000	2,850	3,920	1,310	500	255	150	135
4	310	430	1,770	2,840	13,500	2,850	3,920	1,310	430	282	150	135
5	430	430	1,650	2,670	12,000	2,500	3,040	1,530	430	282	150	135
6	430	430	8,150	2,840	11,700	2,190	2,850	1,310	430	230	150	135
7	1,550	430	21,800	2,840	11,100	1,770	2,670	1,310	500	205	150	135
8	820	500	8,400	2,670	7,900	1,770	4,160	1,310	500	205	135	135
9	730	430	5,180	3,010	7,200	1,650	3,460	1,310	500	215	165	135
10	500	365	4,960	3,350	6,650	1,650	3,040	1,260	500	215	165	135
11	430	365	2,670	5,650	6,400	1,530	3,040	1,200	430	230	165	135
12	365	310	2,670	4,100	5,900	1,420	3,040	1,200	430	230	165	150
13	310	365	3,710	3,350	5,650	1,420	2,340	1,150	430	230	165	150
14	255	430	4,500	3,010	4,960	1,420	2,340	1,050	430	255	165	135
15	650	430	3,700	2,840	3,010	1,420	2,340	1,000	398	205	165	135
16	3,680	365	3,350	2,670	3,180	1,420	2,040	1,000	365	205	159	135
17	1,550	365	3,180	2,670	3,350	1,310	2,670	820	365	185	165	150
18	1,100	365	3,180	2,340	2,670	1,310	2,670	820	430	165	205	165
19	1,000	365	3,350	2,340	2,500	1,200	3,040	820	1,150	165	310	185
20	820	430	2,670	1,900	2,340	1,200	2,670	775	1,000	135	398	185
21	730	430	2,500	1,900	2,500	1,100	2,340	730	1,000	142	310	185
22	1,200	500	2,040	1,770	2,500	1,310	2,340	730	570	142	205	185
23	1,310	500	1,900	1,900	2,500	1,420	2,040	730	535	142	205	165
24	1,000	9,600	1,770	2,500	2,340	1,530	1,900	650	500	142	165	430
25	820	4,960	2,340	2,340	2,340	1,650	1,770	650	465	142	165	1,310
26	730	2,840	3,710	2,190	3,530	1,530	1,770	650	430	142	165	730
27	650	1,770	3,010	2,670	3,710	1,530	1,530	650	430	150	165	430
28	570	3,010	3,180	2,840	4,100	3,240	1,530	650	430	150	165	205
29	570	7,400	23,400	3,010	3,350	3,040	1,420	570	310	159	150	205
30	570	8,400	10,200	9,600	-	2,850	1,530	570	282	159	150	255
31	500	-	7,400	9,600	-	2,340	-	570	-	165	135	-
Total	24,155	47,505	155,580	102,730	174,080	58,330	76,610	30,365	15,170	6,121	5,587	6,975
Mean	779	1,580	5,020	3,310	6,000	1,880	2,550	980	506	197	180	232
Cfsm	1.22	2.47	7.84	5.17	9.38	2.94	3.98	1.53	0.791	0.308	0.281	0.362
In.	1.41	2.76	9.04	5.96	10.12	3.39	4.44	1.76	0.88	0.36	0.32	0.40
Ac-ft	47,900	94,000	309,000	204,000	345,000	116,000	152,000	60,300	30,100	12,100	11,100	13,800

Calendar year 1923: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1923-24: Max 23,400 Min 135 Mean 1,920 Cfsm 3.00 In. 40.84 Ac-ft 1,400,000

South Santiam River at Waterloo, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1924 to September 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	365	19,000	2,600	d10,000	12,600	2,420	2,820	1,920	2,430	595	215	175
2	430	26,200	2,960	d8,000	14,100	2,250	3,240	2,080	2,430	560	215	170
3	570	14,100	3,500	d9,000	19,000	2,250	3,680	2,250	2,620	560	215	170
4	570	6,900	4,100	d10,000	19,000	2,080	3,020	2,250	2,620	490	215	170
5	430	8,150	6,150	10,800	24,200	2,080	2,620	2,620	2,250	490	215	170
6	430	6,900	7,900	12,000	15,300	d2,000	2,250	2,620	2,250	490	215	310
7	430	9,000	d4,100	9,600	11,100	d1,900	2,250	2,620	2,080	490	215	370
8	500	8,700	3,500	9,000	11,700	d1,900	2,250	2,620	2,080	430	215	310
9	650	7,150	3,320	7,150	10,500	d1,800	2,250	2,430	1,840	430	215	190
10	650	5,650	3,140	6,900	7,400	d1,800	2,250	2,430	1,770	400	215	150
11	650	5,180	d4,000	5,900	6,900	d1,800	2,430	2,430	1,620	400	215	140
12	430	4,520	d5,200	5,900	6,150	1,770	4,160	2,080	1,620	400	207	130
13	430	3,900	d4,500	5,650	4,960	1,770	3,680	2,080	1,480	370	195	120
14	365	3,530	d3,800	5,180	4,300	1,620	3,240	2,250	1,340	370	195	120
15	310	3,530	3,320	4,300	3,700	1,620	2,620	2,430	1,280	340	195	110
16	205	3,530	3,140	4,300	3,320	1,620	3,020	2,430	1,160	340	195	100
17	205	d3,350	3,140	4,300	2,780	d3,000	4,940	2,620	1,100	310	183	100
18	205	d3,530	d2,600	4,100	2,780	d2,500	7,880	2,430	990	310	183	135
19	205	13,800	d2,500	7,650	2,250	2,250	9,830	2,620	940	300	175	175
20	165	19,400	d2,600	7,900	2,420	3,700	8,230	2,620	890	285	175	160
21	165	d12,300	3,140	12,600	2,600	3,320	7,880	3,020	990	285	175	120
22	135	25,400	2,780	9,600	2,960	3,320	6,830	3,460	890	285	175	110
23	165	d15,600	2,600	11,400	3,700	3,140	6,160	3,240	800	285	175	110
24	165	d9,900	2,250	12,300	3,900	3,140	5,220	2,820	755	270	167	110
25	255	d8,700	2,080	d10,000	3,900	3,140	4,420	2,430	710	260	167	100
26	310	d6,650	1,920	d8,000	3,500	3,140	3,920	2,250	670	260	167	100
27	365	d5,900	d2,100	12,600	3,140	3,320	2,620	2,250	630	260	167	100
28	2,040	d4,520	d3,500	12,300	2,250	3,320	2,620	2,250	670	251	175	175
29	2,670	d2,780	d8,000	12,600	-	3,140	2,250	2,620	630	251	175	260
30	3,710	3,500	d20,000	19,000	-	2,960	1,620	2,620	630	238	175	215
31	14,100	-	d15,000	19,400	-	2,780	-	2,430	-	224	175	-
Total	32,275	271,270	139,440	287,430	210,410	76,850	120,200	77,220	42,165	11,229	5,961	4,875
Mean	1,040	9,040	4,500	9,270	7,510	2,480	4,010	2,490	1,410	362	192	162
Cfsm	1.62	14.1	7.03	14.5	11.7	3.88	6.27	3.89	2.20	0.566	0.300	0.253
In.	1.87	15.73	8.10	16.72	12.18	4.47	7.00	4.48	2.46	0.65	0.35	0.28
Ac-ft	64,000	538,000	277,000	570,000	417,000	152,000	239,000	153,000	83,900	22,300	11,800	9,640

Calendar year 1924: Max 26,200 Min 135 Mean 2,510 Cfsm 3.92 In. 53.33 Ac-ft 1,820,000
Water year 1924-25: Max 26,200 Min 100 Mean 3,500 Cfsm 5.47 In. 74.29 Ac-ft 2,540,000

d Doubtful gage-height record; discharge estimated on basis of records for North Santiam River at Mehama and Middle Fork Willamette River at Eula.

Discharge, in cubic feet per second, water year October 1925 to September 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	215	100	2,600	1,920	4,300	7,180	990	800	890	d190	175	525
2	215	100	3,140	1,340	4,100	6,160	990	800	890	d190	175	490
3	215	100	3,900	1,220	4,100	5,220	990	800	845	d190	143	430
4	215	175	3,140	1,220	6,900	4,160	990	1,770	800	d190	167	370
5	195	175	1,620	1,480	13,200	3,920	1,100	2,820	755	d190	135	340
6	195	135	1,340	1,920	27,400	3,460	1,100	2,430	710	d190	135	340
7	175	100	1,100	2,430	19,400	3,020	1,100	2,250	710	175	135	310
8	175	135	890	2,250	15,600	2,820	1,220	1,920	670	175	135	285
9	175	135	710	1,920	11,100	2,820	1,220	1,770	630	175	135	260
10	135	175	d800	1,620	9,300	2,820	1,340	1,620	630	175	135	260
11	135	175	d900	1,480	7,150	2,620	1,340	1,480	560	195	135	251
12	135	2,430	d1,400	1,340	6,900	2,620	1,340	1,340	490	175	135	238
13	135	1,480	d2,100	1,340	6,400	2,620	1,480	1,220	490	135	135	238
14	100	1,220	d3,000	1,340	5,650	2,430	1,220	990	490	135	135	224
15	100	1,480	2,080	1,340	4,960	2,250	1,220	890	525	135	135	370
16	100	1,770	1,340	1,480	4,100	2,250	1,100	890	560	135	135	630
17	135	2,080	1,620	3,460	4,960	2,250	1,100	890	560	135	135	1,840
18	135	2,430	1,770	3,020	4,960	2,080	1,100	890	560	135	490	1,920
19	135	1,920	1,770	3,020	5,180	1,920	990	d1,000	630	135	1,100	1,340
20	135	1,340	1,920	3,020	5,650	1,770	990	d1,000	630	135	800	800
21	135	800	13,200	3,240	6,150	1,620	990	d1,100	630	175	490	630
22	135	630	12,600	3,460	7,400	1,480	990	d1,100	560	215	430	1,040
23	135	430	16,600	3,920	6,400	1,340	990	d1,100	460	215	310	940
24	135	430	14,100	4,160	15,300	1,220	890	d1,100	370	215	285	800
25	135	490	10,500	4,160	14,400	1,220	890	d1,100	310	215	270	755
26	100	d1,000	7,400	3,920	9,600	1,220	800	d1,000	260	195	260	710
27	100	d2,100	4,740	3,460	7,900	1,100	800	d1,000	215	195	430	630
28	100	d1,800	2,600	3,020	6,150	1,100	800	d1,000	215	195	490	560
29	100	1,620	2,250	2,820	-	1,100	800	d1,000	215	195	370	525
30	100	2,250	1,770	5,520	-	990	800	d950	200	183	560	560
31	100	-	1,340	4,940	-	990	-	d900	-	183	560	-
Total	4,430	29,205	124,240	80,780	244,610	77,770	31,670	38,920	16,460	5,471	9,260	18,611
Mean	143	974	4,010	2,610	8,740	2,510	1,060	1,260	549	176	299	620
Cfsm	0.223	1.52	6.27	4.08	13.7	3.92	1.66	1.97	0.858	0.275	0.467	0.969
In.	0.26	1.70	7.23	4.70	14.27	4.52	1.85	2.27	0.96	0.32	0.54	1.08
Ac-ft	8,790	58,000	247,000	160,000	485,000	154,000	63,100	77,500	32,700	10,800	18,400	36,900

Calendar year 1925: Max 24,200 Min 100 Mean 2,720 Cfsm 4.25 In. 57.78 Ac-ft 1,970,000
Water year 1925-26: Max 27,400 Min 100 Mean 1,870 Cfsm 2.92 In. 39.70 Ac-ft 1,350,000

d Doubtful gage-height record; discharge estimated on basis of records for North Santiam River at Mehama and Middle Fork Willamette River at Eula.

South Santiam River at Waterloo, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1928 to September 1929

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	146	342	d1,400	d7,000	3,510	2,620	6,300	4,500	2,170	1,060	310	194
2	146	342	d1,400	d8,800	3,320	2,460	5,840	4,720	2,170	1,440	310	184
3	194	310	d1,200	d9,000	d2,800	2,300	5,840	d6,000	2,010	830	310	184
4	375	310	1,070	d6,700	d2,500	2,300	5,160	d5,400	1,860	715	298	170
5	1,380	d400	1,070	d5,000	d2,300	2,460	4,080	5,160	2,880	662	298	156
6	830	d350	1,010	3,700	d2,100	2,460	3,660	4,940	2,690	565	298	156
7	830	d320	950	3,320	d1,800	2,460	3,070	4,940	2,510	520	280	156
8	d900	250	950	2,790	d1,800	3,510	2,340	4,500	2,340	482	280	156
9	d800	5,780	1,070	2,460	d1,600	3,890	2,510	3,460	2,340	445	280	156
10	d800	4,920	d4,000	2,150	d1,500	6,000	2,510	2,690	2,170	445	280	156
11	d520	3,320	d3,700	2,150	d1,400	5,560	2,510	2,170	2,170	445	262	146
12	d420	2,460	3,320	2,000	d1,300	5,340	2,690	3,890	2,010	482	262	146
13	375	2,150	2,960	1,860	d1,250	3,510	2,880	d4,200	1,860	482	262	146
14	323	2,000	2,460	1,860	d1,250	3,140	6,540	d4,400	2,010	460	250	146
15	375	1,790	2,000	1,790	d1,250	3,140	11,800	d3,700	2,170	445	250	146
16	d600	d1,900	1,650	1,580	d1,200	2,790	10,900	d3,500	2,340	431	237	146
17	d500	d2,200	1,320	1,580	1,190	3,700	8,580	3,260	3,070	431	280	146
18	d420	d1,900	1,260	d1,900	1,130	5,560	6,540	3,460	3,660	431	222	146
19	d390	d1,500	1,260	d1,800	1,070	6,700	5,160	3,460	3,460	431	222	146
20	362	1,260	1,190	d1,500	d1,250	8,720	5,380	d4,100	3,260	410	205	146
21	342	1,130	1,190	1,320	d1,500	21,000	5,380	d3,800	3,070	410	205	146
22	310	950	1,190	1,320	d2,000	11,500	5,160	3,660	2,510	410	205	146
23	280	830	1,260	1,380	d2,200	7,280	5,160	3,460	2,170	389	194	146
24	280	772	1,260	1,450	d2,400	5,840	4,940	3,460	2,010	375	194	146
25	280	610	1,380	d2,000	d2,800	4,940	4,940	3,660	1,720	362	194	146
26	222	715	2,960	d2,500	d2,500	5,160	4,940	3,070	1,580	342	194	146
27	222	d1,400	d7,000	d2,800	d2,200	5,380	4,720	2,340	1,440	342	194	146
28	222	d1,100	6,000	d2,300	d2,000	5,840	4,720	2,170	1,310	323	194	146
29	222	1,070	7,430	d2,000	-	6,300	4,500	2,010	1,240	323	194	146
30	250	1,190	7,940	2,150	-	6,780	4,500	1,860	1,180	310	194	146
31	310	-	8,460	2,790	-	6,540	-	1,860	-	310	194	-
Total	13,626	43,571	81,310	90,950	53,120	165,180	153,250	113,800	67,380	15,508	7,552	4,588
Mean	440	1,450	2,620	2,930	1,900	5,330	5,110	3,670	2,250	500	244	153
Cfsm	0.688	2.27	4.09	4.58	2.97	8.33	7.98	5.73	3.52	0.781	0.381	0.239
In.	0.79	2.53	4.72	5.28	3.09	9.60	8.90	6.61	3.93	0.90	0.44	0.27
Ac-ft	27,100	86,300	161,000	180,000	106,000	328,000	304,000	226,000	134,000	30,700	15,000	9,100

Calendar year 1928: Max 29,400 Min 126 Mean 2,340 Cfsm 3.66 In. 49.65 Ac-ft 1,700,000
Water year 1928-29: Max 21,000 Min 146 Mean 2,220 Cfsm 3.47 In. 47.06 Ac-ft 1,610,000

d Doubtful gage-height record; discharge estimated on basis of records for North Santiam River at Mehama and Middle Fork Willamette River at Eula.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1,920	g1,640	g16,900	3,640	17,200	3,120	g5,280	4,010	1,670	4,120	376	206
2	3,660	g1,400	g11,300	3,120	16,200	2,750	4,990	3,400	1,560	2,890	370	202
3	6,860	g1,370	g11,700	2,750	18,700	2,610	g5,040	2,930	1,530	2,320	355	194
4	3,400	g1,240	g13,000	2,700	21,600	2,860	4,580	2,550	1,560	1,950	350	190
5	1,850	g1,240	g16,200	2,450	14,300	2,730	g6,060	2,300	1,670	1,680	335	222
6	1,250	g1,120	*9,160	2,350	*9,730	2,570	g7,400	2,130	1,710	1,470	320	230
7	930	g1,010	6,290	2,150	7,480	2,400	g7,130	2,120	1,500	1,280	320	226
8	747	g910	4,940	2,010	6,270	2,230	g5,540	3,120	1,340	1,160	311	*239
9	640	g910	4,010	2,000	5,540	2,330	4,340	3,400	*1,300	1,080	311	454
10	568	g1,570	3,400	3,440	5,020	3,800	3,940	3,040	1,370	980	316	400
11	560	3,000	3,500	2,990	4,940	3,540	3,970	3,230	1,370	940	306	275
12	1,500	10,400	3,840	2,520	4,800	3,100	3,700	3,100	1,270	870	302	248
13	2,020	*9,310	3,760	2,200	4,010	2,750	3,990	3,330	1,060	810	293	226
14	2,880	8,440	3,270	2,170	3,720	2,450	4,430	3,600	1,180	756	284	222
15	4,700	6,010	2,860	1,950	4,010	2,230	4,080	3,500	1,840	712	280	198
16	2,950	4,410	3,040	1,750	4,380	2,090	3,680	3,200	1,400	672	280	190
17	2,300	3,500	3,220	1,580	3,900	*2,020	3,740	3,400	1,190	640	275	190
18	1,780	g2,930	*6,940	1,510	3,420	2,070	4,850	3,480	1,130	616	275	184
19	2,730	g2,750	6,750	1,420	3,120	2,040	5,540	3,500	1,110	584	266	181
20	5,980	g2,570	4,700	1,770	2,800	1,920	4,360	3,400	1,030	568	262	181
21	6,060	g2,400	4,470	1,700	2,500	1,850	3,580	3,400	1,240	546	262	178
22	7,540	g2,230	14,100	1,710	2,320	1,820	3,270	2,890	1,120	525	248	169
23	20,200	g2,070	8,490	2,280	3,080	2,130	3,140	2,660	1,000	*511	252	166
24	11,600	g1,780	5,880	3,940	3,120	*14,800	3,330	2,750	1,140	497	252	163
25	6,830	g1,780	4,490	4,490	3,180	13,500	3,920	2,750	1,110	478	252	163
26	4,610	g5,040	3,900	5,880	3,990	10,700	4,320	2,540	1,020	466	248	160
27	3,460	g5,540	3,900	4,490	4,230	8,550	4,120	2,430	990	448	239	160
28	2,770	g8,240	3,940	3,900	3,860	7,990	4,730	2,660	1,280	430	230	160
29	2,300	g11,300	7,020	4,120	3,480	g6,590	3,860	2,380	7,410	412	222	160
30	2,000	g16,200	6,620	6,560	-	g5,540	*3,500	2,040	6,940	400	222	157
31	1,740	-	4,700	12,900	-	g4,560	-	1,850	-	388	218	-
Total	118,375	122,110	206,290	96,440	190,900	129,640	134,410	91,070	51,040	31,199	8,832	6,294
Mean	3,819	4,070	6,655	3,111	6,583	4,182	4,480	2,938	1,701	1,006	285	210
Cfsm	5.97	6.36	10.4	4.86	10.3	6.53	7.00	4.59	2.66	1.57	0.445	0.328
In.	6.88	7.10	11.99	5.60	11.09	7.53	7.81	5.29	2.97	1.81	0.51	0.37
Ac-ft	234,800	242,200	409,200	191,300	378,600	257,100	266,600	180,600	101,200	61,880	17,520	12,480

Calendar year 1951: Max 22,200 Min 122 Mean 3,413 Cfsm 5.33 In. 72.41 Ac-ft 2,471,000
Water year 1951-52: Max 21,600 Min 157 Mean 3,242 Cfsm 5.07 In. 68.95 Ac-ft 2,353,000

Peak discharge (base, 21,000 cfs).--Oct. 23 (11:30 a.m.) 27,900 cfs (12.45 ft); Feb. 4 (12:30 a.m.) 25,300 cfs (11.77 ft).

* Discharge measurement made on this day.

g Computed from once-daily staff-gage readings.

Albany power canal near Lebanon, Oreg.

Location.--Lat 44°33'10", long. 122°54'20", in SW¼ sec. 2, T. 12 S., R. 2 W., on left bank an eighth of a mile downstream from spillway and 1 mile north of Lebanon.

Records available.--April 1926 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 322.90 ft above mean sea level, datum of 1929. Prior to June 24, 1938, staff gage at same site and datum.

Average discharge.--26 years, 213 cfs.

Extremes.--1926-52: Maximum daily discharge, 332 cfs Dec. 29, 1936; minimum daily, 10 cfs Apr. 29 to May 4, 1926, July 29, 30, 1927, Oct. 17-28, 1928.

Remarks.--Records good except those for periods of backwater from debris, 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.

Revisions.--Revised figures of discharge, in cubic feet per second, for period April to September 1926 and for water years 1930, 1939, and 1942, superseding those published in Water-Supply Papers 634, 709, 884, and 964, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1926		1926-Con.		1926-Con.	
Apr. 16	248	May 19-24	†272	Sept. 13	76
17-26	†243	25	279	20	87
27	238	26-31	†265	27	87
28	79	June 4	239		
29	10	14	226	1930	
30	10	21	188	Apr. 8	234
May 1	10	28	132	9	113
2	10	July 7	112	10	116
3	10	13	153		
4	10	20	164	1939	
5	195	22	164	Mar. 13	203
6	293	30	132		
7-10	†293	Aug. 4	117	1941	
11	293	10	117	Nov. 15	184
12-15	†279	16	95	16	163
16	265	24	112	17	188
17	232	30	122		
18	265	Sept.6	76		

† Average discharge for period indicated.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
May 1926	7,372	-	10	238	14,600
June	-	-	-	e196	11,700
July	-	-	-	e145	8,920
August	-	-	-	e113	6,950
September	-	-	-	e81.5	4,850
April 1930	-	-	-	220	13,100
Water year 1929-30	-	-	-	195	141,000
Calendar year 1930	-	-	-	210	152,000
March 1939	8,730	295	203	282	17,320
Water year 1938-39	92,375	315	80	253	183,200
Calendar year 1939	86,047	315	12	236	170,700
November 1941	7,596	281	163	253	15,070
Calendar year 1941	89,640	297	124	246	177,800
Water year 1941-42	89,946	298	112	246	178,400

e Estimated on basis of weekly gage readings.

Albany power canal near Lebanon, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*102	71	130	145	196	97	141	117	174	236	218	147
2	178	66	170	126	184	92	150	96	168	86	216	140
3	151	65	175	118	183	89	160	80	163	107	221	132
4	106	67	150	119	197	91	157	70	165	199	213	133
5	94	67	122	110	182	90	189	68	159	190	211	148
6	85	55	171	108	168	88	204	84	177	178	200	161
7	74	51	177	96	*160	88	209	84	202	167	212	160
8	61	50	161	86	210	86	191	88	195	158	220	*159
9	57	48	140	82	198	87	160	91	*205	182	218	173
10	47	66	130	138	186	120	136	86	233	230	216	177
11	46	106	134	130	190	127	129	88	239	224	205	186
12	79	137	138	113	190	116	118	85	237	222	200	179
13	120	*133	138	96	158	122	130	89	231	226	195	168
14	129	158	125	94	148	106	154	99	228	222	193	166
15	204	178	115	84	153	122	139	98	237	231	192	154
16	153	164	115	76	171	121	115	90	238	232	191	147
17	127	158	123	81	154	*105	112	90	240	237	190	142
18	105	139	162	74	138	90	146	93	237	235	186	141
19	136	124	*185	75	131	90	162	96	236	227	181	138
20	204	117	154	84	124	88	146	93	238	224	177	131
21	206	113	146	86	114	85	108	91	244	216	172	130
22	226	99	242	88	120	86	90	86	238	227	169	122
23	179	84	200	101	150	88	86	84	242	247	171	114
24	126	71	174	126	137	215	88	82	245	246	180	111
25	187	69	172	148	112	211	112	81	245	246	174	113
26	190	156	157	130	124	193	124	100	244	237	174	114
27	164	162	150	134	129	173	121	124	246	236	167	116
28	147	141	152	126	115	161	*131	162	250	225	160	116
29	123	148	187	126	105	151	112	194	269	*227	156	112
30	99	131	186	164	-	141	96	184	255	225	155	108
31	81	-	160	179	-	151	-	181	-	223	158	-
Total	3,986	3,194	4,841	3,443	4,547	3,670	4,116	3,154	6,680	6,568	5,891	4,238
Mean	129	106	156	111	157	118	137	102	223	212	190	141
Ac-ft	7,910	6,340	9,600	6,830	9,020	7,280	8,160	6,260	13,250	13,030	11,680	8,410

Calendar year 1951: Max 242 Min 46 Mean 140 Ac-ft 101,200
Water year 1951-52: Max 269 Min 46 Mean 148 Ac-ft 107,800

* Discharge measurement made on this day.
Note.--Backwater from debris Nov. 11 to Dec. 21, Aug. 1 to Sept. 30.

Santiam River at Jefferson, Oreg.

Location.--Lat 44°42'55", long. 123°00'40", in SE¼ sec. 11, T. 10 S., R. 3 W., on right bank 350 ft upstream from railroad bridge at Jefferson, 2 miles downstream from confluence of North Santiam and South Santiam Rivers, and 9 miles upstream from mouth.

Drainage area.--1,790 sq mi, approximately.

Records available.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, and October 1939 to September 1952 in reports of Geological Survey. Gage-height records collected at same site since April 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 199.63 ft above mean sea level, datum of 1929. Oct. 8, 1905, to June 30, 1906, Oct. 1, 1907, to May 14, 1908, July 1, 1914, to Sept. 30, 1916, Oct. 1, 1939, to Sept. 21, 1940, staff gage at site 350 ft downstream and May 15, 1908, to June 30, 1914, staff gage at site 150 ft downstream, all at datum 3.00 ft higher.

Average discharge.--22 years (1907-16, 1939-52), 7,584 cfs.

Extremes.--Maximum discharge during year, 54,600 cfs Feb. 4 (gage height, 16.08 ft); minimum, 412 cfs Sept. 19, 20, 26 (gage height, 1.94 ft).

1905-6, 1907-16, 1939-52: Maximum discharge, 161,000 cfs Nov. 22, 1909 (gage height, 18.2 ft, from floodmark, site and datum then in use; corresponding gage height at present site 23.0 ft, from curve of relation); minimum observed, 260 cfs Aug. 15-22, Aug. 24 to Sept. 2, 1940 (gage height, -1.00 ft, site and datum then in use).

Maximum discharge known, about 202,000 cfs Nov. 21, 1921 (gage height, 19.5 ft at railroad bridge 350 ft downstream, datum in use prior to Oct. 1, 1940; corresponding gage height at present site, 24.4 ft, from curve of relation).

Revisions.--Figures of maximum discharge for the water years 1915 and 1916 have been revised to 35,700 cfs Jan. 14, 1915 (gage height, 8.6 ft) and 96,700 cfs Feb. 7, 1916 (gage height, 15.4 ft), superseding figures published in Water-Supply Papers 414, and 444, respectively.

Remarks.--Records excellent. 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.

Revisions (water years).--W 904: Drainage area. W 1094: 1908, 1910, 1912, 1922(M), 1943. Revised figures of discharge, in cubic feet per second, for the water year 1911, superseding those published in Water-Supply Paper 362-c, are given herewith:

1910
Oct. 6..... 1,700
7..... 1,520
8..... 1,350

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October 1910.....	6,150	540	1,310	80,800
Water year 1910-11....	41,300	540	6,290	4,560,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,830	4,490	38,500	9,980	37,600	7,880	12,800	10,500	5,190	12,200	980	603
2	7,030	4,040	30,700	8,350	40,900	7,090	11,600	9,200	4,720	8,810	950	567
3	13,800	3,790	26,900	7,490	36,400	6,670	11,900	7,980	4,620	6,960	891	549
4	10,100	3,910	32,000	7,910	51,300	6,960	10,900	7,040	*4,740	5,740	864	*540
5	5,550	3,720	40,100	7,120	39,300	7,040	12,300	6,290	5,080	5,040	855	576
6	3,730	3,380	27,200	6,920	26,200	6,600	16,000	5,840	5,230	4,490	837	630
7	2,780	3,210	18,000	6,270	19,300	6,230	16,900	5,780	4,700	3,960	828	630
8	2,200	3,060	13,700	5,880	15,800	5,840	14,100	6,340	4,220	3,500	801	648
9	1,930	*2,950	11,100	5,630	13,800	5,760	11,500	8,430	4,090	3,250	783	711
10	1,760	3,910	9,370	8,870	12,400	8,430	10,300	7,700	4,240	3,000	801	980
11	1,690	5,900	8,840	8,510	11,700	8,810	9,920	8,240	4,220	2,780	783	819
12	2,630	21,900	8,980	7,320	11,800	*7,780	9,590	8,300	4,200	2,610	738	729
13	5,150	23,400	8,890	6,340	10,300	6,990	9,830	8,890	3,460	2,470	729	675
14	5,500	22,800	8,010	6,320	9,370	6,430	11,100	9,890	3,320	2,290	729	648
15	10,800	16,100	7,120	5,940	9,450	5,860	10,700	9,800	5,610	2,110	720	630
16	7,290	12,000	7,140	5,310	10,200	5,510	9,650	8,840	4,850	2,010	711	585
17	5,770	9,510	7,780	4,830	9,400	5,310	9,430	9,370	4,060	1,880	702	585
18	4,680	8,040	12,500	4,620	8,490	5,710	11,200	9,710	3,800	1,760	702	594
19	5,480	7,240	*18,200	4,560	8,270	5,780	14,300	9,770	3,720	1,690	684	492
20	11,600	7,020	12,300	4,940	7,830	5,430	12,200	9,980	3,670	1,620	675	549
21	13,800	6,740	10,600	5,450	6,890	5,310	9,860	9,980	3,620	*1,550	657	567
22	13,800	6,120	29,000	5,060	6,500	5,040	8,730	8,700	3,700	1,480	648	500
23	35,200	5,550	21,400	6,600	8,140	5,190	*8,400	7,800	3,300	1,370	648	476
24	34,500	5,120	15,100	8,270	8,380	24,400	8,650	7,800	3,400	1,340	648	468
25	19,000	4,930	11,600	10,200	8,110	33,800	10,000	7,980	2,780	1,290	648	468
26	12,800	11,100	10,100	9,030	9,430	28,700	11,500	7,570	2,520	1,230	657	436
27	9,510	14,200	10,600	9,370	9,920	22,400	11,400	7,060	2,770	1,190	657	436
28	7,620	18,800	10,200	8,920	9,370	20,000	12,700	7,540	3,410	1,140	639	444
29	6,480	22,800	15,000	*8,840	8,570	16,800	11,100	7,190	11,300	1,060	630	436
30	5,670	32,900	16,900	12,000	-	14,400	9,370	6,160	20,800	1,010	612	460
31	5,020	-	12,600	28,600	-	15,200	-	5,590	-	990	612	-
Total	275,700	298,620	510,430	245,450	465,120	323,350	337,930	251,760	145,540	91,820	22,819	17,431
Mean	8,893	9,954	16,470	7,918	16,040	10,430	11,260	8,120	4,851	2,962	736	581
Ac-ft	546,800	592,300	‡1,012	486,800	922,600	641,400	670,300	499,400	288,700	182,100	45,260	34,570

Calendar year 1951: Max 49,000 Min 555 Mean 8,765 Ac-ft 6,345,000
Water year 1951-52: Max 51,300 Min 436 Mean 8,158 Ac-ft 5,922,000

Peak discharge (base, 39,000 cfs).--Oct. 23 (8:30 p.m.) 52,000 cfs (15.75 ft); Dec. 1 (6 p.m.) 43,100 cfs (14.48 ft); Dec. 5 (8 and 10 a.m.) 44,900 cfs (14.75 ft); Feb. 4 (10 a.m.) 54,600 cfs (16.08 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

Luckiamute River near Hoskins, Oreg.

Location.--Lat 44°43'10", long. 123°30'10", in NE¼ sec. 11, T. 10 S., R. 7 W., on right bank a quarter of a mile downstream from Benton County line and 3½ miles northwest of Hoskins.

Drainage area.--34 sq mi, approximately.

Records available.--May 1934 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 378.7 ft above mean sea level (river-profile survey).

Average discharge.--18 years, 203 cfs.

Extremes.--Maximum discharge during year, 2,640 cfs Feb. 3, (gage height, 8.16 ft); minimum, 6.0 cfs Sept. 20.
1934-52: Maximum discharge, 5,560 cfs Dec. 14, 1946, Feb. 17, 1949; maximum gage height, 13.22 ft Dec. 14, 1946; minimum discharge, that of Sept. 20, 1952.

Remarks.--Records good except those for period of backwater from beaver dam, which are fair. No diversion or regulation above station; log ponds upstream cause diurnal fluctuation at times.

Revisions (water years).--W 834: 1936(M).

Rating table, water year 1951-52, except period of backwater from beaver dam (gage height, in feet, and discharge, in cubic feet per second)

1.2	4.8	2.0	117
1.3	12	3.0	385
1.4	21	5.0	1,130
1.7	61	7.0	2,060

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	135	115	810	322	1,680	260	283	78	36	31	12	8.0
2	409	104	624	280	1,490	238	295	73	34	27	12	8.0
3	304	122	1,040	258	1,910	289	255	71	33	23	11	7.3
4	148	117	1,420	274	1,760	310	242	66	33	22	10	7.3
5	87	94	1,620	274	1,090	301	228	64	33	21	10	8.0
6	63	91	938	268	742	280	220	63	33	20	10	10
7	54	82	624	260	554	258	202	61	32	19	10	10
8	45	76	462	240	442	235	188	58	31	17	10	14
9	40	96	373	399	379	248	172	56	29	16	10	15
10	36	228	313	529	322	370	*160	55	29	15	9.4	12
11	85	648	271	*466	313	340	150	56	31	15	*9.4	10
12	104	886	240	382	292	313	142	*55	32	15	8.7	8.0
13	133	686	212	328	255	301	158	55	32	15	8.0	7.3
14	218	532	190	295	262	319	150	64	37	14	8.7	7.3
15	208	403	188	265	260	310	133	55	34	14	9.4	7.3
16	170	325	200	232	248	286	124	52	33	14	10	7.3
17	*131	265	188	205	232	286	117	49	31	14	9.4	7.3
18	122	228	715	208	220	301	115	46	29	14	9.4	6.6
19	178	200	599	210	215	298	119	46	27	14	9.4	6.6
20	349	188	442	268	195	295	104	46	29	14	8.7	6.6
21	355	165	691	255	180	283	100	46	33	14	8.7	6.6
22	470	140	1,200	258	*180	265	96	45	32	14	8.0	*6.6
23	1,380	133	706	373	212	292	92	43	28	14	10	6.6
24	894	115	490	550	218	476	89	41	27	14	12	6.6
25	543	168	385	540	255	445	85	41	26	13	13	7.3
26	370	*400	340	498	313	388	82	40	25	13	13	7.3
27	283	397	346	480	337	337	78	38	*23	13	10	7.3
28	225	400	331	430	316	304	82	37	32	12	10	7.3
29	188	515	494	409	289	286	75	38	54	12	8.0	8.0
30	155	564	470	938	-	304	89	37	37	12	8.0	8.0
31	135	-	385	1,460	-	319	-	36	-	11	8.0	-
Total	8,017	8,483	17,307	12,154	15,161	9,537	4,425	1,611	955	496	304.2	245.5
Mean	259	283	558	392	523	308	148	52.0	31.8	16.0	9.81	8.18
Cfsm	7.62	8.32	16.4	11.5	15.4	9.06	4.35	1.53	0.935	0.471	0.289	0.241
In.	8.77	9.28	18.93	13.29	16.58	10.43	4.84	1.76	1.04	0.54	0.33	0.27
Ac-ft	15,900	16,830	34,330	24,110	30,070	18,920	8,780	3,200	1,890	984	603	487

Calendar year 1951: Max 2,260 Min 7.3 Mean 257 Cfsm 7.56 In. 102.51 Ac-ft 185,900
Water year 1951-52: Max 1,910 Min 6.6 Mean 215 Cfsm 6.32 In. 86.06 Ac-ft 156,100

Peak discharge (base, 2,000 cfs).--Dec. 4 (12 p.m.) 2,100 cfs (7.08 ft); Feb. 3 (4 p.m.) 2,640 cfs (8.16 ft).

* Discharge measurement made on this day.

Note.--Backwater from beaver dam Sept. 10-30.

Luckiamute River at Pedee, Oreg.

Location.--Lat 44°44'35", long. 123°25'25", in SE¼ sec. 33, T. 9 S., R. 6 W., on left bank half a mile downstream from Pedee Creek and three-quarters of a mile southwest of Pedee.

Drainage area.--115 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 245.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 1, 1949, staff gage at site 1,700 ft downstream at datum 1.85 ft lower.

Average discharge.--12 years, 462 cfs.

Extremes.--Maximum discharge during year, 5,430 cfs Feb. 3 (gage height, 12.1 ft, from graph completed on basis of graph for station at Hoskins); minimum, 9.4 cfs Sept. 13.
1940-52: Maximum discharge, 13,500 cfs Feb. 17, 1949 (gage height, 18.46 ft, from floodmark, present site and datum), from rating curve extended above 7,800 cfs by logarithmic plotting; minimum observed, 7 cfs Sept. 12, 1944.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Small diversions above station for irrigation. Some diurnal fluctuation in summer caused by log ponds above station.

Revisions (water years).--W 964: 1941. W 1044: Drainage area. Revised figures of discharge, in cubic feet per second, for water year 1945, superseding those published in Water-Supply Paper 1044, are given herewith:

Sept. 5, 1945..... 207

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
September 1945.....	1,268	207	15	42.3	0.368	0.41	2,520
Water year 1944-45.....	137,260	3,310	13	376	3.27	44.38	272,300
Calendar year 1945.....	190,872	4,990	15	523	4.55	61.72	378,600

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.3	9.4	2.7	245
1.4	13	4.0	780
1.5	19	7.0	2,260
1.9	61	11.0	4,650
2.2	112		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	206	259	1,820	856	3,410	726	510	191	75	71	18	15
2	546	239	1,480	735	3,040	654	519	175	74	60	20	14
3	462	242	2,260	681	4,310	690	470	168	72	54	18	13
4	239	256	3,470	780	3,580	722	454	162	71	50	18	13
5	160	215	4,180	766	2,170	690	426	155	68	48	*16	14
6	124	203	2,440	766	1,560	650	410	155	68	46	16	15
7	100	188	1,640	717	1,190	604	378	155	64	42	16	17
8	85	182	1,230	672	956	555	350	145	62	39	16	27
9	75	203	970	816	816	555	336	140	61	37	16	34
10	68	498	816	1,430	699	748	*308	135	60	36	17	26
11	112	1,410	699	*1,340	658	726	290	135	62	35	18	20
12	194	2,200	614	1,080	a600	686	280	*130	67	36	15	15
13	185	1,760	537	910	a550	650	308	126	65	35	15	11
14	280	1,400	478	856	a600	704	298	140	75	35	15	13
15	308	1,040	450	807	a600	694	273	133	78	31	17	13
16	273	830	478	699	a550	654	256	121	68	26	19	13
17	*218	686	442	614	a550	636	245	112	61	27	19	13
18	200	586	1,300	586	a550	748	236	108	59	27	18	12
19	262	514	1,400	564	a500	776	239	108	57	27	17	12
20	532	482	1,060	748	a460	753	224	106	56	28	16	11
21	542	434	1,220	717	a440	726	215	108	61	28	15	11
22	717	382	2,420	740	*466	676	209	102	61	27	14	*11
23	2,410	350	1,630	1,060	586	663	200	94	56	26	14	11
24	1,710	322	1,180	1,420	694	848	191	90	54	25	19	11
25	1,020	362	951	1,380	798	816	191	87	54	24	25	12
26	730	874	830	1,230	1,010	726	185	82	51	21	25	12
27	568	897	870	1,160	1,000	650	180	82	*51	20	23	12
28	462	1,000	878	1,020	897	591	185	77	60	20	20	12
29	394	1,290	1,290	942	812	550	182	80	119	18	16	12
30	332	*1,340	1,300	a2,000	-	560	200	78	92	17	16	12
31	290	-	1,050	a3,000	-	582	-	75	-	17	13	-
Total	13,804	20,644	41,384	31,092	34,052	21,009	8,748	3,755	1,982	1,033	540	437
Mean	445	688	1,335	1,003	1,174	678	292	121	66.1	33.3	17.4	14.6
Cfsm	3.87	5.98	11.6	8.72	10.2	5.90	2.54	1.05	0.575	0.290	0.151	0.127
In.	4.46	6.68	13.38	10.05	11.01	6.79	2.83	1.21	0.64	0.33	0.17	0.14
Ac-ft	27,380	40,950	82,080	61,670	67,540	41,670	17,350	7,450	3,930	2,050	1,070	867

Calendar year 1951: Max 5,650 Min 14 Mean 585 Cfsm 5.09 In. 69.07 Ac-ft 423,600
Water year 1951-52: Max 4,310 Min 11 Mean 488 Cfsm 4.24 In. 57.69 Ac-ft 354,000

Peak discharge (base, 3,500 cfs).--Dec. 5 (1 a.m.) 5,300 cfs (11.93 ft); Feb. 3 (about 6 p.m.) 5,430 cfs (12.1 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station near Hoskins, weather records, and recorded range in stage.

Luckiamute River near Suver, Oreg.

Location.--Lat 44°47'00", long. 123°14'00", in SW¼SW¼ sec. 18, T. 9 S., R. 4 W., on right bank, 10 ft upstream from highway bridge at Helmick State Park, 3 miles northwest of Suver, and 4½ miles downstream from Little Luckiamute River.
Drainage area.--240 sq mi.
Records available.--August 1905 to October 1911, July 1940 to September 1952.
Gage.--Water-stage recorder. Datum of gage is 171.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Aug. 18, 1905, to Oct. 31, 1911, staff gage at same site at different datum. Aug. 20 to Oct. 15, 1940, staff gage at present site and datum.
Average discharge.--18 years (1905-11, 1940-52), 943 cfs (revised).
Extremes.--Maximum and minimum discharges for the water years 1907-8, 1910, and 1952 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)	Gage height (feet)
1907	Jan. 4, 1907	†22,000	30.0	Sept.13,14,1907	‡26	-
1908	Dec. 26, 1907	†16,200	27.7	(a)	‡30	-
1910	Nov. 23, 1909	†19,000	28.8	Sept.2-7, 1910	‡26	-
1952	Feb. 4, 1952	9,260	27.76	Sept.21,22,1952	14	1.63

† Not previously published.
‡ Minimum daily.
a Occurred Oct. 19, 20, 28, 29.

1905-11, 1940-52: Maximum discharge, 23,800 cfs Feb. 18, 1949 (gage height, 33.10 ft), from rating curve extended above 14,000 cfs by logarithmic plotting; minimum, that of Sept. 21, 22, 1952.

Maximum stage known, 33.5 ft, probably Dec. 29, 1937, from information by local residents (discharge, 25,000 cfs, from rating curve extended above 14,000 cfs by logarithmic plotting).

Remarks.--Records good except those for period of no gage-height record, which are fair. 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.
Revisions (water years).--W 1044: Drainage area. W 1094: 1945-46. Revised figures of discharge, in cubic feet per second, for some periods in the water years 1905-11, superseding those published in Water-Supply Papers 272, 312, and 370, are given herein. Complete tables of daily discharge are given for water years 1907, 1908, and 1910, but only revised discharges are given for other water years.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1905		1905-Con.		1908		1909-Con.		1910-Con.	
Aug. 20	55	Dec. 27	2,660	Oct. 1	51	Jan. 23	6,400	Oct. 9	220
21	51	28	2,100	2	48	24	3,520	10	110
22	55	29	1,900	3	48	25	2,750	19	210
23	75	30	1,950	4	51	26	1,980	20	160
24	44	31	3,940	5	55	27	1,790	21	150
25	34			6	59	28	1,550	22	140
26	37	1906		7	63	29	1,450	23	140
27	34	Jan. 1	2,780	8	67	30	1,110	24	150
28	75	2	1,920	9	67	31	1,010	25	150
29	44	3	1,700	10	71	Sept. 1	67	26	130
30	67	4	1,350	11	59	2	63	27	120
31	37	5	1,000	12	55	3	59	28	105
Sept. 1	34	6	1,090	13	67	4	59		
2	30	7	1,150	14	347	5	59	1911	
3	34	8	1,110	15	665	6	59	Jan. 1	1,550
4	51	9	1,250	16	420	7	59	2	1,450
5	37	10	1,110	17	350	8	59	3	1,430
6	75	11	1,250	18	420	9	63	4	1,170
7	75	12	1,610	19	450	10	63	5	990
8	34	13	3,310	20	350	11	63	6	812
9	34	14	3,310	21	280	12	59	7	831
10	37	15	2,950	23	205	13	59	8	970
11	37	16	3,490	24	130	14	55	9	1,150
12	37	17	5,080	31	1,130	15	55	10	1,600
13	44	18	5,620			16	51	11	1,350
14	44	19	3,920	1909		17	37	12	1,170
15	75	20	2,990	Jan. 1	1,630	18	37	13	1,110
16	37	21	2,750	2	1,750	19	37	14	930
17	59	22	2,150	3	2,220	20	51	15	1,190
18	44	23	3,110	4	1,850	21	51	16	1,410
19	55	24	5,620	5	1,750	22	51	17	1,850
20	75	25	3,650	6	1,630	23	55	18	9,560
21	51	26	2,550	7	1,570	24	59	19	17,500
22	44	27	2,150	8	1,550	25	59	20	10,300
23	44	28	2,220	9	1,430	26	59	21	5,200
24	44	29	1,590	10	1,370	27	63	22	2,900
25	48	30	1,530	11	1,250	28	75	23	2,350
Dec. 3	960	31	1,250	12	1,170	29	79	24	1,770
17	1,130	Mar. 1	2,840	13	1,050			25	1,750
18	1,850	2	2,250	14	950	1910		26	1,600
19	1,590	3	1,860	15	1,650	Oct. 1	48	27	1,400
20	2,440	4	1,610	16	2,480	2	51	28	1,710
21	2,140	5	1,440	17	3,880	3	530	29	2,100
22	1,730	6	1,310	18	9,390	4	793	30	1,510
23	1,450	7	1,160	19	18,000	5	420	31	1,570
24	1,290	8	1,070	20	15,800	6	350		
25	1,110	9	970	21	14,500	7	300		
26	2,720	15	640	22	11,400	8	280		

Luckiamute River near Suver, Oreg.--Continued

Revised figures of monthly discharge, in cubic feet per second, 1905-11

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
August 1905	-	34	62.2	0.259	0.30	3,820
September	280	30	72.1	.300	.33	4,290
December	3,940	375	1,330	5.54	6.39	81,800
January 1906	5,620	1,000	2,470	10.3	11.87	152,000
March	2,840	546	1,010	4.21	4.85	62,100
Water year 1905-6	6,590	37	786	3.28	44.40	569,000
October 1908	1,130	48	217	.904	1.04	13,300
Calendar year 1908	14,200	44	792	3.30	44.91	575,000
January 1909	18,000	950	3,870	16.1	18.56	238,000
September	83	37	58.3	.243	.27	3,470
Water year 1908-9	18,000	37	947	3.95	53.48	686,000
October 1910	793	48	199	.829	.96	12,200
Calendar year 1910	12,600	26	1,060	4.42	60.14	770,000
January 1911	17,500	812	2,650	11.0	12.68	163,000
Water year 1910-11	17,500	48	850	3.54	48.05	616,000

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	12	15.0	1,930
3.0	106	23.0	4,040
5.0	280	26.0	6,030
8.0	680	28.0	9,810

Discharge, in cubic feet per second, water year October 1906 to September 1907

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	280	831	1,470	6,000	1,220	1,190	411	242	120	51	40
2	80	173	683	1,510	4,780	1,330	910	397	230	111	55	48
3	158	218	910	4,400	4,450	*1,540	930	384	230	120	51	75
4	200	347	648	20,000	7,030	1,220	970	411	230	133	55	59
5	211	1,100	580	11,000	16,000	1,020	950	628	195	153	48	48
6	83	870	614	5,620	15,500	840	1,880	411	148	107	48	40
7	72	1,780	2,100	3,290	9,730	820	5,620	319	168	143	55	44
8	99	6,240	1,980	2,450	4,150	1,020	8,070	293	195	95	51	44
9	107	6,460	1,670	2,080	2,900	645	4,300	267	173	91	59	40
10	91	4,000	2,050	1,590	2,400	1,020	3,000	230	195	87	63	44
11	91	4,460	2,080	1,290	2,000	1,380	2,750	345	236	83	55	40
12	163	2,400	1,630	1,150	1,850	1,100	1,920	384	190	87	44	30
13	333	3,190	1,610	1,150	1,590	1,020	1,670	371	218	83	48	26
14	242	4,420	1,510	1,150	1,370	920	1,250	332	218	80	48	26
15	254	5,820	2,000	1,050	1,210	1,140	1,170	280	195	76	51	44
16	951	7,450	2,100	950	1,170	900	1,050	267	143	80	44	44
17	1,140	6,240	1,900	850	1,050	820	970	267	178	76	40	115
18	755	4,500	1,750	648	1,070	1,730	1,010	230	163	72	44	163
19	597	3,190	2,120	665	1,090	1,880	950	319	173	76	48	103
20	466	2,400	3,650	701	1,150	1,060	890	293	158	72	44	75
21	274	2,340	5,900	631	1,050	900	850	267	143	72	51	51
22	293	2,280	9,050	701	546	1,020	737	242	138	76	40	37
23	267	1,810	3,650	701	701	1,460	683	306	128	72	37	44
24	230	1,540	2,350	737	950	1,780	631	319	133	69	48	79
25	184	1,420	2,250	850	1,050	1,440	580	332	138	80	51	44
26	242	1,120	2,900	701	1,530	1,560	514	332	124	69	51	40
27	563	890	2,100	812	1,390	1,310	498	306	133	69	48	48
28	420	910	1,830	1,250	1,170	1,270	482	306	115	56	44	44
29	375	737	1,490	2,900	-	1,350	466	293	128	50	48	51
30	361	755	1,550	2,280	-	1,200	435	280	124	62	51	48
31	354	-	1,730	3,370	-	1,160	-	254	-	*59	44	-
Total	9,732	79,340	67,216	77,947	94,877	37,075	47,326	10,076	5,182	2,679	1,515	1,634
Mean	314	2,640	2,170	2,510	3,390	1,200	1,580	325	173	86.4	48.9	54.5
Cfsm	1.31	11.0	9.04	10.5	14.1	5.00	6.58	1.35	0.721	0.360	0.204	0.227
In.	1.51	12.27	10.42	12.11	14.68	5.76	7.34	1.56	0.80	0.42	0.24	0.25
Ac-ft	19,300	157,000	133,000	154,000	188,000	73,800	94,000	20,000	10,300	5,310	3,010	3,240

Calendar year 1906: Max 9,050 Min 37 Mean 1,050 Cfsm 4.38 In. 59.16 Ac-ft 758,000
Water year 1906-7: Max 20,000 Min 26 Mean 1,190 Cfsm 4.96 In. 67.36 Ac-ft 861,000

* Discharge measurement made on this day.

Luckiamute River near Suver, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1907 to September 1908

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	72	1,610	3,550	820	910	1,000	785	332	153	69	130
2	83	76	1,250	3,550	820	970	1,020	698	280	153	62	110
3	107	230	890	3,860	820	1,010	1,020	1,020	267	138	56	90
4	107	143	1,410	3,650	900	890	1,020	940	267	128	44	78
5	91	91	930	2,540	1,560	850	750	820	306	143	56	76
6	99	76	1,390	2,340	3,930	812	750	785	319	138	62	72
7	67	69	1,410	2,200	4,610	719	715	645	280	133	56	72
8	51	69	1,530	2,170	2,720	665	680	560	254	128	59	76
9	44	56	1,550	4,110	2,360	580	645	530	224	124	62	74
10	40	56	1,610	2,600	*1,610	597	592	500	195	115	62	68
11	40	50	2,280	3,150	1,330	701	560	485	184	107	66	66
12	37	53	3,110	2,500	1,400	755	560	455	173	115	62	*67
13	37	59	10,300	1,930	1,250	1,750	515	425	163	133	66	71
14	30	69	9,900	2,410	1,120	3,250	440	485	163	143	62	75
15	37	72	4,600	1,680	940	5,830	411	575	163	133	59	79
16	34	76	2,660	1,680	1,080	14,200	397	560	190	111	56	79
17	34	69	1,710	2,120	1,440	6,800	470	560	200	107	56	75
18	34	83	1,690	2,340	1,400	3,610	411	592	200	103	62	67
19	30	143	1,550	1,760	1,330	2,520	411	610	124	99	59	71
20	30	319	2,400	2,680	1,060	1,950	1,680	645	236	99	69	67
21	34	920	3,140	2,990	1,020	1,690	1,220	610	236	99	62	59
22	37	455	13,000	2,010	920	1,450	1,020	545	206	99	62	55
23	37	1,330	12,200	1,960	820	1,290	920	485	124	95	56	55
24	37	3,080	8,070	1,680	732	1,170	1,220	455	190	91	62	59
25	37	5,770	10,300	1,680	698	1,350	1,800	425	182	91	69	63
26	37	*4,260	13,800	1,560	802	1,110	1,350	411	173	83	66	59
27	34	2,060	8,710	1,440	920	1,090	1,020	384	236	83	69	59
28	30	2,480	6,200	1,220	880	1,050	920	384	218	87	87	51
29	30	1,860	3,880	1,080	860	1,050	860	358	178	91	99	55
30	71	1,930	3,080	820	-	1,050	820	345	168	76	133	55
31	59	-	2,500	820	-	950	-	332	-	72	143	-
Total	1,534	26,076	138,680	70,080	40,152	62,619	25,197	17,409	6,431	3,470	2,113	2,133
Mean	49.5	869	4,470	2,260	1,380	2,020	840	562	214	112	68.2	71.1
Cfsm	0.206	3.62	18.6	9.42	5.75	8.42	3.50	2.34	0.892	0.467	0.284	0.296
In.	0.24	4.04	21.44	10.86	6.20	9.71	3.90	2.70	1.00	0.54	0.33	0.33
Ac-ft	3,040	51,700	275,000	139,000	79,400	124,000	50,000	34,600	12,700	6,890	4,190	4,230

Calendar year 1907 : Max 20,000 Min 26 Mean 1,220 Cfsm 5.08 In. 68.88 Ac-ft 881,000
Water year 1907-8 : Max 14,200 Min 30 Mean 1,080 Cfsm 4.50 In. 61.29 Ac-ft 785,000

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1909 to September 1910

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	1,450	5,550	732	2,600	11,000	724	332	153	103	63	34
2	107	1,850	4,100	732	2,250	12,600	802	345	163	103	59	26
3	107	2,780	3,450	645	1,750	11,200	860	358	163	103	*55	26
4	103	2,600	2,750	715	1,650	8,710	830	364	163	95	48	26
5	95	2,350	2,250	860	1,530	6,900	802	332	148	95	48	26
6	83	2,480	1,550	940	1,350	4,960	741	326	148	95	48	26
7	80	2,600	2,220	1,090	1,090	4,100	698	280	148	91	48	26
8	76	2,840	2,600	1,200	990	2,970	628	267	133	91	51	34
9	76	2,900	3,780	1,350	980	2,350	1,440	260	120	87	48	34
10	72	2,750	5,080	1,220	950	1,750	1,430	260	120	80	48	34
11	69	2,600	5,200	1,160	930	1,390	1,330	267	120	80	48	34
12	69	2,350	13,200	1,120	831	1,250	1,020	254	120	80	51	34
13	69	1,980	6,400	1,000	1,810	1,170	1,160	254	120	76	48	34
14	69	1,450	4,400	960	2,350	1,160	970	254	120	72	44	34
15	69	1,050	3,180	802	1,980	1,030	920	254	120	72	44	34
16	69	1,850	2,480	1,680	1,850	950	785	248	120	72	44	34
17	72	2,220	2,100	2,620	1,790	831	759	242	120	69	44	71
18	44	2,350	1,630	2,800	1,770	831	732	242	120	69	37	71
19	115	2,900	1,350	2,560	1,650	822	680	230	120	66	37	87
20	163	6,700	1,250	2,480	2,100	802	654	206	120	66	37	99
21	163	4,720	1,190	2,680	2,350	755	628	206	111	59	37	103
22	168	9,390	1,050	4,490	2,580	710	610	206	111	59	40	111
23	168	19,000	1,010	4,110	3,080	648	584	206	111	59	40	111
24	168	15,800	930	4,260	6,400	631	515	206	111	66	40	71
25	163	10,700	870	3,750	8,200	563	470	195	111	66	40	55
26	115	4,840	850	3,680	6,400	554	397	190	111	66	40	48
27	115	2,450	755	3,410	8,200	530	364	184	103	66	40	48
28	163	4,500	665	3,080	11,400	482	358	170	103	66	34	48
29	163	4,780	683	3,180	-	442	332	163	103	66	34	48
30	168	11,000	719	3,250	-	405	332	163	103	66	34	48
31	645	-	755	3,080	-	368	-	163	-	66	34	-
Total	3,909	137,230	83,997	65,436	80,811	82,864	22,555	7,627	3,737	2,370	1,363	1,515
Mean	126	4,570	2,710	2,110	2,890	2,670	752	246	125	76.5	44.0	50.5
Cfsm	0.525	19.0	11.3	8.79	12.0	11.1	3.13	1.02	0.521	0.319	0.183	0.210
In.	0.61	21.20	13.03	10.13	12.50	12.80	3.49	1.18	0.58	0.37	0.21	0.23
Ac-ft	7,750	272,000	167,000	130,000	160,000	164,000	44,700	15,100	7,440	4,700	2,710	3,000

Calendar year 1909: Max 19,000 Min 37 Mean 1,400 Cfsm 5.83 In. 78.98 Ac-ft 1,010,000
Water year 1909-10: Max 19,000 Min 26 Mean 1,350 Cfsm 5.62 In. 76.33 Ac-ft 978,000

* Discharge measurement made on this day.

Luckiamute River near Suver, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	353	479	3,320	1,750	5,560	1,350	976	408	151	141	28	24
2	738	434	3,440	1,470	6,980	1,200	942	367	148	115	30	22
3	1,100	412	3,290	1,290	6,640	1,170	958	340	142	101	30	20
4	630	465	4,700	1,520	8,760	1,300	874	326	139	91	28	20
5	336	406	7,340	1,540	6,520	1,240	837	313	134	83	*26	19
6	240	367	6,600	1,550	4,470	1,180	827	303	133	79	23	21
7	192	351	4,450	1,400	3,140	1,090	792	298	131	74	24	24
8	164	331	2,890	1,330	2,360	1,010	723	289	124	66	25	27
9	145	322	2,090	*1,320	1,950	960	672	278	120	62	26	38
10	132	612	1,690	2,320	1,690	1,180	*637	268	114	59	25	44
11	129	1,460	1,440	2,540	1,480	1,240	606	262	120	56	25	33
12	317	3,190	1,260	2,200	1,440	1,160	584	*264	125	54	26	28
13	326	3,330	1,140	1,800	1,290	1,100	606	252	127	54	25	25
14	385	2,800	1,020	1,630	1,230	1,140	702	264	130	54	25	19
15	*590	2,100	926	1,600	1,250	1,280	613	281	152	51	25	19
16	627	1,590	965	1,410	1,180	1,160	560	252	140	47	26	20
17	482	1,280	917	1,220	1,100	1,090	522	236	120	41	28	19
18	375	1,090	1,790	1,120	1,020	1,330	504	224	111	41	30	19
19	408	962	3,090	1,110	*1,070	1,430	515	216	104	38	28	18
20	771	912	2,340	1,330	a1,050	1,360	501	216	100	38	26	18
21	1,030	835	1,900	1,520	a1,000	1,260	461	216	103	41	25	17
22	1,040	736	3,380	1,410	a1,050	1,170	441	210	110	41	24	*15
23	1,970	658	3,550	1,950	a1,100	1,120	425	200	106	38	24	16
24	3,330	606	2,530	2,460	a1,300	1,320	414	188	99	38	26	16
25	2,520	605	1,910	2,750	1,440	1,460	402	180	*94	39	30	17
26	1,540	1,640	1,600	2,390	1,790	1,360	390	174	93	38	35	17
27	1,110	2,010	1,730	2,190	1,860	1,220	378	168	90	33	36	18
28	893	*2,200	1,760	1,980	1,700	1,120	381	161	97	33	33	20
29	746	2,480	2,140	1,790	1,510	1,030	376	160	131	31	30	20
30	624	2,650	2,600	2,110	-	1,000	382	160	188	28	28	19
31	542	-	2,160	3,960	-	1,060	-	155	-	28	27	-
Total	23,785	37,313	79,958	55,960	72,930	37,090	18,001	7,630	3,676	1,733	847	652
Mean	767	1,244	2,579	1,805	2,515	1,196	600	246	123	55.9	27.3	21.7
Cfsm	3.20	5.18	10.7	7.52	10.5	4.98	2.50	1.02	0.512	0.233	0.114	0.090
In.	3.69	5.78	12.39	8.67	11.30	5.75	2.79	1.18	0.57	0.27	0.13	0.10
Ac-ft	47,180	74,010	158,600	111,000	144,700	73,570	35,700	15,130	7,290	3,440	1,680	1,290

Calendar year 1951: Max 9,110 Min 25 Mean 1,123 Cfsm 4.68 In. 63.51 Ac-ft 812,900
Water year 1951-52: Max 8,760 Min 15 Mean 928 Cfsm 3.82 In. 52.62 Ac-ft 673,600

Peak discharge (base, 6,600 cfs).--Dec. 5 (5 to 6 p.m.) 8,800 cfs (27.55 ft); Feb. 4 (10 to 11 a.m.) 9,260 cfs (27.76 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station at Pedee.

Willamette River at Salem, Oreg.

Location.--Lat 44°56'40", long. 123°02'30", in SW¼ sec. 22, T. 7 S., R. 3 W., on right bank 300 ft upstream from Center Street bridge at Salem and at mile 85.1.

Drainage area.--7,280 sq mi, approximately.

Records available.--October 1909 to December 1916, October 1927 to September 1952. Gage-height records collected at about the same site since 1892 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 114.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 1, 1909, to Dec. 31, 1916, staff gage at site half a mile upstream at about present datum. Oct. 1, 1927, to Nov. 26, 1934, staff gage at Center Street bridge at present datum.

Average discharge.--32 years, 22,860 cfs.

Extremes.--Maximum discharge during year, 143,000 cfs Feb. 5 (gage height, 18.27 ft); minimum, 4,660 cfs Sept. 4 (gage height, -3.67 ft).

1909-16, 1927-52: Maximum discharge, 315,000 cfs Nov. 25, 1909 (gage height, 30.5 ft); minimum, 2,470 cfs Aug. 27, 1940 (gage height, -4.45 ft).

Maximum discharge known, 500,000 cfs Dec. 4, 1861 (gage height, about 39 ft), from rating curve extended above 250,000 cfs in 1916. Flood of Feb. 5, 1890, reached a stage of 37.1 ft. Flood of Jan. 8, 1923, was measured at 344,000 cfs, at or very close to peak (gage height, 30.35 ft).

Remarks.--Records excellent. Many small diversions for irrigation above station; part of flow of Salem 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, Fern Ridge, and Dorena Reservoirs (see pp. 131,134,161). Records of chemical analyses and water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 11				Nov. 12 to Sept. 30			
-3.2	5,300	7.0	49,400	-3.7	4,600	8.0	56,500
-1.2	10,800	11.0	72,300	-2.0	9,000	12.0	85,000
4.0	33,400			1.0	20,500	19.0	151,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,480	16,000	90,800	58,000	85,700	33,000	44,600	28,000	18,800	37,600	5,600	4,960
2	11,200	14,200	107,000	45,200	105,000	29,500	39,900	27,000	17,600	28,000	5,600	4,860
3	18,900	12,800	104,000	37,000	119,000	27,000	37,600	24,600	16,500	22,400	5,600	4,800
4	25,300	12,300	105,000	35,900	132,000	26,400	36,200	22,200	*16,100	19,200	5,480	4,700
5	18,200	*11,800	117,000	36,000	141,000	26,800	35,100	20,500	16,300	16,800	5,480	*4,720
6	12,700	10,900	*128,000	34,900	128,000	26,200	38,300	19,300	16,900	15,300	5,480	4,960
7	10,100	10,400	115,000	33,200	97,600	24,900	43,100	18,400	17,000	14,000	5,420	5,180
8	8,850	10,000	81,300	30,800	70,400	23,200	43,100	18,400	16,200	12,900	5,250	5,160
9	7,700	9,870	57,700	28,400	55,100	21,900	38,400	22,300	15,300	12,000	5,180	5,250
10	7,180	10,100	46,400	33,200	47,800	23,500	33,300	23,900	15,200	11,300	5,200	5,720
11	6,980	12,900	40,300	44,400	43,000	27,800	30,600	23,400	15,300	10,800	5,420	6,300
12	6,920	33,300	37,400	47,000	41,200	28,600	29,400	23,900	15,100	10,300	5,580	5,800
13	9,840	59,100	36,300	39,700	39,400	*26,800	28,500	24,100	14,100	10,000	5,520	5,450
14	11,900	69,600	34,800	34,300	35,800	25,400	29,700	25,700	13,100	9,570	5,580	5,280
15	16,400	68,600	32,200	33,200	33,500	24,200	31,500	27,200	14,200	8,850	5,400	5,120
16	18,700	55,400	29,400	31,400	34,000	22,500	30,200	26,000	15,900	8,340	5,320	5,020
17	17,200	40,900	27,700	27,600	37,000	21,100	28,000	24,700	14,200	8,010	5,300	5,080
18	14,100	32,000	30,200	24,700	36,600	21,500	27,900	25,200	13,100	7,680	5,450	5,100
19	12,600	*27,400	46,700	23,200	34,600	23,100	31,400	25,900	12,800	7,440	5,450	4,980
20	17,000	25,000	53,100	23,400	34,800	23,200	34,100	26,600	12,600	7,290	5,380	4,880
21	25,600	23,600	*46,000	27,900	32,200	22,500	31,300	27,000	12,700	7,100	5,300	5,040
22	28,900	22,600	50,900	29,800	29,000	21,900	27,600	26,000	12,800	*6,980	5,200	4,980
23	39,400	20,500	70,100	34,100	31,200	21,000	25,600	25,600	12,300	6,820	5,200	4,880
24	60,000	18,700	73,400	39,900	34,000	29,500	*24,900	22,300	11,900	6,700	5,200	4,880
25	66,800	17,500	61,600	45,400	34,200	66,400	25,600	22,600	12,300	6,580	5,200	4,860
26	53,000	22,000	50,500	46,800	36,400	85,600	28,400	22,800	12,000	6,450	5,180	4,860
27	38,900	34,400	45,000	43,700	39,000	81,200	30,600	22,200	11,500	6,300	5,280	4,860
28	31,200	40,400	47,500	*40,800	37,900	68,500	31,200	21,900	11,700	6,120	5,180	4,860
29	26,000	52,300	53,500	38,100	35,500	59,300	32,000	22,500	14,700	5,950	5,100	4,840
30	20,900	69,300	65,400	39,300	-	52,200	29,500	21,800	35,400	5,800	5,000	4,840
31	18,000	-	69,000	57,900	-	48,000	-	20,000	-	5,700	4,920	-
Total	665,950	863,870	$1,953.2	$1,145.2	$1,660.9	$1,062.7	977,600	730,000	453,600	348,280	165,450	152,220
Mean	21,480	28,800	63,010	36,940	57,270	34,280	32,590	23,550	15,120	11,230	5,337	5,074
Cfsm	2.95	3.96	8.66	5.07	7.87	4.71	4.48	3.23	2.08	1.54	0.733	0.697
In.	3.40	4.41	9.98	5.85	8.48	5.43	4.99	3.73	2.32	1.78	0.85	0.78
Ac-ft	$1,321	$1,713	$3,874	$2,271	$3,294	$2,108	$1,939	$1,448	899,700	690,800	328,200	301,900

Calendar year 1951: Max 128,000 Min 4,060 Mean 29,250 Cfsm 4.02 In. 54.54 Ac-ft 21,180,000
Water year 1951-52: Max 141,000 Min 4,700 Mean 27,810 Cfsm 3.82 In. 52.00 Ac-ft 20,190,000

Peak discharge (base, 95,000 cfs).--Dec. 6 (8 to 9 a.m.) 129,000 cfs (16.89 ft); Feb. 5 (7 to 9 a.m.) 143,000 cfs (18.27 ft).

* Discharge measurement made on this day.

$ Expressed in thousands.

Mill Creek at penitentiary annex, near Salem, Oreg.

Location.--Lat 44°52'55", long. 122°58'35", in NE¼ sec. 18, T. 8 S., R. 2 W., on left bank at State penitentiary annex, 2⅔ miles downstream from Battle Creek, 5 miles southeast of Salem, and 7 miles upstream from mouth.

Drainage area.--104 sq mi.

Records available.--October 1940 to September 1952 in reports of Geological Survey. November 1938 to September 1941 in reports of Oregon State engineer.

Gage.--Water-stage recorder. Datum of gage is 231.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--13 years (1939-52), 370 cfs.

Extremes.--Maximum discharge during year, 2,650 cfs Dec. 5 (gage height, 5.73 ft); minimum daily, 45 cfs June 28.

1938-52: Maximum discharge, 5,140 cfs Feb. 18, 1949 (gage height, 7.67 ft); minimum, 44 cfs July 4, 1939, July 6, 1949.

Maximum discharge known, 8,320 cfs Dec. 29, 1937, computed by velocity-area method on basis of discharge measurement of 7,300 cfs made that day.

Remarks.--Records good except those for periods of shifting control or backwater from debris, which are fair. Salem power canal diverts water to Mill Creek from North Santiam River at Stayton; some diversions for irrigation from canal and creek above station. Flow diverted for irrigation on left bank between gage and control is not included in record. Diurnal fluctuations caused by changes at headgates and small powerplants above station.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52, except periods of shifting control or backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 3				Dec. 4 to Sept. 30			
1.0	110	3.0	830	0.3	69	2.0	488
1.5	215	4.0	1,440	.5	103	3.0	940
2.0	375	5.0	2,220	1.0	198	4.0	1,560
				1.5	318	6.0	3,260

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	223	1,410	600	1,720	515	296	211	141	206	141	100
2	302	210	874	518	2,380	461	324	196	168	190	141	116
3	251	215	1,490	492	2,250	496	278	184	172	170	148	114
4	210	220	2,200	840	2,030	522	246	174	176	160	143	114
5	174	*198	*2,210	695	1,220	591	228	170	*182	148	137	*126
6	150	185	1,520	770	956	484	215	166	184	150	135	137
7	152	178	1,060	629	810	425	196	164	176	156	139	135
8	188	172	860	574	695	377	186	168	120	148	143	128
9	142	184	704	587	612	442	176	168	100	139	143	139
10	133	526	604	1,150	542	542	168	172	135	132	141	137
11	150	902	534	1,110	526	454	200	174	145	158	132	125
12	220	1,000	488	835	542	421	194	170	152	152	134	132
13	226	874	439	731	473	*383	198	164	143	145	134	132
14	260	1,040	394	755	473	390	213	166	162	145	134	132
15	266	695	367	700	473	361	202	162	182	158	134	119
16	234	508	367	562	458	321	188	160	158	156	128	105
17	142	415	361	461	411	313	182	160	148	143	123	100
18	140	347	850	443	380	496	178	158	145	141	123	119
19	174	319	722	443	492	477	184	158	143	132	117	70
20	295	330	*546	646	550	407	172	160	148	137	125	135
21	269	288	538	690	515	383	164	156	150	152	121	125
22	302	333	708	745	570	348	166	156	150	141	114	137
23	1,330	298	558	1,040	951	358	162	154	147	*150	119	145
24	1,140	279	480	990	760	880	*162	154	156	170	117	143
25	640	316	425	775	736	850	198	154	145	168	*119	147
26	447	750	425	682	925	633	204	148	123	170	119	147
27	350	670	659	574	713	515	204	148	125	162	112	147
28	298	896	718	*499	616	458	223	147	45	168	112	150
29	260	1,070	1,020	461	550	394	213	148	150	162	105	145
30	220	1,060	951	655	-	374	219	143	180	162	116	143
31	208	-	726	1,790	-	348	-	139	-	158	105	-
Total	9,481	14,701	25,208	22,442	24,329	14,419	6,139	5,052	4,451	4,829	3,954	3,844
Mean	306	490	813	724	839	465	205	163	148	156	128	128
Ac-ft	18,810	29,160	50,000	44,510	48,260	28,600	12,180	10,020	8,830	9,580	7,840	7,620

Calendar year 1951: Max 2,460 Min 48 Mean 409 Ac-ft 296,100
Water year 1951-52: Max 2,380 Min 45 Mean 379 Ac-ft 275,400

* Discharge measurement made on this day.
Note.--Backwater from debris Nov. 28 to Jan. 9. Shifting-control method used Feb. 4 to Mar. 27.

$379 \times 366 \times \frac{.037}{104} = 49.62$

Mill Creek at Salem, Oreg.

Location.--Lat 44°56'05", long. 123°01'00", in NE¼ sec. 26, T. 7 S., R. 3 W., on left bank at State Street Bridge in Salem, 220 ft downstream from 19th Street diversion.

Drainage area.--110 sq mi.

Records available.--October 1940 to September 1952 in reports of Geological Survey. November, December 1934, and July 1938 to September 1941 in reports of Oregon State engineer.

Gage.--Water-stage recorder. Datum of gage is 166.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Nov. 2 to Dec. 31, 1934, staff gage three-quarters of a mile downstream at different datum. July 21, 1938, to Oct. 9, 1940, water-stage recorder at site 200 ft upstream at different datum.

Average discharge.--13 years (1939-52), 143 cfs.

Extremes.--Maximum discharge during year, 842 cfs Dec. 4 (gage height, 4.51 ft); minimum, 4.1 cfs Sept. 19.
1938-52: Maximum discharge recorded, 1,230 cfs Feb. 19, 1949 (gage height, 6.38 ft); no flow Oct. 2, 1938.

Remarks.--Records good. Salem power canal diverts water into Mill Creek near Stayton; several diversions from Mill Creek, including Shelton flood bypass 1½ miles upstream, and 19th Street power diversion 220 ft upstream. Diurnal fluctuation caused by power-plants above station.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 30				Jan. 31 to Sept. 30			
0.8	30	2.0	225	0.4	5.0	1.5	133
1.0	50	3.0	465	.6	16	2.0	236
1.5	125	4.5	840	.8	33	3.0	486
				1.0	55	4.0	746

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	116	665	355	569	308	162	104	68	190	34	12
2	160	111	552	312	652	267	176	90	56	180	33	14
3	122	108	632	289	608	282	156	68	61	131	39	14
4	95	105	770	452	639	313	129	62	62	74	35	14
5	68	*80	*670	400	463	351	120	59	*66	62	31	*17
6	42	76	540	435	382	296	110	58	68	42	28	20
7	47	70	520	380	327	246	99	58	65	47	29	24
8	71	66	470	351	284	211	78	61	75	56	33	20
9	40	70	402	339	248	241	63	58	22	50	32	24
10	36	212	368	535	229	332	58	65	32	32	31	26
11	53	331	331	540	222	272	75	68	37	45	28	20
12	111	382	301	478	229	238	76	66	36	37	26	24
13	111	327	266	408	202	*209	80	65	38	36	28	20
14	139	390	221	410	192	215	90	68	56	36	29	22
15	158	266	199	395	190	198	82	66	72	44	24	17
16	141	174	197	336	186	164	72	62	55	44	25	12
17	58	207	190	282	172	150	66	112	48	35	23	11
18	37	218	435	269	162	272	61	110	47	33	21	15
19	73	195	442	269	196	282	66	62	48	29	22	9.0
20	120	199	*348	363	231	227	63	65	51	34	24	20
21	110	174	327	400	222	205	59	61	54	*38	23	16
22	168	207	408	405	236	180	58	59	58	28	20	19
23	500	186	341	528	354	170	*58	59	50	29	21	20
24	550	164	294	522	303	398	54	65	55	45	20	20
25	400	190	250	458	286	418	82	68	48	54	23	27
26	312	432	239	420	354	349	88	58	33	55	19	25
27	260	425	365	375	296	301	93	55	34	45	18	28
28	207	498	402	341	253	265	101	56	32	51	16	30
29	156	560	490	312	262	229	98	56	112	45	15	28
30	120	558	495	382	-	215	102	47	168	45	18	28
31	108	-	415	*824	-	209	-	50	-	48	15	-
Total	4,649	7,097	12,545	12,365	8,949	8,013	2,675	2,061	1,707	1,720	781	594.0
Mean	150	237	405	399	309	258	89.2	66.5	56.9	55.5	25.2	19.8
Ac-ft	9,220	14,080	24,880	24,530	17,750	15,890	5,310	4,090	3,390	3,410	1,550	1,180

Calendar year 1951: Max 770 Min 9.0 Mean 161 Ac-ft 116,700
Water year 1951-52: Max 770 Min 9.0 Mean 173 Ac-ft 125,300

* Discharge measurement made on this day.

South Yamhill River near Willamina, Oreg.

Location.--Lat 45°02'50", long. 123°30'10", in sec. 14, T. 6 S., R. 7 W., on left bank 2¼ miles southwest of Willamina and 3 miles upstream from Willamina Creek.

Drainage area.--133 sq mi.

Records available.--May 1934 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 235.55 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--18 years, 599 cfs.

Extremes.--Maximum discharge during year, 7,560 cfs Dec. 5 (gage height, 9.54 ft); minimum, 3.0 cfs Sept. 3 (gage height, 0.38 ft); minimum daily, 7.1 cfs Sept. 3, 23.
1934-52: Maximum discharge, 15,200 cfs Feb. 10, 1949 (gage height, 14.80 ft); minimum, 3.0 cfs Aug. 22, 1938, Oct. 16, 1942, Sept. 3, 1952; minimum daily, 5.6 cfs Sept. 18, 1951.

Remarks.--Records good except those for periods of backwater from beaver dam or debris, which are fair. Slight regulation occasionally during summer by millpond upstream; no diversion above station.

Revisions.--W 814: Drainage area.

Rating table, water year 1951-52, except periods of backwater from beaver dam or debris (gage height, in feet, and discharge, in cubic feet per second)

0.4	6.1	3.0	845
.5	12	4.0	1,470
.7	30	5.0	2,250
.9	58	7.0	4,270
1.2	124	9.0	6,800
2.0	377		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	482	305	3,610	1,090	5,240	710	690	347	106	66	16	13
2	1,390	279	2,470	889	4,640	650	715	305	102	58	16	12
3	924	279	*3,610	770	4,720	812	645	275	99	50	15	7.1
4	435	285	4,740	780	4,900	1,030	585	250	90	48	12	8.8
5	272	240	5,650	912	3,080	1,040	555	234	88	45	12	8.8
6	201	222	3,280	818	2,060	1,030	555	222	86	44	12	9.4
7	157	210	2,080	725	1,510	912	504	210	81	41	14	14
8	130	198	1,500	680	1,180	818	455	207	77	35	14	16
9	109	201	1,140	1,480	990	801	411	201	73	34	14	18
10	99	565	918	1,680	840	1,350	377	195	73	31	14	20
11	143	2,040	755	1,520	878	1,250	*355	198	86	31	14	17
12	285	2,760	660	*1,200	936	1,110	333	201	88	35	12	18
13	295	2,110	575	1,030	780	1,000	385	201	77	36	*14	14
14	518	1,680	495	978	790	1,240	400	240	81	34	15	14
15	513	1,290	419	978	790	1,100	358	207	81	30	16	13
16	443	1,010	531	823	740	966	326	*192	75	29	17	12
17	330	812	508	695	690	972	308	189	69	29	16	12
18	*340	675	2,700	675	645	1,120	308	186	68	29	14	11
19	654	580	2,020	730	645	1,060	381	180	68	28	13	10
20	1,220	555	1,460	1,140	585	990	326	180	60	28	12	9.4
21	884	463	2,140	948	522	912	295	189	66	27	12	8.8
22	872	404	4,180	850	504	823	275	166	69	25	11	8.2
23	2,860	362	2,350	1,120	*540	867	262	154	*62	24	10	7.1
24	2,210	333	1,590	1,820	560	1,550	253	148	62	25	13	*8.2
25	1,460	545	1,200	1,580	600	1,480	250	143	60	24	16	8.8
26	1,020	1,650	1,040	1,520	735	1,290	246	132	56	22	29	8.2
27	750	1,590	1,190	1,610	770	1,090	246	129	56	19	25	8.8
28	590	1,880	1,000	1,430	755	960	266	124	66	19	20	9.4
29	483	2,100	2,100	1,320	740	834	243	124	68	18	16	9.4
30	407	2,100	1,740	3,660	-	806	377	119	71	17	15	9.4
31	347	-	1,340	4,850	-	806	-	109	-	16	14	-
Total	20,823	27,723	58,991	40,301	42,365	31,379	11,685	5,957	2,264	997	463	343.8
Mean	672	924	1,903	1,300	1,461	1,012	390	192	75.5	32.2	14.9	11.5
Cfsm	5.05	6.95	14.3	9.77	11.0	7.61	2.93	1.44	0.568	0.242	0.112	0.086
In.	5.82	7.75	16.50	11.27	11.85	8.77	3.27	1.67	0.63	0.28	0.13	0.10
Ac-ft	41,300	54,990	117,000	79,940	84,030	62,240	23,180	11,820	4,490	1,980	918	682

Calendar year 1951: Max 7,680 Min 5.6 Mean 771 Cfsm 5.80 In. 78.66 Ac-ft 557,900
Water year 1951-52: Max 5,650 Min 7.1 Mean 665 Cfsm 5.00 In. 68.04 Ac-ft 482,600

Peak discharge (base, 5,700 cfs).--Dec. 5 (12 p.m.) 7,560 cfs (9.54 ft); Dec. 22 (12:30 a.m.) 6,130 cfs (8.51 ft); Feb. 3 (8:30 p.m.) 6,120 cfs (8.50 ft).
* Discharge measurement made on this day.
Note.--Backwater from beaver dam or debris Oct. 1-22, Aug. 16 to Sept. 30.

Willamina Creek near Willamina, Oreg.

Location.--Lat 45°08'30", long. 123°29'35", in W½NE¼ sec. 13, T. 5 S., R. 7 W., on left bank 4½ miles north of Willamina and 7 miles upstream from mouth.

Drainage area.--65 sq mi, approximately.

Records available.--June 1934 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 315.1 ft above mean sea level (river-profile survey). Prior to Oct. 1, 1939, at datum 1.00 ft higher.

Average discharge.--18 years, 246 cfs.

Extremes.--Maximum discharge during year, 3,560 cfs Dec. 4 (gage height, 8.12 ft); minimum, 11 cfs Sept. 21, 23-26, 30.

1934-52: Maximum discharge, 6,380 cfs Feb. 17, 1949 (gage height, 10.25 ft), from rating curve extended above 3,400 cfs by logarithmic plotting; minimum, 9 cfs Sept. 3, 4, 1934, Sept. 9, 1935, Aug. 8-10, 19, Sept. 22-27, 1939, Aug. 17, 18, 1940.

Flood of Mar. 31, 1931, reached a stage of about 12 ft, from information by local resident (discharge, 9,500 cfs).

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

Revisions.--W 964: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 4

1.6	24	4.0	580
1.9	49	5.0	1,040
2.4	123	6.0	1,620
3.0	260	8.0	3,430

Dec. 5 to Sept. 30

1.2	8.8
1.4	15
1.6	24

Note.--Same as preceding table above 1.6 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	142	1,050	460	2,360	334	340	131	55	38	17	a14
2	349	131	875	404	2,050	308	352	121	53	37	17	a13
3	212	140	1,550	364	2,090	367	325	116	51	33	16	a12
4	116	132	2,210	334	2,220	400	308	111	51	32	*15	a12
5	81	120	2,530	328	1,470	388	310	108	51	32	a14	a12
6	62	113	1,430	305	1,050	400	316	103	50	30	a16	a15
7	53	104	975	288	800	370	295	101	47	28	a16	a16
8	46	103	718	275	644	352	268	101	46	25	a16	a18
9	41	122	552	426	548	370	245	98	45	25	a16	a20
10	39	265	463	470	484	576	232	95	46	24	a15	a18
11	65	860	394	442	494	533	*222	95	54	24	a15	a16
12	114	1,670	358	*382	470	484	215	93	51	25	a14	a15
13	121	1,230	316	349	414	446	245	93	47	25	a14	a15
14	167	910	288	334	407	516	240	103	49	23	a15	a15
15	170	674	270	331	385	488	215	93	49	22	a17	a14
16	157	533	280	300	361	435	200	*86	47	22	a17	a13
17	125	428	265	270	337	424	190	81	43	22	a16	a13
18	*140	364	680	270	313	449	190	78	42	22	a16	a13
19	222	319	700	272	302	432	202	78	41	22	a16	a12
20	288	290	548	331	285	407	181	76	39	22	a15	a12
21	290	255	946	302	265	391	167	75	43	22	a15	a11
22	349	230	1,490	290	265	367	159	72	41	22	a15	a13
23	1,030	208	975	319	*272	397	150	69	*40	22	a16	a11
24	855	192	714	424	280	572	146	67	41	23	a18	*11
25	568	238	564	446	310	576	144	64	40	21	a20	11
26	404	600	498	463	370	548	138	61	37	20	a20	11
27	310	556	480	512	382	498	136	59	37	19	a18	12
28	255	*669	442	505	361	452	134	59	42	18	a16	12
29	218	850	777	512	352	418	129	59	42	18	a15	12
30	185	804	656	1,240	-	410	140	57	44	17	a15	11
31	163	-	540	1,990	-	382	-	56	-	17	a14	-
Total	7,305	13,252	24,534	13,938	20,341	13,490	6,534	2,659	1,366	752	495	403
Mean	236	442	791	450	701	435	218	85.8	45.5	24.3	16.0	13.4
Cfsm	3.63	6.80	12.2	6.92	10.8	6.69	3.35	1.32	0.700	0.374	0.246	0.206
In.	4.18	7.58	14.04	7.97	11.64	7.72	3.74	1.52	0.78	0.43	0.28	0.23
Ac-ft	14,490	26,280	48,660	27,650	40,350	26,760	12,960	5,270	2,710	1,490	982	799

Calendar year 1951: Max 2,970 Min 10 Mean 335 Cfsm 5.15 In. 70.04 Ac-ft 242,800
Water year 1951-52: Max 2,530 Min 11 Mean 287 Cfsm 4.42 In. 60.11 Ac-ft 208,400

Peak discharge (base, 2,300 cfs).--Dec. 4 (11:30 p.m.) 3,560 cfs (8.12 ft); Feb. 1 (4 a.m.) 2,650 cfs (7.25 ft); Feb. 3 (7 p.m.) 2,660 cfs (7.26 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for South Yamhill River near Willamina and North Yamhill River at Pike.

South Yamhill River near Whiteson, Oreg.

Location.--Lat 45°10'10", long. 123°12'25", in NW¼ sec. 5, T. 5 S., R. 4 W., near left bank on downstream side of Whiteson Bridge on Pacific Highway West, 1 mile downstream from Salt Creek and 1¾ miles northwest of Whiteson.

Drainage area.--502 sq mi.

Records available.--July 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 82.30 ft above mean sea level, datum of 1929. Prior to Sept. 20, 1940, wire-weight gage at same site and datum.

Average discharge.--12 years, 1,649 cfs.

Extremes.--Maximum discharge during year, 20,100 cfs Dec. 5 (gage height, 40.86 ft); minimum, 8.5 cfs Sept. 25, 26 (gage height, 0.80 ft).
1940-52: Maximum discharge, 28,900 cfs Feb. 11, 1949 (gage height, 43.39 ft); minimum, that of Sept. 25, 26, 1952.

Remarks.--Records fair. Slight regulation during low-water periods from log pond upstream. Small diversions above station for irrigation.

Rating tables, water year 1951-52, except periods when rate of change in stage was used as a factor (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 11 to May 12)

Oct. 1 to May 12				May 13 to Sept. 30			
3.2	201	25.0	5,400	0.8	8.5	2.5	135
6.0	563	33.0	9,200	1.2	24	4.0	334
10.0	1,270	37.0	12,300	1.5	43	5.5	590
15.0	2,440	40.0	17,500				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	566	682	k6,820	k3,590	*12,100	2,110	1,760	804	229	145	28	24
2	1,310	605	8,250	k2,840	*15,300	1,910	1,600	709	223	132	27	23
3	2,340	568	7,690	2,360	14,500	1,800	1,650	642	200	118	26	18
4	1,300	626	*k10,400	2,390	*14,800	2,270	1,460	593	197	104	*29	16
5	672	554	k17,400	2,760	*k12,600	2,390	1,380	564	192	99	30	15
6	464	498	*k14,000	3,320	k9,320	2,560	1,370	540	189	94	23	14
7	362	470	k10,700	2,920	k6,110	2,430	*1,300	519	185	87	19	15
8	299	441	k7,170	*2,530	k4,040	2,170	1,160	508	174	80	22	22
9	247	423	k4,360	k2,660	3,190	1,960	1,050	498	161	72	24	30
10	215	798	3,100	4,880	2,760	2,480	956	481	147	65	25	37
11	203	k2,240	2,470	5,170	2,410	3,000	909	474	167	63	26	40
12	376	k5,540	2,110	k4,520	2,650	2,750	866	494	200	58	23	34
13	542	*6,780	1,840	k3,570	2,400	2,450	886	476	187	63	23	31
14	610	k5,620	1,610	3,100	2,210	2,760	1,040	498	175	64	23	29
15	1,100	k4,100	1,420	3,000	2,200	3,760	944	*549	189	63	21	26
16	1,050	2,990	1,390	2,920	2,080	3,250	862	471	186	48	20	24
17	800	2,300	1,400	2,440	1,900	2,730	799	435	163	40	25	20
18	593	1,870	k2,760	2,060	*1,760	3,080	782	415	153	46	30	18
19	*720	1,570	6,430	1,990	1,790	3,520	804	398	145	53	27	17
20	1,650	1,400	k5,400	2,610	1,890	3,270	838	388	135	51	24	16
21	2,010	1,270	4,100	3,170	1,770	2,890	750	392	134	49	22	16
22	1,690	1,080	k6,390	2,920	1,630	2,500	694	382	144	44	21	18
23	k3,070	966	7,760	3,310	1,970	2,260	658	345	147	45	21	14
24	5,060	876	k5,630	k4,870	2,110	2,780	629	331	119	45	24	11
25	k4,200	847	k3,800	5,920	2,170	3,440	622	319	*126	43	30	9.2
26	2,770	k2,650	2,900	k4,940	2,490	3,260	613	300	126	44	30	*11
27	1,860	*k3,990	3,130	4,480	2,700	2,830	596	273	116	40	47	15
28	1,380	4,630	3,140	4,150	2,560	2,450	614	257	123	36	44	15
29	1,090	5,440	k4,160	3,670	2,300	2,170	605	246	154	30	33	16
30	902	5,690	5,830	4,010	-	1,980	635	247	153	28	26	18
31	778	-	k4,710	*7,820	-	1,950	-	236	-	29	22	-
Total	40,229	67,514	168,270	110,890	135,710	81,160	28,832	13,784	4,939	1,978	815	612.2
Mean	1,298	2,250	5,428	3,577	4,680	2,618	961	445	165	63.8	26.3	20.4
Cfsm	2.59	4.48	10.8	7.13	9.32	5.22	1.91	0.886	0.329	0.127	0.052	0.041
In.	2.98	5.00	12.47	8.22	10.05	6.01	2.14	1.02	0.37	0.15	0.06	0.05
Ac-ft	79,790	133,900	333,800	219,900	269,200	161,000	57,190	27,340	9,800	3,920	1,620	1,210

Calendar year 1951: Max 18,800 Min 16 Mean 2,089 Cfsm 4.16 In. 56.49 Ac-ft 1,513,000
Water year 1951-52: Max 17,400 Min 9.2 Mean 1,789 Cfsm 3.56 In. 48.52 Ac-ft 1,299,000

Peak discharge (base, 9,300 cfs).--Dec. 5 (6 p.m.) 20,100 cfs (40.86 ft); Feb. 2 (6:30 p.m.) 15,800 cfs (39.24 ft).
* Discharge measurement made on this day.
k Computed by using rate of change in stage as a factor.

Haskins Creek Reservoir near McMinnville, Oreg.

Location.--Lat 45°18'40", long. 123°21'15", in NW¼ sec. 18, T. 3 S., R. 5 W., on control tower 250 ft above axis of dam and 11 miles northwest of McMinnville.

Drainage area.--7.1 sq mi, approximately.

Records available.--October 1951 to September 1952.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (surveys of city of McMinnville).

Extremes.--Maximum contents during year, 744 acre-ft at times Apr. 6-9, just before siphon priming occurred (elevation, 835.5 ft); reservoir empty most of time Oct. 16 to Mar. 28.

Remarks.--Dam is earth-fill construction, equipped with three siphon spillways, which act as overflow weirs until priming occurs (approximately 835.5 ft elevation). Capacity of reservoir is 733 acre-ft between elevations 761.5 ft, invert of outlet tunnel (about 5 ft in diameter), and 835 ft, crest of siphon spillways. Rated capacity of siphons is 350 cfs (for each siphon). Under normal operation, reservoir is filled in the spring (April or May), and drained when fall rains start. There is no planned storage during winter months; however, during periods of heavy runoff, inflow may be greater than capacity of outlet tunnel, and there may be some temporary storage.

Cooperation.--Elevations furnished by city of McMinnville.

Monthly elevation and contents, water year October 1951 to September 1952

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	807.5	265	-
Oct. 31	-	0	-265
Nov. 30	-	0	0
Dec. 31	-	0	0
Calendar year 1951	-	-	-
Jan. 31	-	a527	+527
Feb. 29	-	0	-527
Mar. 31	805.9	247	+247
Apr. 30	820.4	445	+198
May 31	835.0	733	+288
June 30	835.0	733	0
July 31	831.6	658	-75
Aug. 31	827.2	567	-91
Sept.30	823.0	489	-78
Water year 1951-52	-	-	+224

† Elevation at 12 p.m.
a No record of elevation; contents computed by interpolation between contents at 12 m. Jan. 30 and 12 m. Feb. 2.

Haskins Creek below reservoir near McMinnville, Oreg.

Location.--Lat 45°18'40", long. 123°20'55", in NE¼ sec. 18, T. 3 S., R. 5 W., on right bank 800 ft below dam of McMinnville water-supply reservoir and 11 miles northwest of McMinnville.

Drainage area.--7.1 sq mi, approximately.

Records avilable.--October 1951 to September 1952.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 710 ft above mean sea level (by barometer). Prior to Aug. 5, 1952, at site 600 ft upstream at different datum.

Extremes.--Maximum discharge during year, 558 cfs Apr. 9, when gage in outlet tunnel of reservoir failed; minimum daily, 0.3 cfs Oct. 1, 2.

Remarks.--Records good except those for Feb. 17 to Sept. 24, which are poor. All records presented herein include flow in pipeline which diverts 600 ft above station for McMinnville city water supply. Flow regulated by Haskins Creek Reservoir but during winter months reservoir is empty except when inflow exceeds the capacity of outlet tunnel.

Cooperation.--Gage heights for diversion furnished by city of McMinnville.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	14	179	55	274	60	4.8	4.4	9.5	3.2	4.8	3.0
2	3	12	146	50	*271	50	5	4.4	12	3.2	3.4	5.5
3	3.8	14	191	45	265	60	5	4.4	12	4.0	4.0	5.5
4	8.2	12	*237	40	309	65	5	4.4	11	5	6	3.2
5	7.1	11	255	40	353	65	5	4.4	9.5	3.6	6	3.2
6	5.9	11	146	38	313	85	60	4.4	9	3.4	4.8	3.0
7	5.1	10	103	35	233	70	*60	4.4	9	4.4	4.8	2.9
8	4.6	10	87	34	161	65	48	4.6	8.5	6	*4.8	2.9
9	4.1	12	70	46	134	70	200	4.6	11	7	4.0	2.9
10	3.6	30	*60	45	103	95	240	4.6	9	5.5	4.0	2.9
11	6.2	86	57	44	98	85	36	4.6	10	5.5	5.2	2.9
12	10	152	51	39	91	75	34	4.6	8.5	3.2	5.2	2.9
13	8.7	121	46	37	55	70	38	13	8.5	3.2	4.0	2.9
14	12	91	43	21	70	100	*38	14	9	6	3.3	2.9
15	34	70	42	4.0	66	85	32	13	8.5	7	4.0	2.9
16	68	57	43	4.0	60	80	30	13	8	7	4.0	3.3
17	33	46	45	4.0	60	85	29	13	7.5	4.4	4.0	3.3
18	15	40	108	4.0	55	90	27	12	7.5	4.4	3.3	3.3
19	15	36	89	4.0	50	80	13	12	8	4.4	3.3	*4.3
20	38	32	74	4.1	48	70	8.5	12	8	4.8	3.3	4.3
21	50	27	110	4.1	44	60	4.6	11	6.5	4.8	4.8	4.3
22	46	25	140	20	42	60	4.6	11	5	2.4	4.8	4.8
23	79	23	101	27	42	60	4.6	11	5	6	2.9	2.8
24	134	21	80	41	46	75	4.6	13	5	3.4	2.9	2.7
25	91	47	70	*37	55	80	4.6	13	5.5	4.8	2.9	2.7
26	39	103	64	36	65	75	4.6	11	*6	4.8	2.9	2.7
27	29	108	60	41	75	70	4.6	12	6	5.5	2.8	2.7
28	25	134	55	42	70	65	4.6	12	4.2	5.5	2.8	2.7
29	*21	140	82	44	65	13	5.0	*8	3.8	5.5	2.8	2.7
30	18	149	70	208	-	4.6	4.4	12	3.6	4.8	4.0	2.8
31	15	-	62	305	-	4.6	-	10	-	4.8	3.0	-
Total	829.9	1,644	2,966	1,398.2	3,573	2,072.2	964.5	279.8	234.6	147.5	122.8	98.9
Mean	26.8	54.8	95.7	45.1	123	66.8	32.2	9.03	7.82	4.76	3.96	3.30
Ac-ft	1,650	3,260	5,880	2,770	7,090	4,110	1,910	555	465	293	244	196

Adjusted for change in contents in Haskins Creek Reservoir

Mean	22.4	54.8	95.7	53.7	114	70.9	35.5	13.7	7.82	3.55	2.49	1.98
Cfsm	3.15	7.72	13.5	7.56	16.1	9.99	5.00	1.93	1.10	0.500	0.351	0.279
In.	3.64	8.61	15.53	8.71	17.32	11.51	5.57	2.23	1.23	0.58	0.40	0.31
Ac-ft	1,380	3,260	5,880	3,300	6,560	4,360	2,110	843	465	218	153	118

Observed

Calendar year 1951: Max - Min - Mean - Ac-ft -
Water year 1951-52: Max 353 Min 0.3 Mean 39.2 Ac-ft 28,420

Adjusted

Calendar year 1951: Mean - Cfsm - In. - Ac-ft -
Water year 1951-52: Mean 39.5 Cfsm 5.56 In. 75.64 Ac-ft 28,640

* Discharge measurement made on this day.

Note.--No gage-height record or stage-discharge relation indefinite Feb. 17 to Sept. 24; discharge estimated on basis of recorded range in stage when avsilable, 7 discharge measurements, and records for North Yamhill River at Pike.

North Yamhill River at Pike, Oreg.

Location.--Lat 45°22'10", long. 123°15'15", in NW¼ sec. 25, T. 2 S., R. 5 W., on right bank 500 ft downstream from Turner Creek, 0.5 mile southeast of Pike, and 4 miles northwest of Yamhill.

Drainage area.--66.8 sq mi.

Records available.--October 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 192.66 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Aug. 21, 1950, at datum 1.02 ft higher.

Extremes.--Maximum discharge during year, 3,600 cfs Dec. 4 (gage height, 7.54 ft); minimum, 6.0 cfs Sept. 21, 22, 23.
1948-52: Maximum discharge, 6,280 cfs Feb. 10, 1949 (gage height, 9.98 ft); minimum, that of Sept. 21, 22, 23, 1952.

Remarks.--Records good. Occasional diurnal fluctuations caused by small dams upstream; no seasonal regulation. Water supply for city of McMinnville is diverted from Haskins Creek above station and water supply for city of Yamhill is diverted from Turner Creek above station. Small diversions above station for irrigation.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 3				Dec. 4 to Sept. 30			
1.2	21	2.8	268	0.7	5.6	2.2	134
1.5	39	3.5	535	.9	10	2.8	275
1.9	79	4.5	1,070	1.1	18	3.5	535
2.3	140	5.5	1,750	1.4	36	4.5	1,070
				1.8	74	6.5	2,580

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	93	1,390	376	2,190	321	234	102	42	32	10	8.7
2	133	87	938	331	*1,940	296	237	93	40	29	10	8.0
3	83	99	1,630	305	1,830	365	221	87	38	26	9.6	7.2
4	54	95	2,540	281	1,950	372	214	84	36	23	9.2	7.2
5	41	83	*2,120	290	1,320	372	216	80	35	22	8.7	7.2
6	34	78	1,180	264	968	454	255	79	37	21	9.8	9.0
7	30	74	791	253	740	387	*253	75	35	20	10	9.6
8	28	72	610	242	585	354	224	74	34	18	9.8	12
9	25	86	482	474	499	365	288	71	32	17	9.8	13
10	24	243	410	466	446	526	475	67	30	16	9.0	11
11	41	838	358	458	442	458	192	67	40	16	9.0	9.8
12	59	1,120	324	365	422	422	186	66	38	17	8.7	9.2
13	59	720	296	331	372	383	211	65	36	17	8.2	9.6
14	92	530	*267	315	383	553	197	73	40	15	*9.2	9.2
15	105	416	253	324	354	490	181	*71	38	14	11	8.4
16	148	331	258	287	324	438	170	67	35	13	11	8.2
17	103	281	264	253	302	442	161	65	33	14	10	8.2
18	77	241	1,060	247	284	486	157	61	30	14	10	8.0
19	164	216	730	247	275	442	151	61	29	14	10	7.4
20	345	194	526	327	258	387	121	60	26	14	9.6	7.0
21	250	175	862	287	237	348	113	59	30	15	9.2	6.6
22	281	157	1,060	278	234	318	108	57	30	15	9.2	7.8
23	879	144	725	318	231	324	103	54	*29	14	10	7.0
24	595	135	553	499	247	410	100	51	34	15	11	6.8
25	381	273	450	*450	293	450	100	47	35	14	13	*7.0
26	247	874	410	442	376	442	94	46	29	13	13	7.4
27	189	795	418	482	395	387	92	45	30	12	11	7.7
28	157	868	402	462	365	358	92	42	37	11	10	7.4
29	*133	974	730	462	344	315	87	47	35	11	9.8	7.7
30	114	1,060	535	1,210	-	269	111	42	35	10	9.6	7.4
31	103	-	434	1,590	-	255	-	41	-	10	9.2	-
Total	5,033	11,352	23,006	12,916	18,608	12,189	5,344	1,999	1,030	512	307.6	250.9
Mean	162	378	742	417	642	393	178	64.5	34.3	16.5	9.92	8.36
Cfsm	2.43	5.66	11.1	6.24	9.61	5.86	2.66	0.966	0.513	0.247	0.149	0.125
In.	2.80	6.32	12.81	7.19	10.36	6.79	2.98	1.11	0.57	0.29	0.17	0.14
Ac-ft	9,980	22,520	45,630	25,620	36,900	24,180	10,600	3,960	2,040	1,020	610	498

Calendar year 1951: Max 2,540 Min 7.2 Mean 291 Cfsm 4.36 In. 59.13 Ac-ft 210,600
Water year 1951-52: Max 2,540 Min 6.6 Mean 253 Cfsm 3.79 In. 51.53 Ac-ft 183,600

Peak discharge (base, 2,500 cfs).--Dec. 4 (10 p.m.) 3,600 cfs (7.54 ft); Feb. 1 (11 p.m.) 3,000 cfs (6.94 ft).
* Discharge measurement made on this day.

Willamette River at Wilsonville, Oreg.

Location.--Lat 45°17'30", long. 122°46'30", in SW¼ sec. 23, T. 3 S., R. 1 W., on right bank 1 mile downstream from Corral Creek and 3 miles upstream from Molalla River at Boones Ferry, town of Wilsonville.

Drainage area.--8,400 sq mi, approximately.

Records available.--October 1948 to September 1952.

Gage.--Staff gage read twice daily. Datum of gage is at mean sea level, datum of 1929. Supplementary staff gage at Butteville 4 miles upstream, datum of which is 50 ft above mean sea level, datum of 1929. Records for the entire period of record obtained from gage at Butteville.

Extremes.--Maximum discharge during year, 146,000 cfs Feb. 6 (elevation at Butteville, 78.20 ft); minimum daily, 4,800 cfs Sept. 4, 5 (computed from records for station at Salem and South Yamhill River near Whiteson).
1948-52: Maximum discharge, 196,000 cfs Feb. 20, 1949 (elevation at Butteville, 85.20 ft; elevation at Wilsonville, 83.20 ft); minimum daily, 3,700 cfs Sept. 5-8, 1949 (computed from records for station at Salem).
Maximum stage known, about 105 ft at Wilsonville, Dec. 4, 1861.

Remarks.--Records excellent except those for periods of backwater from stoplogs, gates and locks at dam, which are fair. Flow slightly regulated by Cottage Grove, Fern Ridge, and Dorena Reservoirs. Many small diversions for irrigation above station.

Rating tables, water year 1951-52, except periods of backwater from stoplogs, gates and locks at dam at Oregon City (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 2		Dec. 3 to Sept. 30	
54.0	9,600	54.0	9,600
60.0	32,600	60.0	32,600
65.0	56,700	70.0	88,500
73.0	104,000	79.0	152,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,500	18,000	83,700	68,000	88,200	36,700	47,800	27,800	18,200	38,000	6,000	5,000
2	13,000	16,100	98,300	53,800	110,000	33,400	42,500	27,200	17,000	30,000	6,000	5,000
3	21,000	14,400	112,000	43,600	126,000	*30,500	39,000	25,100	14,800	24,000	6,000	5,000
4	27,000	13,200	116,000	37,600	136,000	29,200	37,200	22,500	15,200	20,000	6,000	4,800
5	22,000	12,900	124,000	38,700	144,000	29,400	35,900	20,900	15,200	17,000	6,000	4,800
6	17,000	12,200	*132,000	38,800	*145,000	29,800	36,500	19,400	15,800	16,000	5,500	5,000
7	14,000	11,400	134,000	37,200	134,000	29,000	40,800	18,800	15,800	15,000	5,500	5,500
8	11,000	10,600	116,000	34,400	98,800	26,100	*43,300	18,200	15,400	14,000	5,500	5,500
9	9,500	10,500	79,900	31,800	67,600	25,000	40,000	19,100	14,800	13,000	5,500	5,500
10	8,000	11,100	58,800	35,200	57,400	25,000	34,900	22,500	*14,300	12,000	5,500	6,000
11	7,500	15,000	47,900	46,900	49,900	29,900	31,700	22,500	14,400	11,000	5,500	6,500
12	7,500	29,100	42,000	53,800	45,800	31,700	29,500	22,800	14,700	11,000	6,000	6,000
13	11,000	51,100	39,000	49,200	43,700	30,700	28,900	23,000	14,100	10,000	6,000	5,500
14	13,000	67,800	37,300	40,200	40,000	29,000	30,400	23,500	13,500	9,000	6,000	5,700
15	18,000	70,700	34,400	36,800	38,600	29,500	30,400	25,300	13,700	8,500	5,500	5,200
16	20,000	62,100	31,700	36,000	35,300	27,500	28,800	25,300	15,500	8,500	5,500	5,200
17	19,000	48,200	29,000	31,800	38,700	25,300	27,900	23,900	14,800	8,000	5,500	5,200
18	15,000	34,800	30,700	27,700	38,900	24,700	27,200	24,200	13,400	7,500	5,500	5,200
19	14,000	30,100	48,400	25,500	35,700	27,300	29,400	24,000	12,800	7,500	5,500	5,000
20	19,500	26,800	59,200	26,100	36,000	27,700	32,800	*24,500	12,300	7,500	5,500	5,000
21	27,100	25,300	55,600	29,500	35,000	28,400	31,200	25,200	12,400	7,500	5,500	5,200
22	31,700	23,700	53,300	32,300	31,800	25,600	28,100	24,800	12,600	7,000	5,500	5,000
23	38,200	22,100	70,900	34,800	31,200	24,200	25,500	23,200	12,200	7,000	5,500	5,000
24	59,900	20,000	76,800	44,500	35,500	26,200	24,300	21,500	11,900	7,000	5,500	5,000
25	71,300	18,500	71,500	51,400	37,200	54,500	24,300	21,100	11,900	7,000	5,500	5,000
26	63,100	20,900	59,800	53,300	38,000	78,300	25,900	21,100	12,000	6,500	5,500	5,000
27	45,800	35,300	50,000	50,400	41,700	85,200	29,000	21,000	12,000	6,500	5,500	5,000
28	34,800	41,600	50,000	46,400	41,600	75,900	29,800	20,400	12,000	6,500	5,500	5,000
29	*28,400	52,000	55,400	43,100	38,800	66,200	30,800	20,300	15,000	6,000	5,500	5,000
30	24,000	64,200	66,400	43,700	-	56,400	29,700	19,300	29,000	6,000	5,500	5,000
31	20,300	-	72,500	58,600	-	50,900	-	19,000	-	6,000	5,000	-
Total	737,900	889,500	‡2,136.3	‡1,280.9	‡1,834	‡1,145	972,900	697,200	436,300	380,500	174,000	158,800
Mean	23,800	29,650	68,910	41,320	63,240	36,940	32,430	22,490	14,540	11,630	5,613	5,227
Cfsm	2.83	3.53	8.20	4.92	7.53	4.40	3.86	2.68	1.73	1.38	0.688	0.622
In.	3.27	3.94	9.48	5.67	8.12	5.07	4.31	3.09	1.93	1.60	0.77	0.69
Ac-ft	‡1,463	‡1,764	‡4,237	‡2,541	‡3,638	‡2,271	‡1,930	‡1,363	865,400	715,000	345,100	311,000

Calendar year 1951: Max 135,000 Min 4,200 Mean 32,000 Cfsm 3.81 In. 51.73 Ac-ft 23,160,000
Water year 1951-52: Max 145,000 Min 4,800 Mean 29,570 Cfsm 3.52 In. 47.92 Ac-ft 21,460,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Note.--Backwater from stoplogs, gates and locks at dam at Oregon City Oct. 1-19, June 26 to Sept. 30; discharge computed on basis of records for station at Salem represents flow into the gage pool, which, because of pondage, may not represent flow passing gage.

Molalla River above Pine Creek, near Wilhoit, Oreg.

Location.--Lat 45°00'30", long. 122°29'00", near line between secs. 30 and 31, T. 6 S., R. 3 E., on right bank 1,700 ft upstream from Pine Creek and 5 miles southeast of Wilhoit.

Drainage area.--96 sq mi, approximately.

Records available.--October 1935 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (by barometer). Prior to Sept. 30, 1945, water-stage recorder at present site at datum 2.02 ft higher.

Average discharge.--17 years, 516 cfs.

Extremes.--Maximum discharge during year, 5,010 cfs Feb. 4 (gage height, 10.40 ft); minimum, 30 cfs Sept. 20-22, 30.
1935-52: Maximum discharge, 12,200 cfs Jan. 7, 1948 (gage height, 13.17 ft), from rating curve extended above 4,800 cfs on basis of shape of previous curve defined to 7,000 cfs; maximum gage height, 13.95 ft Feb. 17, 1949; minimum discharge, 19 cfs Aug. 30 to Sept. 2, 1940.

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 5-21)

Oct. 1 to Dec. 21				Dec. 22 to Sept. 30			
4.0	115	6.0	1,160	3.1	24	4.4	265
4.6	260	9.0	3,240	3.4	50	5.0	635
4.9	410			3.7	87	7.0	2,150
				4.1	160	10.0	4,650

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*560	225	2,950	558	4,050	489	761	777	290	865	72	37
2	1,240	208	1,710	477	3,930	441	753	649	265	635	69	35
3	1,310	202	*1,930	435	3,650	447	737	558	*270	509	68	34
4	648	205	2,260	405	4,530	447	713	483	270	429	66	34
5	350	188	2,350	387	2,590	423	969	435	290	369	62	37
6	248	178	1,340	363	1,700	453	1,300	399	275	315	61	38
7	205	165	968	333	1,290	435	1,140	411	259	270	61	38
8	168	158	783	310	1,090	405	873	544	218	244	60	42
9	143	160	648	424	985	429	721	551	215	218	62	51
10	125	284	576	593	905	600	670	537	222	204	60	42
11	158	827	592	495	905	*551	649	579	235	190	58	38
12	332	1,470	648	405	833	483	635	558	215	176	56	38
13	350	1,210	576	357	713	447	721	614	187	165	54	39
14	762	1,010	544	333	656	429	785	721	352	*154	53	35
15	762	*762	473	300	649	387	705	705	465	145	53	33
16	560	552	568	270	628	363	663	656	345	135	52	32
17	392	424	*520	239	586	375	713	684	290	131	51	31
18	368	345	1,440	226	530	398	985	677	256	128	51	31
19	632	335	1,120	226	495	363	1,060	670	235	122	50	31
20	932	356	825	248	441	339	785	670	235	115	49	30
21	704	320	965	222	405	321	663	698	265	113	47	30
22	797	280	2,100	215	381	315	*607	607	239	110	46	30
23	3,080	254	1,270	248	405	407	572	551	215	105	46	31
24	1,590	236	913	547	405	2,190	614	537	235	103	46	32
25	1,000	317	713	614	465	2,490	721	495	226	97	46	32
26	748	1,390	635	649	614	1,980	753	453	215	92	45	32
27	552	1,200	614	705	656	1,530	785	447	212	87	44	32
28	424	1,510	600	*677	614	1,330	921	459	290	83	43	31
29	340	1,710	1,010	698	558	1,060	691	399	1,860	80	*41	31
30	280	1,980	857	2,260	-	961	753	345	1,480	77	39	30
31	248	-	670	3,620	-	937	-	321	-	74	38	-
Total	20,008	18,461	33,168	17,839	35,659	22,226	23,418	17,190	10,806	6,540	1,649	1,037
Mean	645	615	1,070	575	1,230	717	781	555	354	211	53.2	34.6
Cfsm	6.72	6.47	11.1	5.99	12.8	7.47	8.14	5.78	3.69	2.20	0.554	0.360
In.	7.75	7.15	12.85	6.91	13.81	8.61	9.07	6.66	4.11	2.53	0.64	0.40
Ac-ft	39,690	36,620	65,790	35,380	70,730	44,080	46,450	34,100	21,040	12,970	3,270	2,060

Calendar year 1951: Max 3,670 Min 24 Mean 584 Cfsm 6.08 In. 82.57 Ac-ft 422,800
Water year 1951-52: Max 4,530 Min 30 Mean 568 Cfsm 5.92 In. 80.49 Ac-ft 412,200

Peak discharge (base, 3,600 cfs).--Oct. 23 (8 to 10 a.m.) 4,030 cfs (10.03 ft); Feb. 4 (12:30 a.m.) 5,010 cfs (10.40 ft).
* Discharge measurement made on this day.

Molalla River near Canby, Oreg.

Location.--Lat 45°14'40", long. 122°41'10", in NE¼ sec. 9, T. 4 S., R. 1 E., on downstream side of center pier of bridge 1½ miles downstream from Milk Creek and 1½ miles south of Canby.

Drainage area.--323 sq mi.

Records available.--August 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 105.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 24, 1933, staff gage at same site and datum.

Average discharge.--24 years, 1,082 cfs.

Extremes.--Maximum discharge during year, 9,040 cfs Feb. 2 (gage height, 8.56 ft); minimum daily, 57 cfs Sept. 21, 22, 24, 25.

1928-52: Maximum discharge, 25,100 cfs Jan. 7, 1948 (gage height, 14.9 ft); minimum, 25 cfs Sept. 14, 1938; minimum daily, 38 cfs Sept. 7, 1935, Aug. 18, 23, 1940.

Revisions.--Figures of maximum discharge for the water years 1930 and 1932 have been revised to 12,100 cfs Dec. 14, 1929 (gage height, 9.8 ft) and 12,400 cfs Mar. 19, 1932 (gage height, 10.3 ft), superseding figures published in Water-Supply Papers 709 and 739, respectively.

Remarks.--Records good except those for periods of no gage-height record or those below 100 cfs, which are fair. A few small diversions above station for irrigation.

Revisions.--Revised figures of discharge for periods in the water years 1929, 1930, and 1932, superseding those published in Water-Supply Papers 694, 709, and 739, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1929		1930-Con.		1932-Con.	
Apr. 14	3,440	Jan. 21	340	Sept. 6	60
15	3,590	22	330	7	60
30	2,010	23	320	8	58
		24	310	9	58
1930		25	300	10	55
Jan. 11	560	26	310	11	55
12	520	Apr. 8	640	12	53
13	490	28	920	13	55
14	460			14	53
15	440	1932		15	53
16	420	Sept. 1	74	16	55
17	410	2	68	17	55
18	390	3	63	18	55
19	370	4	63	19	55
20	350	5	66		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
April 1929.....	3,590	760	1,640	5.08	5.67	97,600
Water year 1928-29.	5,140	41	793	2.46	33.32	574,000
Calendar year 1929.	7,500	41	784	2.43	32.97	568,000
January 1930.....	2,050	300	659	2.04	2.35	40,500
April.....	1,040	480	641	1.98	2.21	38,100
Water year 1929-30.	7,500	48	748	2.32	31.44	541,000
Calendar year 1930.	5,420	49	689	2.13	28.98	499,000
September 1932.....	74	48	57.1	.177	.20	3,400
Water year 1931-32.	9,750	48	1,210	3.75	50.79	875,000
Calendar year 1932.	9,750	40	1,240	3.84	52.46	904,000

Molalla River near Canby, Oreg.--Continued

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 1-5, Dec. 22, Jan. 31, May 21 to June 29)

Oct. 1 to Jan. 31				Feb. 1 to Sept. 30			
1.2	260	4.0	2,120	0.2	54	3.0	1,340
2.0	590	5.0	3,260	.6	122	5.0	3,280
3.0	1,250	7.0	6,460	1.0	220	7.0	6,200
				1.5	405	8.5	8,920
				2.0	655		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	625	490	*5,810	1,430	7,150	1,310	1,670	1,570	470	2,550	140	72
2	1,470	442	4,230	1,200	*7,980	1,160	1,570	1,310	*432	1,740	135	70
3	*1,990	430	4,090	1,070	6,630	1,100	1,510	1,140	410	1,320	130	68
4	1,190	459	4,910	1,060	8,140	1,150	1,410	979	400	1,060	125	68
5	712	410	6,140	988	5,460	1,110	1,650	868	414	874	120	68
6	486	382	3,790	981	3,630	1,140	2,120	805	410	733	120	88
7	378	350	2,580	904	2,800	1,100	2,050	763	369	616	115	89
8	306	326	1,980	834	2,340	1,030	1,670	913	324	540	115	93
9	288	326	1,600	876	2,070	1,040	1,400	986	310	485	120	112
10	284	549	1,380	1,660	1,880	*1,340	1,260	926	313	418	120	108
11	288	964	1,290	1,600	1,840	1,320	1,210	972	387	382	115	97
12	406	2,920	1,320	1,350	1,760	1,220	1,150	946	396	360	110	93
13	585	3,030	1,280	1,140	1,530	1,140	1,250	993	320	332	105	91
14	953	3,010	1,140	1,080	1,410	1,080	1,440	1,130	439	*313	100	80
15	1,480	2,280	1,010	953	1,390	972	1,330	1,200	1,050	288	100	75
16	1,110	*1,700	1,100	827	1,360	900	1,210	1,070	733	271	100	73
17	820	1,360	*1,090	748	1,290	842	1,200	1,090	585	254	100	70
18	652	1,130	2,220	700	1,200	985	1,510	1,100	500	244	95	74
19	876	1,030	2,740	664	1,170	939	1,800	1,060	446	235	95	65
20	1,510	1,060	1,950	694	1,100	900	1,470	1,070	410	226	95	64
21	1,300	974	1,730	682	1,010	868	*1,200	1,230	495	220	90	57
22	1,310	869	3,780	688	932	848	1,080	1,100	475	212	90	57
23	5,000	778	2,800	876	1,160	906	1,020	952	428	201	90	58
24	3,540	706	2,060	1,350	1,340	3,750	1,020	880	441	201	90	57
25	2,120	712	1,630	1,700	1,400	5,580	1,180	823	485	190	90	57
26	1,480	2,250	1,390	1,600	1,670	4,710	1,270	733	450	177	90	60
27	1,110	2,500	1,410	1,680	1,700	3,440	1,270	691	436	172	85	60
28	897	3,270	1,410	1,550	1,570	2,900	1,610	697	600	160	85	60
29	754	3,700	2,090	*1,530	1,420	2,380	1,340	644	4,010	153	*84	60
30	652	3,880	2,310	2,810	-	2,070	1,300	550	4,680	148	80	60
31	560	-	1,820	5,950	-	2,000	-	500	-	145	76	-
Total	35,132	42,287	74,080	41,175	74,332	51,210	42,170	29,691	21,618	15,220	3,205	2,204
Mean	1,133	1,410	2,390	1,328	2,563	1,652	1,406	958	721	491	103	73.5
Cfsm	3.51	4.37	7.40	4.11	7.93	5.11	4.35	2.97	2.23	1.52	0.319	0.228
In.	4.05	4.87	8.53	4.74	8.56	5.90	4.86	3.42	2.49	1.75	0.37	0.25
Ac-ft	69,680	83,880	146,900	81,670	147,400	101,600	83,640	58,890	42,880	30,190	6,360	4,370

Calendar year 1951: Max 9,010 Min 50 Mean 1,338 Cfsm 4.14 In. 56.26 Ac-ft 968,600
Water year 1951-52: Max 8,140 Min 57 Mean 1,181 Cfsm 3.66 In. 49.79 Ac-ft 857,500

Peak discharge (base, 7,200 cfs).--Feb. 2 (11 a.m.) 9,040 cfs (8.56 ft); June 29 (8 p.m.) 7,710 cfs (7.89 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 1-28, Aug. 30 to Sept. 2, Sept. 14, 15; discharge estimated on basis of records for station above Pine Creek near Wilhoit.

Pudding River near Mount Angel, Oreg.

Location.--Lat 45°03'50", long. 122°49'45", in SE¼ sec. 8, T. 6 S., R. 1 W., on left bank on downstream side of Cline Bridge, 1½ miles west of Mount Angel and 4 miles upstream from Little Pudding River.
Drainage area.--204 sq mi.
Records available.--October 1939 to September 1952.
Gage.--Water-stage recorder. Datum of gage is 119.76 ft above mean sea level, datum of 1929. Prior to Sept. 22, 1945, staff or wire-weight gages, at same site and datum.
Average discharge.--12 years (1939-44, 1945-52), 696 cfs.
Extremes.--Maximum discharge during year, 5,260 cfs Feb. 4 (gage height, 24.89 ft); minimum, 14 cfs Sept. 24, 25.
1939-52: Maximum discharge, 15,000 cfs Feb. 17, 1949; maximum gage height, 30.38 ft Feb. 18, 1949; minimum discharge, 8 cfs Aug. 18, 22, 1951.
Remarks.--Records good except those for periods of backwater from debris or no gage-height record, which are fair. Small diversions for irrigation above station; no regulation.
Revisions (water years).--W 1094: 1943. W 1218: Drainage area. Revised figures of discharge, in cubic feet per second, for a period in the water year 1943, superseding figures published in Water-Supply Paper 984, are given herewith:

1942	
Oct. 12	45
13	30
14	33
15	55
16	35
17	31

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October 1942	1,203	250	20	38.8	0.190	0.22	2,390
Calendar year 1942.	254,637	5,480	19	698	3.42	46.42	506,000
Water year 1942-43.	318,743	7,760	20	873	4.28	58.10	632,000

Rating tables, water year 1951-52, except periods of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 21				Dec. 22 to Sept. 30			
1.5	60	10.0	1,190	0.4	13	10.0	1,280
2.0	92	14.0	1,900	1.0	41	15.0	2,180
3.0	177	18.0	2,770	1.5	70	20.0	3,400
4.0	290	22.0	4,120	3.0	200	25.0	5,300
6.0	570			5.0	455		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	185	452	2,230	1,400	3,730	1,090	1,140	636	127	858	46	23
2	*491	404	2,250	1,190	4,620	984	1,090	539	*118	648	44	20
3	711	385	2,280	1,050	4,690	927	1,050	478	104	520	44	19
4	469	425	3,040	1,100	5,160	1,000	954	430	95	431	43	18
5	271	365	3,930	1,160	4,630	988	930	390	85	362	38	22
6	181	337	3,590	1,190	3,470	966	949	369	83	314	36	26
7	131	312	2,870	1,120	2,740	910	918	353	81	275	36	27
8	107	293	2,270	1,020	2,240	838	818	386	74	236	36	28
9	92	280	1,850	950	1,860	822	736	401	70	210	36	34
10	83	511	1,510	1,370	1,570	*1,160	694	363	67	189	36	39
11	86	796	1,250	1,490	1,360	1,140	664	355	99	175	36	32
12	196	1,510	1,100	1,470	1,230	1,080	628	336	147	160	32	28
13	317	1,650	969	1,310	1,060	1,000	638	331	121	154	31	27
14	464	1,840	860	1,190	962	947	680	370	160	139	30	27
15	679	1,640	784	1,100	957	888	654	394	404	*122	a30	25
16	564	1,340	814	995	937	816	602	343	256	109	a32	23
17	416	1,140	832	881	869	752	574	323	198	100	a32	21
18	324	988	1,300	802	811	806	600	293	168	97	a32	20
19	467	884	1,810	774	810	824	654	278	150	91	a30	18
20	876	868	1,550	842	848	794	570	294	138	90	a28	18
21	807	796	1,390	908	805	776	*515	288	162	88	a26	16
22	792	729	2,240	911	768	741	490	254	149	81	a27	16
23	1,540	651	2,090	1,160	1,090	741	470	226	134	77	a28	16
24	2,070	596	1,740	1,460	1,290	1,520	460	206	155	76	a30	14
25	1,650	585	1,430	1,570	1,270	2,180	472	193	162	71	a30	14
26	1,220	1,040	1,240	1,490	1,400	2,050	476	176	138	65	a30	15
27	939	1,240	1,270	1,480	1,400	1,860	486	161	130	62	a29	17
28	778	1,450	1,320	1,350	1,290	1,640	623	148	166	59	*28	16
29	666	1,690	1,600	*1,250	1,160	1,420	545	148	732	53	28	18
30	578	1,840	1,800	1,630	-	1,290	530	140	1,190	51	25	16
31	507	-	1,640	2,800	-	1,290	-	128	-	47	23	-
Total	18,657	27,037	54,849	38,413	55,027	34,240	20,610	9,730	5,863	6,010	1,012	653
Mean	602	901	1,769	1,239	1,897	1,105	687	314	195	194	32.6	21.8
Cfsm	2.95	4.42	8.67	6.07	9.30	5.42	3.37	1.54	0.956	0.951	0.160	0.107
In.	3.40	4.93	10.00	7.00	10.03	6.24	3.76	1.77	1.07	1.10	0.18	0.12
Ac-ft	37,010	53,630	108,800	76,190	109,100	67,910	40,880	19,300	11,630	11,920	2,010	1,300

Calendar year 1951: Max 4,980 Min 9 Mean 798 Cfsm 3.91 In. 53.10 Ac-ft 577,900
Water year 1951-52: Max 5,160 Min 14 Mean 743 Cfsm 3.64 In. 49.60 Ac-ft 539,700

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for station at Aurora.
Note.--Backwater from debris Oct. 1-23, Apr. 28 to June 29.

Butte Creek at Monitor, Oreg.

Location.--Lat 45°06'05", long. 122°44'50", in SE¼SE¼ sec. 25, T. 5 S., R. 1 W., on left downstream abutment of highway bridge in Monitor, 5½ miles upstream from mouth.

Drainage area.--57.4 sq mi.

Records available.--October 1940 to September 1952 in reports of Geological Survey (discontinued). January to December 1936 in reports of State engineer.

Gage.--Staff gage read once or twice daily. Datum of gage is 151.35 ft above mean sea level, datum of 1929. Jan. 20 to Oct. 22, 1936, staff gage at present site at different datum. Oct. 23 to Dec. 19, 1936, staff gage at site 70 ft downstream at different datum.

Average discharge.--12 years, 224 cfs (revised).

Extremes.--Maximum discharge during year, 2,170 cfs Feb. 2 (gage height, 7.9 ft, from graph based on gage readings); minimum, 6 cfs Sept. 27-30.
1936, 1940-52: Maximum discharge, 5,600 cfs Feb. 17, 1949 (gage height, 13.5 ft, from graph based on gage readings); minimum observed, 3.6 cfs Sept. 18, 1951.
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
1044.....	1945	Feb. 7, 1945	2,190	8.7
1094.....	1947	Dec. 15, 1946	4,620	13.0
1184.....	1950	Jan. 22, 1950	2,840	9.1

Remarks.--Records fair. Small diversions above station for irrigation. Some diurnal fluctuation caused by mills at Scotts Mills.

Revisions.--W 1218: Drainage area. Revised figures of discharge for water years 1945 (complete daily table given below) and for periods in the water years 1946, 1949, and 1950, superseding figures published in Water-Supply Papers 1044, 1064, 1154, and 1184, are given herein.

Discharge, in cubic feet per second, water year October 1944 to September 1945

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	38	164	68	129	132	351	345	170	35	11	8
2	16	68	136	73	151	127	303	321	156	33	11	8
3	14	138	132	73	241	138	288	315	141	31	10	8
4	16	275	114	81	244	132	273	273	131	28	10	27
5	28	141	106	144	352	127	267	243	122	25	10	57
6	29	146	108	247	489	123	369	213	109	25	9	80
7	20	146	136	455	878	132	408	195	105	23	9	60
8	18	110	123	395	1,580	132	1,040	186	100	22	8	33
9	16	125	106	266	801	118	714	176	96	20	8	30
10	14	99	93	229	567	808	567	183	94	20	8	27
11	12	82	82	191	557	516	669	273	87	19	8	23
12	12	71	75	208	472	506	597	393	80	19	8	19
13	16	60	68	320	1,170	557	513	477	80	16	8	17
14	15	52	61	392	761	618	453	543	82	15	8	17
15	14	49	58	502	523	557	414	636	73	16	8	16
16	14	45	55	523	421	492	381	1,040	67	15	7	20
17	12	41	52	516	428	543	339	1,040	60	15	6	19
18	12	38	49	546	382	516	315	813	54	14	6	16
19	12	36	49	441	304	563	318	561	50	14	6	15
20	11	32	51	349	253	1,240	357	453	47	12	5	19
21	11	31	57	278	214	944	399	387	43	12	5	47
22	10	29	55	229	188	829	393	351	43	29	5	49
23	11	38	55	194	172	716	387	309	41	23	5	47
24	11	75	50	180	158	611	384	261	40	17	5	46
25	10	59	47	172	144	526	327	234	38	17	7	41
26	10	151	45	132	136	448	282	213	35	16	26	34
27	9	183	45	121	146	388	237	273	35	14	23	32
28	9	129	55	110	136	375	243	282	36	12	16	27
29	9	106	71	101	-	336	270	276	36	12	12	23
30	11	123	73	99	-	304	363	207	35	11	10	20
31	16	-	65	114	-	284	-	189	-	11	9	-
Total	434	2,716	2,436	7,749	11,997	13,838	12,221	11,663	2,286	591	287	885
Mean	14.0	90.5	78.6	250	428	446	407	376	76.2	19.1	9.26	29.5
Cfsm	0.244	1.58	1.37	4.36	7.46	7.77	7.09	6.55	1.33	0.333	0.161	0.514
In.	0.28	1.76	1.58	5.02	7.77	8.97	7.92	7.56	1.48	0.38	0.19	0.57
Ac-ft	861	5,390	4,830	15,370	23,800	27,450	24,240	23,130	4,530	1,170	569	1,760

Calendar year 1944: Max 591 Min 5 Mean 109 Cfsm 1.90 In. 25.76 Ac-ft 78,860
Water year 1944-45: Max 1,580 Min 5 Mean 184 Cfsm 3.21 In. 43.48 Ac-ft 133,100

Butte Creek at Monitor, Oreg.--Continued

Revised figures of discharge, in cubic feet per second, water years 1946, 1949, and 1950

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1945		1945-Con.		1949-Con.		1949-Con.	
Nov. 1	70	Nov. 22	339	June 6	70	June 26	32
2	76	23	288	7	65	27	36
3	87	24	276	8	60	28	33
4	87	25	393	9	55	29	64
5	98	26	936	10	52	30	63
6	96			11	50		
7	96	1949		12	47	1950	
8	87	May 24	93	13	44	Jan. 21	2,710
9	101	25	85	14	40	22	2,590
10	219	26	80	15	37	23	1,780
11	255	27	75	16	35	24	1,140
12	270	28	70	17	35	Feb. 8	875
13	264	29	70	18	34	15	990
14	261	30	65	19	33	16	1,560
15	381	31	65	20	36	17	1,220
16	411	June 1	140	21	37	24	1,790
17	435	2	130	22	33	25	2,350
18	729	3	100	23	32	26	1,560
19	831	4	85	24	31	27	1,110
20	693	5	80	25	30	28	860
21	477						

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
November 1945.....	14,580	2,660	70	486	8.47	9.45	28,920
Calendar year 1945...	93,139	2,660	5	255	4.44	60.35	184,700
Water year 1945-46...	90,529	2,660	8	248	4.32	58.66	179,600
May 1949.....	7,480	1,080	65	241	4.20	4.85	14,840
June.....	1,619	140	30	54.0	.941	1.05	3,210
Water year 1948-49...	90,337.7	3,980	5.9	248	4.32	58.51	179,200
Calendar year 1949...	79,826.7	3,980	5.9	219	3.82	51.71	158,300
January 1950.....	20,684	2,710	100	667	11.6	13.40	41,030
February.....	20,427	2,350	60	730	12.7	13.23	40,520
Water year 1949-50...	95,754.4	2,710	6.8	262	4.56	62.03	189,900
Calendar year 1950...	125,317.4	3,400	6.8	343	5.98	81.19	248,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	72	1,000	336	1,640	262	314	268	61	321	20	9.4
2	*356	61	692	264	2,020	223	304	230	*61	230	21	8.8
3	340	56	*960	240	1,800	230	290	189	59	180	21	7.6
4	164	59	1,160	256	*1,640	244	276	176	57	143	18	7.0
5	88	54	1,360	244	1,060	244	296	170	55	118	18	8.2
6	65	50	848	248	753	251	338	170	55	84	17	11
7	40	43	612	222	594	230	338	173	53	91	17	11
8	36	40	504	198	482	220	286	166	51	88	18	12
9	27	38	428	208	410	227	248	166	48	81	18	14
10	25	120	324	504	356	*296	234	166	48	78	16	15
11	26	216	280	396	335	293	237	163	53	76	16	13
12	51	648	244	320	314	276	216	156	66	76	14	12
13	76	592	226	240	272	258	279	153	53	63	13	11
14	130	568	205	244	258	244	248	170	50	*53	12	10
15	197	432	184	226	258	220	223	176	118	51	12	9.4
16	164	*316	219	184	265	203	210	150	94	46	13	9.4
17	106	304	*208	156	237	189	199	160	72	39	12	8.8
18	80	219	600	146	223	220	244	137	68	37	12	8.2
19	125	184	604	142	223	210	293	140	63	36	12	8.2
20	282	191	456	174	206	203	251	140	57	36	12	7.6
21	230	160	396	170	193	210	*189	140	76	34	11	7.6
22	203	135	816	170	186	206	183	116	59	34	11	7.0
23	872	116	600	252	265	206	180	110	57	34	9.4	7.0
24	560	110	472	368	300	753	180	101	61	32	8.8	7.0
25	360	116	392	388	304	825	193	94	61	31	8.8	6.4
26	244	488	320	352	346	678	193	91	59	30	8.8	6.4
27	198	460	356	364	335	582	199	81	55	28	10	6
28	149	576	336	328	314	510	276	84	63	26	*10	6
29	120	652	472	*304	282	426	189	72	753	25	10	6
30	104	656	472	760	-	386	176	68	514	22	11	6
31	88	-	412	1,560	-	352	-	66	-	21	11	-
Total	5,596	7,732	16,158	9,964	15,871	9,877	7,282	4,442	3,000	2,254	421.8	267.0
Mean	181	258	521	321	547	319	243	143	100	72.7	13.6	8.90
Cfsm	3.15	4.49	9.08	5.59	9.53	5.56	4.23	2.49	1.74	1.27	0.237	0.155
In.	3.63	5.01	10.47	6.46	10.28	6.40	4.72	2.88	1.94	1.46	0.27	0.17
Ac-ft	11,100	15,340	32,050	19,760	31,480	19,590	14,440	8,810	5,950	4,470	837	530

Calendar year 1951: Max 1,990 Min 3.6 Mean 245 Cfsm 4.27 In. 58.01 Ac-ft 177,500
Water year 1951-52: Max 2,020 Min 6 Mean 226 Cfsm 3.94 In. 53.69 Ac-ft 164,400

Peak discharge (base, 1,200 cfs).--Dec. 4 (about 10 p.m.) 1,760 cfs (7.2 ft); Feb. 2 (about 2 p.m.) 2,170 cfs (7.9 ft).

* Discharge measurement made on this day.

Pudding River at Aurora, Oreg.

Location.--Lat 45°14'00", long. 122°45'00", in SE¼ sec. 12, T. 4 S., R. 1 W., on upstream side of highway bridge at Aurora, half a mile upstream from Mill Creek.

Drainage area.--479 sq mi.

Records available.--October 1928 to September 1952.

Gage.--Wire-weight gage read twice daily October to June and once daily thereafter. Datum of gage is 77.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 2, 1934, staff gage at same site and datum. June 1 to Sept. 15, 1947, temporary staff gage 40 ft upstream at same datum.

Average discharge.--24 years, 1,167 cfs.

Extremes.--Maximum discharge during year, 7,250 cfs Feb. 5 (gage height, 18.55 ft); minimum, 53 cfs Sept. 25, 26.
1928-52: Maximum discharge, 25,400 cfs Dec. 30, 1937 (gage height, 24.5 ft, from graph based on gage readings), from rating curve extended above 16,000 cfs; minimum, 37 cfs Sept. 9, 12, 1935.
Maximum stage known, 25.0 ft about Jan. 7, 1923 (discharge, 27,900 cfs, from subsequent rating curve extended above 16,000 cfs).

Remarks.--Records good. Small diversions above station; slight regulation at times in summer by mills on tributaries.

Revisions (water years).--W 1094: 1923(M), 1931, 1934, 1936(M), 1938, 1943. W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 5				Feb. 6 to Sept. 30	
1.0	151	8.0	1,850	0.0	47
2.0	300	14.0	4,180	.8	126
4.0	710	19.0	7,700	2.0	300

Note.--Same as preceding table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	197	735	3,760	2,840	5,040	2,020	1,970	980	280	1,680	84	62
2	*497	642	*4,340	2,350	*6,240	1,840	1,770	1,040	*269	1,380	81	61
3	968	581	4,260	1,950	7,110	1,650	1,700	925	253	1,040	80	60
4	1,060	557	4,700	1,800	7,060	1,670	1,580	838	232	812	84	57
5	748	585	5,430	2,050	7,180	1,740	1,490	768	223	695	80	57
6	491	557	6,030	2,220	6,710	1,730	1,480	710	210	581	72	59
7	359	509	5,680	2,240	6,180	1,640	1,500	670	199	513	66	63
8	283	476	5,210	2,060	5,590	1,510	1,420	675	188	451	65	64
9	238	456	4,700	1,810	5,000	1,400	1,270	735	181	383	68	76
10	208	517	4,060	1,960	4,210	*1,550	1,170	725	173	340	70	81
11	195	830	3,350	2,920	3,430	1,870	1,080	682	180	295	71	85
12	204	1,700	2,540	3,000	2,700	1,870	1,040	670	226	269	71	93
13	343	2,810	2,100	2,670	2,240	1,740	1,010	640	293	246	68	81
14	509	3,120	1,720	2,320	1,870	1,640	1,050	650	290	234	62	76
15	768	3,140	1,490	2,100	1,730	1,690	1,080	712	447	*218	63	72
16	955	2,800	1,360	1,850	1,710	1,540	1,020	735	662	192	64	75
17	805	2,300	1,430	1,630	1,640	1,380	960	660	497	172	64	67
18	645	1,860	*1,610	1,450	1,540	1,370	940	628	394	159	67	64
19	549	1,570	3,020	1,340	1,470	1,620	995	579	341	152	71	60
20	730	1,420	3,240	1,330	1,660	1,570	1,010	561	305	148	70	59
21	1,200	1,350	2,910	1,630	1,760	1,480	*900	571	292	143	68	56
22	1,120	1,230	3,040	1,840	1,660	1,390	825	559	318	147	66	56
23	1,390	1,110	3,470	2,300	1,840	1,310	790	501	298	137	64	55
24	2,620	1,000	3,360	2,910	2,600	1,600	755	462	281	133	64	54
25	2,670	935	2,930	3,120	2,530	3,010	765	428	298	127	66	53
26	2,450	*1,120	2,420	2,860	2,550	3,480	795	403	313	123	70	53
27	1,860	2,120	2,120	2,650	2,740	3,440	795	368	286	115	70	54
28	1,380	2,520	2,320	*2,450	2,510	3,140	865	343	281	108	*68	55
29	1,110	2,960	2,640	2,200	2,240	2,740	995	338	354	108	67	57
30	955	3,400	3,280	2,150	-	2,320	888	314	1,260	95	63	59
31	840	-	3,260	3,480	-	2,090	-	297	-	88	63	-
Total	28,347	44,910	101,780	69,480	100,740	59,040	33,908	19,167	9,824	11,284	2,150	1,924
Mean	914	1,497	3,283	2,241	3,474	1,905	1,130	618	327	364	69.4	64.1
Cfsm	1.91	3.13	6.85	4.68	7.25	3.98	2.36	1.29	0.683	0.760	0.145	0.134
In.	2.20	3.49	7.90	5.39	7.82	4.58	2.63	1.49	0.76	0.88	0.17	0.15
Ac-ft	56,230	89,080	201,900	137,800	199,800	117,100	67,260	38,020	19,490	22,380	4,260	3,820

Calendar year 1951: Max 8,340 Min 42 Mean 1,526 Cfsm 3.19 In. 43.25 Ac-ft 1,105,000
Water year 1951-52: Max 7,180 Min 53 Mean 1,318 Cfsm 2.75 In. 37.46 Ac-ft 957,100

* Discharge measurement made on this day.

Tualatin River at Gaston, Oreg.

Location.--Lat 45°26'15", long. 123°10'05", in W½ sec. 34, T. 1 S., R. 4 W., on right bank 1.5 miles west of Gaston.

Drainage area.--51 sq mi, approximately, at measuring section at Gaston.

Records available.--October 1940 to September 1952.

Gage.--Staff gage read twice daily. Altitude of gage is 175 ft (by barometer). Prior to May 20, 1942, water-stage recorder at site 1.5 miles downstream at datum 164.18 ft above mean sea level, datum of 1929. May 20, 1942, to Aug. 24, 1949, staff gage at present site at datum 1.00 ft higher.

Average discharge.--12 years, 192 cfs.

Extremes.--Maximum discharge during year, 3,500 cfs Dec. 4 (gage height, 11.7 ft, from graph based on gage readings); minimum, 0.2 cfs Aug. 14, 15, Sept. 25.
1940-52: Maximum discharge, 4,820 cfs Feb. 17, 1949 (gage height, 12.23 ft, present datum); maximum gage height, 13.88 ft Dec. 19, 1941, site and datum then in use; minimum discharge, 0.2 cfs Sept. 22, 23, 1951, Aug. 14, 15, Sept. 25, 1952.

Remarks.--Records good. Slight diurnal fluctuation caused by log ponds upstream. Small diversions above station for irrigation. In 1949, city of Hillsboro began diverting about 5 cfs for municipal supply. Some water is diverted from Roaring Creek, upstream, for Forest Grove municipal supply.

Revisions.--W 1044: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Sept. 27-30; shifting-control method used June 21-30)

Oct. 1 to June 30				July 1 to Sept. 30			
1.0	16	4.0	445	0.3	0	.6	4.2
1.3	31	8.0	1,100	.4	.8	.8	12
1.7	60	9.0	1,330	.5	2.1	1.2	32
2.0	90	10.0	1,700				
2.5	160	11.0	2,450				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	83	989	252	1,600	240	252	102	31	28	1.7	3.2
2	144	70	801	*230	1,520	224	252	97	30	24	1.8	1.7
3	129	69	939	206	1,430	234	256	89	28	22	2.5	1.2
4	72	77	1,540	199	2,120	277	250	83	28	20	2.0	.9
5	43	73	1,730	191	1,200	*260	254	78	27	19	.7	1.6
6	30	67	978	181	816	341	256	76	27	18	.4	2.3
7	24	64	631	170	602	291	238	72	26	*15	.4	3.2
8	20	60	471	167	484	273	210	69	24	13	1.3	4.9
9	17	73	383	226	419	299	*182	66	23	10	1.6	7.3
10	*17	246	323	321	343	420	179	63	24	8.4	2.1	6.9
11	32	637	291	319	339	367	172	60	28	7.6	1.1	4.2
12	45	975	279	252	343	321	167	59	33	8.0	.6	3.2
13	40	658	260	238	*311	303	170	58	30	9.2	.3	2.5
14	75	458	230	214	293	335	177	59	29	9.2	.2	2.3
15	114	327	214	210	*275	329	158	56	30	6.6	.2	2.1
16	114	264	218	191	256	323	155	52	30	5.6	.6	2.1
17	80	210	224	174	232	321	150	49	27	4.5	2.9	1.8
18	66	190	684	165	218	347	136	45	25	4.8	*4.2	1.6
19	155	170	531	179	216	323	129	44	23	7.6	2.5	1.1
20	373	*155	371	218	201	291	119	44	24	8.4	2.7	.8
21	337	146	466	197	182	271	110	45	27	9.2	1.7	.8
22	301	123	1,040	181	175	252	108	43	26	8.8	1.4	.8
23	729	114	573	201	177	277	103	41	25	7.6	2.9	.6
24	480	97	415	323	188	434	101	39	27	8.4	5.9	.3
25	275	191	333	313	234	496	97	37	35	7.6	5.9	.3
26	190	512	307	291	309	478	94	35	26	6.9	8.0	.6
27	149	445	305	309	319	363	89	33	26	4.5	6.9	.6
28	130	575	303	327	289	325	86	32	31	4.0	4.9	.9
29	110	664	455	361	267	301	87	*33	33	2.9	3.4	*1.7
30	94	713	389	831	-	299	98	33	29	2.9	2.7	1.4
31	86	-	291	1,180	-	303	-	31	-	1.8	2.9	-
Total	4,527	8,506	16,944	8,817	15,358	9,918	4,835	1,723	832	313.6	76.4	62.9
Mean	146	284	547	284	530	320	161	55.6	27.7	10.1	2.46	2.10
Cfsm	2.86	5.57	10.7	5.57	10.4	6.27	3.16	1.09	0.543	0.198	0.048	0.041
In.	3.30	6.20	12.36	6.43	11.20	7.23	3.53	1.26	0.61	0.23	0.06	0.05
Ac-ft	8,980	16,870	33,610	17,490	30,460	19,670	9,590	3,420	1,650	622	152	125

Calendar year 1951: Max 1,940 Min 0.2 Mean 236 Cfsm 4.63 In. 62.70 Ac-ft 170,600
Water year 1951-52: Max 2,120 Min 0.2 Mean 196 Cfsm 3.84 In. 52.46 Ac-ft 142,600

Peak discharge (base, 2,000 cfs).--Dec. 4 (about 11 p.m.) 3,500 cfs (11.7 ft); Feb. 4 (8 a.m.) 2,470 cfs (11.02 ft).
* Discharge measurement made on this day.

Scoggin Creek near Gaston, Oreg.

Location.--Lat 45°27'30", long. 123°09'15", in NW¼ sec. 26, T. 1 S., R. 4 W., on left bank 100 ft upstream from highway bridge, 1½ miles upstream from mouth, and 1.7 miles northwest of Gaston.

Drainage area.--44.0 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 168.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1947, water-stage recorder at site 300 ft upstream at same datum. Oct. 1, 1947, to June 7, 1950, staff gage at site 150 ft upstream at same datum.

Average discharge.--12 years, 135 cfs.

Extremes.--Maximum discharge during year, 1,760 cfs Dec. 5 (gage height, 12.59 ft); minimum, 1.7 cfs Sept. 5.
1940-52: Maximum discharge, 3,460 cfs Feb. 17, 1949 (gage height, 15.53 ft); minimum, 1.2 cfs Aug. 22, 1941, Oct. 7, 8, 1943.

Remarks.--Records good except those for period of backwater from debris and those below 10 cfs, which are fair. Small diversions by pumping above station for irrigation. Part of water supply (about 1 cfs) for Hillsboro is diverted from Sein Creek above station; some diurnal fluctuation caused by log ponds above station.

Rating table, water year 1951-52, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

1.7	2.1	2.7	41
1.9	3.9	3.0	84
2.1	6.5	4.0	243
2.3	11	8.0	740
2.4	14	12.0	1,580
2.5	21		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	50	869	203	1,210	200	159	76	30	25	8.3	7.0
2	96	48	685	*179	1,360	182	164	74	28	20	8.1	6.4
3	51	51	926	162	1,140	192	159	70	24	14	8.3	6.1
4	27	58	1,220	154	*1,450	208	150	67	23	17	7.6	5.8
5	22	50	1,500	152	*1,060	*192	150	61	27	16	5.5	3.1
6	20	45	938	147	734	311	150	57	28	16	3.8	7.2
7	18	39	646	138	548	274	142	57	25	*12	5.8	8.1
8	16	37	488	133	431	243	132	58	25	11	8.5	8.8
9	14	40	377	220	360	229	*126	57	19	13	8.3	10
10	*11	103	303	298	317	299	121	54	16	13	7.9	8.8
11	11	420	243	313	*291	274	118	53	26	13	6.4	5.0
12	21	737	208	256	275	247	113	53	30	14	3.8	5.0
13	24	506	179	206	233	222	120	53	25	14	7.2	7.2
14	33	325	159	198	229	316	116	53	26	12	5.8	3.0
15	45	229	152	194	215	318	104	48	30	12	4.6	4.7
16	54	172	159	186	200	296	98	44	28	11	9.0	6.7
17	40	138	149	159	183	284	94	42	21	11	9.2	6.4
18	34	125	461	150	172	316	92	42	21	10	*8.8	3.4
19	60	113	450	144	171	293	92	41	22	11	7.9	3.3
20	106	*104	334	191	159	255	86	41	20	12	7.8	5.8
21	81	94	358	191	147	229	82	44	20	12	5.8	5.4
22	140	86	670	167	144	206	78	42	23	9.4	2.8	5.1
23	508	81	479	162	144	198	76	38	21	7.6	5.2	2.9
24	*289	79	363	298	145	239	70	32	23	8.8	7.2	3.1
25	162	101	292	314	169	279	73	31	28	10	9.4	3.7
26	120	416	243	283	226	295	73	32	19	9.7	8.3	8.1
27	94	406	242	311	263	250	71	32	18	9.4	5.5	5.5
28	76	493	206	315	237	223	71	29	28	6.7	5.8	3.6
29	67	603	326	298	215	202	70	*29	28	5.7	8.3	*4.1
30	61	624	310	647	-	188	78	31	26	9.0	7.9	4.4
31	55	-	252	984	-	180	-	30	-	8.1	7.6	-
Total	2,387	6,373	14,187	7,753	12,428	7,640	3,228	1,471	728	373.4	216.4	167.7
Mean	77.0	212	458	250	428	246	108	47.5	24.3	12.0	6.98	5.59
Cfsm	1.75	4.82	10.4	5.68	9.73	5.59	2.45	1.07	0.552	0.273	0.159	0.127
In.	2.02	5.39	12.0	6.55	10.5	6.46	2.73	1.24	0.62	0.32	0.18	0.14
Ac-ft	4,730	12,640	28,140	15,380	24,650	15,150	6,400	2,920	1,440	741	429	333

Calendar year 1951: Max 1,500 Min 1.6 Mean 188 Cfsm 4.27 In. 58.02 Ac-ft 136,100
Water year 1951-52: Max 1,500 Min 2.8 Mean 156 Cfsm 3.54 In. 48.15 Ac-ft 113,000

Peak discharge (base, 1,100 cfs).--Dec. 5 (2 a.m.) 1,760 cfs (12.59 ft); Feb. 4 (1 p.m.) 1,510 cfs (11.76 ft).
* Discharge measurement made on this day.
Note.--Backwater from debris Oct. 23 to Nov. 30.

Tualatin River near Dilley, Oreg.

Location.--Lat 45°28'30", long. 123°07'25", in NW¼ sec. 24, T. 1 S., R. 4 W., on left bank 5 ft upstream from highway bridge, 1¼ miles downstream from Scoggin Creek, and 1 mile south of Dilley.

Drainage area.--133 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 151.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 16, 1950, chain, wire-weight, or staff gages at several sites within 200 ft of present site at same datum.

Average discharge.--12 years, 390 cfs.

Extremes.--Maximum discharge during year, 4,960 cfs Dec. 5 (gage height, 12.91 ft); minimum, 1.5 cfs Sept. 24.
1940-52: Maximum discharge, 9,460 cfs Feb. 17, 1949 (gage height, 13.89 ft, from graph based on gage readings); minimum, 0.4 cfs Sept. 5, 1951.

Remarks.--Records good except those below 10 cfs, which are fair. Diversions above station for municipal water supply and irrigation, chiefly in Wapato Lake area. Diurnal fluctuation caused by dam below Gaston.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 23 to Aug. 22, Sept. 25-30)

Oct. 1 to Jan. 31				Feb. 1 to Sept. 30			
1.0	22	10.5	980	0.3	1.9	8.0	590
3.0	125	11.0	1,300	.4	3.6	10.0	838
6.0	347	12.0	2,750	.5	5.7	10.5	980
9.0	640	12.5	3,800	.7	11	11.0	1,300
10.0	819	13.0	5,260	1.0	22	12.0	2,750
				2.0	72	12.5	3,800
				4.0	221		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	150	2,310	653	*2,800	586	494	193	65	51	6.0	8.2
2	216	139	2,280	*573	3,540	535	478	186	*61	44	6.0	5.7
3	186	145	*2,410	513	3,010	532	481	168	58	36	6.2	6.0
4	102	188	*3,310	477	3,730	593	456	158	54	36	6.0	5.3
5	68	164	4,590	454	3,100	*556	452	147	57	35	4.9	2.9
6	54	147	3,010	436	2,250	700	454	139	57	32	2.2	7.0
7	46	136	2,190	403	1,840	697	427	135	52	23	4.0	10
8	40	129	1,710	386	1,400	643	381	136	49	18	6.7	13
9	36	127	1,210	544	1,060	605	348	131	44	17	7.7	19
10	*34	282	938	819	897	728	327	124	39	12	7.7	*18
11	33	722	760	917	*800	752	306	121	54	11	7.0	11
12	72	1,860	673	825	777	684	288	121	64	13	2.2	9.9
13	74	1,970	616	688	708	626	302	114	56	16	3.8	12
14	112	1,290	539	633	668	718	*321	115	59	14	4.2	8.0
15	164	836	486	600	644	796	291	108	67	11	2.4	7.4
16	188	624	489	563	610	770	269	102	60	11	6.7	9.6
17	141	510	461	486	565	735	250	96	52	*11	7.7	8.8
18	110	436	915	449	527	796	244	91	46	9.6	8.8	5.5
19	170	383	1,500	430	521	785	246	88	45	9.6	7.0	4.2
20	438	342	1,010	525	517	726	229	83	44	11	5.7	5.1
21	318	*301	877	558	485	667	208	83	44	12	5.7	5.5
22	439	270	1,850	516	462	610	191	82	48	10	*2.7	6.7
23	915	242	1,660	519	469	579	183	77	45	6.0	3.1	4.4
24	1,050	225	1,150	739	467	687	171	72	45	7.0	11	2.4
25	650	260	871	868	507	796	171	68	55	11	14	3.1
26	445	818	711	782	637	826	169	67	43	9.0	19	5.3
27	333	1,080	685	836	717	746	169	66	38	8.2	12	4.4
28	264	1,440	629	809	682	670	168	62	53	5.5	9.3	3.4
29	225	1,760	852	742	632	605	160	64	58	2.6	11	*4.9
30	197	1,960	976	1,110	-	571	189	65	54	6.0	9.3	5.1
31	171	-	787	2,330	-	555	-	64	-	6.0	8.8	-
Total	7,359	18,946	42,455	21,183	35,022	20,875	8,823	3,326	1,566	504.5	218.8	221.8
Mean	237	632	1,370	683	1,208	673	294	107	52.2	16.3	7.06	7.39
Cfsm	1.78	4.75	10.3	5.14	9.08	5.06	2.21	0.805	0.392	0.123	0.053	0.056
In.	2.06	5.30	11.87	5.92	9.79	5.84	2.47	0.93	0.44	0.14	0.06	0.06
Ac-ft	14,600	37,580	84,210	42,020	69,470	41,400	17,500	6,600	3,110	1,000	434	440

Calendar year 1951: Max 4,590 Min 1.2 Mean 520 Cfsm 3.91 In. 53.08 Ac-ft 376,500
Water year 1951-52: Max 4,590 Min 2.2 Mean 439 Cfsm 3.30 In. 44.88 Ac-ft 318,400

Peak discharge (base, 4,000 cfs).--Dec. 5 (9 a.m.) 4,960 cfs (12.91 ft); Feb. 4 (6 p.m.) 4,090 cfs (12.61 ft).
* Discharge measurement made on this day.

Gales Creek near Forest Grove, Oreg.

Location.--Lat 45°33'20", long. 123°11'05", in E½ sec. 21, T. 1 N., R. 4 W., on left bank at upstream side of bridge, 2½ miles southeast of village of Gales Creek and 4½ miles northwest of Forest Grove.

Drainage area.--66 sq mi, approximately.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 202.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 13, 1941, water-stage recorder at site 1.4 miles downstream at datum 15.33 ft lower. Sept. 13, 1941, to June 19, 1952, water-stage recorder at downstream side of bridge at datum 0.44 ft higher.

Average discharge.--12 years, 213 cfs.

Extremes.--Maximum discharge during year, 2,920 cfs Dec. 4 (gage height, 6.39 ft); minimum, 3.1 cfs Sept. 23 (gage height, 0.61 ft).
1940-52: Maximum discharge, 6,410 cfs Feb. 17, 1949 (gage height, 10.90 ft, from floodmark, site and datum then in use); minimum, 1 cfs Aug. 19, 1947.

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. Small diversions for irrigation above station. Some diurnal fluctuation at low flow caused by log ponds upstream.

Rating tables, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31				Feb. 1 to June 19				June 20 to Sept. 30	
0.8	18	3.0	610	0.4	28	1.5	250	0.6	3.4
1.1	50	4.0	1,090	.5	37	2.0	415	.7	7.8
1.5	120	6.0	2,350	.7	66	3.0	830	.8	14
2.0	250			1.1	147	5.5	2,320	1.0	32
								1.1	45

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	a85	a1,400	292	2,140	304	214	108	37	27	8.4	7.3
2	178	a80	a1,200	265	*1,900	280	230	98	35	26	8.9	7.3
3	114	a85	*1,300	*247	1,670	310	214	90	34	23	9.5	5.4
4	76	a100	2,040	235	*2,280	*317	206	88	33	22	8.9	5.8
5	60	a90	2,080	232	1,470	310	200	82	32	22	7.3	7.8
6	49	a80	1,240	208	1,010	502	195	80	32	20	9.5	9.5
7	42	a75	850	196	750	440	182	79	32	19	9.5	10
8	35	a70	634	182	610	387	172	79	30	19	9.5	16
9	28	a70	506	320	518	366	*158	73	29	17	12	16
10	23	a160	418	384	443	432	154	70	28	16	10	14
11	*27	a350	359	418	415	390	147	68	35	16	11	12
12	29	a800	320	356	390	373	143	68	42	17	12	11
13	27	566	286	320	*345	356	154	66	40	17	8.9	9.5
14	43	418	259	324	348	498	143	68	49	*13	6.3	8.4
15	56	324	253	338	331	482	132	63	46	13	7.3	6.8
16	63	274	256	314	310	446	127	60	40	13	12	5.8
17	49	241	244	274	292	440	121	55	38	13	11	4.5
18	53	202	768	288	274	454	119	55	a32	14	*11	6.3
19	114	178	678	259	268	415	117	55	a28	14	9.5	5.8
20	165	*158	526	356	250	373	112	53	29	16	9.5	4.9
21	165	140	809	324	236	342	104	53	30	16	8.4	5.4
22	295	130	845	289	225	307	100	53	30	16	10	3.7
23	658	120	646	292	219	298	98	47	27	16	11	4.1
24	*398	114	518	432	225	331	94	47	28	16	12	5.8
25	271	214	429	436	259	338	94	45	30	14	16	7.8
26	208	606	376	440	320	331	90	42	27	13	15	7.3
27	165	*618	345	518	366	301	88	41	28	12	13	10
28	134	670	310	514	359	277	88	41	35	9.5	11	8.4
29	112	a750	462	502	331	259	86	*42	35	11	8.9	*7.8
30	98	a1,200	398	1,300	-	244	108	40	30	8.9	9.5	5.4
31	a90	-	338	1,580	-	233	-	38	-	8.9	8.4	-
Total	3,891	8,968	21,093	12,415	18,554	11,136	4,190	1,947	1,001	498.3	315.2	239.8
Mean	126	299	680	400	640	359	140	62.8	33.4	16.1	10.2	7.99
Cfsm	1.91	4.53	10.3	6.06	9.70	5.44	2.12	0.952	0.506	0.244	0.155	0.121
In.	2.19	5.05	11.89	7.00	10.45	6.27	2.36	1.10	0.56	0.28	0.18	0.14
Ac-ft	7,720	17,790	41,840	24,620	36,800	22,090	8,310	3,860	1,990	988	625	476

Calendar year 1951: Max 2,080 Min 6.4 Mean 277 Cfsm 4.20 In. 56.95 Ac-ft 200,500
Water year 1951-52: Max 2,280 Min 3.7 Mean 230 Cfsm 3.48 In. 47.47 Ac-ft 167,100

Peak discharge (base, 1,100 cfs).--Dec. 4 (6 p.m.) 2,920 cfs (6.39 ft); Feb. 2 (1:30 a.m.) 2,370 cfs (5.57 ft); Feb. 4 (9 a.m.) 2,470 cfs (5.72 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for McKay Creek near North Plains and Tualatin River near Dilley.
Note.--Shifting-control method used Dec. 4 to Jan. 31.

McKay Creek near North Plains, Oreg.

Location.--Lat 45°37'35", long. 122°58'30", in SE¼ sec. 30, T. 2 N., R. 2 W., on downstream end of left timber bridge bent, 1⅝ miles upstream from Jackson Creek and 2½ miles northeast of North Plains.

Drainage area.--27.6 sq mi.

Records available.--October 1940 to September 1943, October 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 172.57 ft above mean sea level, datum of 1929. October 1940 to September 1943, at datum 0.25 ft higher.

Average discharge.--7 years, 67.7 cfs.

Extremes.--Maximum discharge during year, 884 cfs Dec. 5 (gage height, 10.67 ft); minimum, 0.7 cfs Aug. 21.
1940-43, 1948-52: Maximum discharge, 2,100 cfs Feb. 17, 1949 (gage height, 11.23 ft); minimum, 0.4 cfs Aug. 17, 18, 22, 1951.

Remarks.--Records fair. Some diurnal fluctuation in summer caused by pumping for irrigation.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Oct. 9, 11-23, Nov. 11 to Dec. 3; shifting-control method used April 9 to June 1)

Oct. 1-23		Oct. 24 to Sept. 30			
0.8	3.4	0.5	0.9	5.0	117
1.0	6.0	.7	2.6	7.0	234
1.5	14	1.0	5.7	8.0	306
2.5	33	1.5	12	9.0	421
3.5	64	2.0	18	10.0	617
4.5	110	2.5	28	10.5	795
5.5	171	3.5	56		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a13	14	461	87	689	114	53	19	8.3	5.9	1.5	2.2
2	a28	14	371	75	*686	94	56	17	7.9	5.0	1.5	2.1
3	a25	16	428	*70	592	97	52	16	7.8	4.4	1.4	2.3
4	a15	17	623	67	*634	*99	50	15	7.8	3.6	1.5	1.9
5	a10	15	786	64	441	102	49	15	7.2	3.5	1.1	2.0
6	a6	14	494	58	309	156	48	15	7.1	3.2	1.5	2.4
7	a5	14	330	54	230	165	44	15	6.7	*3.0	2.2	3.0
8	a4	13	242	50	169	142	41	16	6.4	2.7	2.2	3.9
9	*3.6	15	167	73	136	128	*38	15	6.0	2.5	2.2	4.5
10	a3.6	35	123	147	108	117	37	14	5.8	2.4	2.2	3.7
11	4.0	132	96	182	97	97	35	14	9.5	3.0	2.0	3.4
12	7.4	288	83	158	86	88	32	14	9.7	2.8	1.9	3.2
13	7.0	216	72	132	*71	80	35	14	7.9	2.6	1.8	3.1
14	10	147	60	122	70	101	33	14	9.5	2.3	2.1	2.9
15	11	100	58	101	69	114	28	13	10	2.2	2.3	2.3
16	11	74	71	85	68	109	26	13	8.1	2.0	2.2	2.4
17	8.6	58	71	69	68	102	25	12	6.9	2.0	2.1	2.2
18	7.6	48	218	67	64	108	25	11	6.2	2.1	*2.0	2.1
19	13	*43	328	62	68	108	24	11	6.0	1.9	1.9	1.6
20	18	39	248	88	62	104	22	11	6.1	1.9	1.7	1.8
21	19	32	209	91	57	101	20	11	6.8	2.1	1.1	1.7
22	44	27	294	84	56	99	20	11	6.7	2.2	1.3	1.6
23	154	24	264	86	56	96	19	10	6.1	2.3	1.9	1.5
24	*90	22	196	150	53	103	19	9.1	6.5	2.2	1.8	1.8
25	53	27	144	193	76	97	19	9.1	6.9	2.0	3.9	2.0
26	38	153	116	183	148	93	18	8.9	5.9	2.0	3.4	2.1
27	27	231	100	211	189	89	18	8.4	5.9	2.0	2.9	2.2
28	21	249	85	224	165	83	19	8.4	7.2	1.8	2.7	2.2
29	19	275	123	210	138	71	17	*8.3	7.1	1.8	2.2	*2.2
30	17	331	134	375	-	67	20	8.3	6.4	2.2	2.2	2.2
31	15	-	111	612	-	60	-	8.4	-	2.1	2.4	-
Total	707.8	2,683	7,106	4,230	5,655	3,184	942	384.9	216.4	81.7	63.1	72.5
Mean	22.8	89.4	229	136	195	103	31.4	12.4	7.21	2.64	2.04	2.42
Cfsm	0.826	3.24	8.30	4.93	7.07	3.73	1.14	0.449	0.261	0.096	0.074	0.088
In.	0.95	3.62	9.58	5.70	7.62	4.29	1.27	0.52	0.29	0.11	0.09	0.10
Ac-ft	1,400	5,320	14,090	8,390	11,220	6,320	1,870	763	429	162	125	144

Calendar year 1951: Max 786 Min 0.8 Mean 82.3 Cfsm 2.98 In. 40.47 Ac-ft 59,540
Water year 1951-52: Max 786 Min 1.1 Mean 69.2 Cfsm 2.51 In. 34.14 Ac-ft 50,230

Peak discharge (base, 600 cfs).--Dec. 5 (3 a.m.) 884 cfs (10.67 ft); Feb. 1 (11 a.m.) 734 cfs (10.36 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Tualatin River at Gaston and Gales Creek near Forest Grove.

Tualatin River at Farmington, Oreg.

Location.--Lat 45°27'00", long. 122°57'00", in SE¼ sec. 29, T. 1 S., R. 2 W., on left bank, attached to timber bents at upstream side of highway bridge at Farmington, 5½ miles southeast of Hillsboro (revised).

Drainage area.--568 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Staff gage read twice daily. Datum of gage is 100.42 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1940, at datum 2.00 ft higher. Auxiliary staff gage read twice daily at highway bridge 6½ miles downstream.

Average discharge.--13 years, 1,310 cfs.

Extremes.--Maximum discharge during year, 12,700 cfs Dec. 6 (gage height, 33.4 ft, from graph based on observer's readings); minimum, 7.1 cfs Aug. 8, 9.
1939-52: Maximum discharge, 17,400 cfs Feb. 18, 1949; maximum gage height, 34.5 ft Feb. 18, 1949, from graph based on gage readings; minimum discharge, 6.8 cfs Aug. 26, 1951.
Maximum stage known, about 37 ft at Farmington and 33.4 ft at gage near Scholls, Dec. 22 or 23, 1933.

Remarks.--Records good. 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.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1941, superseding those published in Water-Supply Paper 934, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1940		1940-Con.		1940-Con.	
Oct. 1	83	Oct. 21	79	Nov. 10	661
2	70	22	82	11	547
3	69	23	103	12	442
4	71	24	128	13	371
5	74	25	270	14	304
6	74	26	330	15	259
7	73	27	224	16	229
8	69	28	156	17	215
9	65	29	129	18	206
10	64	30	154	19	210
11	64	31	304	20	202
12	64	Nov. 1	430	21	205
13	67	2	430	22	278
14	69	3	370	23	296
15	70	4	291	24	298
16	71	5	231	25	385
17	71	6	162	26	523
18	70	7	183	27	517
19	71	8	263	28	547
20	76	9	612		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October 1940.....	3,364	330	64	109	0.192	0.22	6,670
November.....	12,120	1,660	162	404	.711	.79	24,040
Calendar year 1940.	454,711	8,600	37	1,242	2.19	29.77	901,800
Water year 1940-41.	268,869	6,810	35	737	1.30	17.58	533,300

Tualatin River at Farmington, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	386	3,580	2,800	3,570	2,320	1,620	490	163	171	9.0	25
2	252	347	4,340	2,690	5,560	2,290	1,490	533	*163	153	7.3	24
3	412	318	5,140	2,440	9,160	2,170	1,410	494	163	140	7.4	23
4	469	299	6,370	*2,280	10,400	2,110	1,340	441	159	120	8.6	19
5	350	344	*9,440	2,050	*10,700	2,130	1,280	420	151	110	9.3	17
6	326	334	11,500	1,870	9,760	2,190	1,250	404	144	93	9.3	16
7	269	318	10,200	1,630	8,180	*2,300	1,170	383	143	84	8.3	17
8	129	277	7,440	1,500	6,970	2,490	1,100	377	139	71	7.1	19
9	104	261	6,410	1,590	6,210	2,500	1,010	373	125	51	7.4	32
10	91	293	5,640	2,450	5,310	2,460	*928	370	122	38	10	46
11	*91	662	5,240	3,230	5,030	2,450	865	373	128	33	13	57
12	104	1,590	4,530	3,300	*4,640	2,400	838	368	147	32	16	52
13	127	2,170	3,960	3,080	4,000	2,330	787	360	201	30	15	42
14	155	2,660	3,350	2,980	3,620	2,340	821	350	205	32	15	36
15	204	2,700	2,680	2,810	3,290	2,440	845	339	211	33	12	33
16	276	2,760	2,270	2,700	3,080	2,510	755	331	233	26	8.6	32
17	313	2,620	2,100	2,630	2,820	2,680	699	314	213	*18	8.1	32
18	293	1,990	2,130	2,440	2,610	2,790	660	285	182	16	8.8	27
19	259	1,540	2,650	2,210	2,400	2,850	635	271	159	16	14	24
20	340	1,290	2,660	2,140	2,320	2,880	614	266	145	17	20	22
21	586	*1,040	2,810	2,110	2,070	2,790	584	257	137	19	18	16
22	721	957	3,060	2,140	2,060	2,560	540	254	137	23	*14	14
23	1,140	828	3,280	2,540	2,040	2,360	515	243	141	26	15	13
24	1,670	670	3,350	2,760	2,010	2,190	491	223	145	23	14	14
25	1,690	716	3,320	2,710	1,990	2,180	470	209	143	21	18	13
26	1,700	845	3,230	2,650	2,110	2,140	456	201	141	19	27	12
27	1,360	*1,720	3,100	2,540	2,250	2,130	448	192	139	19	36	12
28	1,010	2,270	2,980	2,670	2,410	2,100	448	180	137	18	40	23
29	699	2,700	3,000	2,640	2,360	1,980	451	166	138	20	34	24
30	526	2,880	3,010	2,680	-	1,850	456	162	159	17	24	25
31	452	-	2,860	3,140	-	1,780	-	163	-	12	23	-
Total	16,288	37,785	135,630	77,400	128,930	72,690	24,976	9,792	4,713	1,501	477.2	761
Mean	525	1,260	4,375	2,497	4,446	2,345	833	316	157	48.4	15.4	25.4
Cfsm	0.924	2.22	7.70	4.40	7.83	4.13	1.47	0.556	0.276	0.085	0.027	0.045
In.	1.07	2.47	8.88	5.07	8.44	4.76	1.64	0.64	0.31	0.10	0.03	0.05
Ac-ft	32,310	74,950	269,000	153,500	255,700	144,200	49,540	19,420	9,350	2,980	947	1,510

Calendar year 1951: Max 11,500 Min 6.8 Mean 1,757 Cfsm 3.09 In. 41.99 Ac-ft 1,272,000
Water year 1951-52: Max 11,500 Min 7.1 Mean 1,396 Cfsm 2.46 In. 33.46 Ac-ft 1,013,000

* Discharge measurement made on this day.

Tualatin River near Willamette, Oreg.

Location.--Lat 45°21'05", long. 122°40'35", in SW¼ sec. 34, T. 2 S., R. 1 E., on left bank 300 ft upstream from county bridge, 1 mile northwest of Willamette, and 1¾ miles above mouth.
Drainage area.--710 sq mi.
Records available.--July 1928 to September 1952.
Gage.--Water-stage recorder. Datum of gage is 85.61 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 12, 1941, staff gage at datum 1.02 ft higher.
Average discharge.--24 years, 1,433 cfs (including flow of Oswego Canal).
Extremes.--Maximum discharge during year, 10,400 cfs Dec. 8; minimum daily, 20 cfs Aug. 8-10.
1928-52: Maximum discharge, 23,300 cfs Dec. 23, 1933 (gage height, 17.72 ft, present datum); minimum daily, that of Aug. 8-10, 1952.
Remarks.--Records excellent except those for periods of shifting control and those below 50 cfs, which are good. All records herein include flow of Oswego Canal which 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 for Oswego Canal.
Revisions (water years).--W 1014: 1943. W 1184: 1947. Revised figures of discharge (river only), in cubic feet per second, for the water year 1941, superseding those published in Water-Supply Paper 934, are given herewith:

1940	
Nov. 1	398
2	430
3	394
4	335

Month	Observed				Diversion by Oswego Canal in acre-feet	Adjusted for diversion			
	Maximum	Minimum	Mean	Runoff in acre-feet		Mean	Per square mile	Runoff	
								Inches	Acre-feet
November 1940	1,520	195	428	25,480	5,130	514	0.724	0.81	30,610
Calendar year 1940	8,090	6	1,357	984,700	45,940	1,420	2.00	27.20	1,031,000
Water year 1940-41	6,160	12	788	570,600	50,350	858	1.21	16.40	621,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	129	502	4,650	3,500	4,410	2,600	1,980	696	219	251	42	38
2	299	428	4,880	3,270	*5,270	2,600	1,870	732	*217	236	39	39
3	344	396	5,400	3,040	6,260	2,430	1,740	722	221	217	36	40
4	489	380	6,480	*2,840	7,590	2,410	1,690	681	232	202	32	40
5	432	389	7,410	2,570	*8,880	2,340	1,620	635	230	182	32	41
6	313	405	8,290	2,360	9,800	2,370	1,540	603	235	170	27	42
7	232	425	9,940	2,240	9,000	*2,530	1,460	451	216	156	21	41
8	187	369	10,200	2,160	8,300	2,620	1,420	407	202	141	20	41
9	164	350	9,190	2,190	7,500	2,680	1,340	529	180	123	20	43
10	144	430	8,030	2,780	7,000	2,730	*1,260	538	179	108	20	43
11	140	766	6,980	3,400	6,260	2,700	1,170	520	183	92	21	44
12	*156	1,730	6,080	3,710	*5,540	2,620	1,160	491	187	76	21	50
13	159	2,540	5,270	3,730	4,880	2,560	1,070	483	216	67	21	53
14	197	2,860	4,560	3,710	4,340	2,600	1,060	474	289	60	22	51
15	196	2,920	3,850	3,600	3,860	2,730	1,100	470	332	59	22	50
16	256	2,870	3,290	3,420	3,460	2,770	1,040	450	332	*57	22	50
17	318	2,720	2,860	3,230	3,200	2,790	983	434	328	56	22	51
18	334	2,400	2,960	3,020	2,910	2,840	935	408	302	53	22	53
19	320	1,990	3,260	2,840	2,710	2,950	902	385	266	51	21	53
20	296	1,570	3,340	2,740	2,600	2,960	863	364	246	50	22	50
21	436	1,300	3,430	2,750	2,510	2,920	835	357	235	50	23	47
22	714	1,110	3,600	2,830	2,470	2,840	798	347	228	49	*23	46
23	1,100	*979	3,620	2,960	2,360	2,720	753	341	210	52	25	46
24	1,610	877	3,640	3,210	2,330	2,670	725	327	215	53	24	43
25	1,920	814	3,680	3,360	2,280	2,600	700	308	216	53	26	43
26	1,900	995	3,680	3,450	2,200	2,570	675	292	210	54	28	44
27	1,660	1,650	3,640	3,420	2,400	2,540	675	276	213	52	31	44
28	1,300	2,430	3,530	3,360	2,500	2,500	670	267	213	50	34	41
29	941	2,980	3,670	3,400	2,700	2,410	670	257	209	50	36	40
30	730	3,500	3,790	3,400	-	2,270	670	239	225	47	38	41
31	592	-	3,690	3,950	-	2,120	-	227	-	45	38	-
Total	18,008	43,075	156,890	96,440	135,520	80,990	33,374	13,711	6,986	2,962	831	1,348
Mean	581	1,436	5,061	3,111	4,673	2,613	1,112	442	233	95.5	26.8	44.9
Cfsm	0.818	2.02	7.13	4.38	6.58	3.68	1.57	0.623	0.328	0.135	0.038	0.063
In.	0.94	2.26	8.22	5.05	7.10	4.24	1.75	0.72	0.37	0.16	0.04	0.07
Ac-ft	35,720	85,440	311,200	191,300	268,800	160,600	66,200	27,200	13,860	5,880	1,650	2,670

Calendar year 1951: Max 10,800 Min 20 Mean 1,931 Cfsm 2.72 In. 36.96 Ac-ft 1,398,000
Water year 1951-52: Max 10,200 Min 20 Mean 1,612 Cfsm 2.27 In. 30.92 Ac-ft 1,171,000

* Discharge measurement made on this day.
Note.--Shifting-control method used Mar. 11 to July 8.

Clackamas River at Big Bottom, Oreg.

Location.--Lat 45°01'00", long. 121°55'00" (revised), in SE¼ sec. 26, T. 6 S., R. 7 E., on right bank 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. Inflow between gage and measuring section 2,000 ft downstream is included in records.
Drainage area.--136 sq mi at measuring section 2,000 ft downstream.
Records available.--April 1920 to September 1952.
Gage.--Water-stage recorder. Datum of gage is 2,057.56 ft above mean sea level, datum of 1929 (Public Roads Administration benchmark).
Average discharge.--32 years, 463 cfs.
Extremes.--Maximum discharge during year, 2,410 cfs Dec. 1 (gage height, 5.65 ft); minimum, 263 cfs Sept. 25, 26, 27, 28-30 (gage height, 2.03 ft).
1920-52: Maximum discharge, 6,750 cfs Mar. 31, 1931, Dec. 15, 1946, from rating curves extended above 3,500 and 1,700 cfs, respectively; maximum gage height, 8.58 ft, Dec. 15, 1946; minimum discharge, 184 cfs Sept. 12, 1942.
Remarks.--Records good. No regulation or diversion above station.
Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.
Revisions.--W 1218: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1943, superseding those published in Water-Supply Paper 984 are given herewith:

Apr. 27, 1943..... 934

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
April 1943.....	33,333	1,760	775	1,111	8.29	9.25	66,120
Water year 1942-43.....	214,646	2,670	202	588	4.39	59.57	425,800
Calendar year 1943.....	193,052	2,440	239	529	3.95	53.59	382,900

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 23		Mar. 24 to Sept. 30	
2.2	305	2.0	256
3.0	610	2.5	393
4.0	1,140	3.5	800
5.1	1,890	4.2	1,190

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	396	372	1,850	422	845	403	572	*895	786	504	293	273
2	524	365	1,250	410	954	*396	568	815	768	457	290	273
3	500	358	*1,120	403	*986	400	572	760	764	436	290	273
4	386	354	1,060	400	1,290	392	572	710	786	423	288	275
5	341	348	1,020	392	1,130	386	612	678	815	406	288	296
6	322	344	820	386	937	382	701	665	786	390	288	280
7	317	337	710	378	820	375	778	670	719	381	288	278
8	311	*334	645	375	745	372	742	688	673	371	296	280
9	308	334	588	386	690	375	701	692	665	365	330	288
10	308	382	560	382	655	392	688	719	647	359	298	*280
11	317	491	556	372	635	382	688	796	608	353	290	275
12	331	775	552	365	610	375	683	850	556	348	288	273
13	325	680	534	358	583	372	719	1,110	520	342	288	273
14	386	578	508	361	560	368	746	1,060	580	336	285	270
15	389	504	492	354	552	365	732	962	612	333	283	270
16	372	460	496	348	538	361	724	950	536	*330	283	270
17	351	433	480	341	520	361	728	1,030	*516	328	283	268
18	358	414	601	337	504	365	815	1,060	504	322	280	268
19	403	403	547	341	496	358	935	1,140	496	320	280	268
20	*529	403	500	344	476	351	865	1,140	492	317	280	268
21	480	400	524	337	460	348	815	1,040	480	317	*280	268
22	520	389	720	337	452	341	805	935	460	314	278	266
23	1,230	382	610	337	452	375	805	930	446	311	278	266
24	810	375	552	348	433	536	830	962	440	309	278	266
25	615	396	512	348	425	620	915	992	429	306	278	266
26	516	745	496	348	425	665	1,040	956	419	303	275	266
27	468	740	476	351	418	647	1,100	968	416	301	275	*266
28	436	920	468	348	410	652	1,130	1,040	450	301	275	266
29	414	986	492	348	410	634	956	980	663	298	275	263
30	396	1,110	460	407	-	*620	910	890	592	298	275	263
31	382	-	440	583	-	608	-	855	-	296	275	-
Total	13,741	15,112	20,639	11,547	18,411	13,577	23,447	27,938	17,624	10,775	8,831	8,155
Mean	443	504	666	372	635	438	782	901	587	348	285	272
Cfsm	3.26	3.71	4.90	2.74	4.67	3.22	5.75	6.62	4.32	2.56	2.10	2.00
In.	3.76	4.13	5.64	3.16	5.03	3.71	6.41	7.64	4.82	2.95	2.41	2.23
Ac-ft	27,250	29,970	40,940	22,900	36,520	26,930	46,510	55,410	34,960	21,370	17,520	16,180

Calendar year 1951: Max 2,540 Min 292 Mean 599 Cfsm 4.40 In. 59.79 Ac-ft 433,600
Water year 1951-52: Max 1,850 Min 263 Mean 519 Cfsm 3.82 In. 51.89 Ac-ft 376,500

Peak discharge (base, 1,200 cfs).--Oct. 23 (8 a.m.) 1,600 cfs (4.72 ft); Dec. 1 (9 a.m.) 2,410 cfs (5.65 ft); Feb. 4 (2 to 3 p.m.) 1,340 cfs (4.33 ft); May 19 (12 p.m.) 1,200 cfs (4.22 ft).
* Discharge measurement made on this day.

Oak Grove Fork above powerplant intake, Oreg.

Location.--Lat 45°04'30", long. 121°57'00", in SW¼ sec. 3, T. 6 S., R. 7 E., on right bank just upstream from Spring Creek, 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. Records include flow of Spring Creek.

Drainage area.--126 sq mi, includes that of Spring Creek.

Records available.--May 1909 to September 1923 (incomplete), December 1923 to September 1952. Published as both Oak Grove Fork of Clackamas River at proposed intake, near Cazadero and Oak Grove Fork of Clackamas River at intake, near Cazadero May 1909 to September 1910, as Oak Grove Fork of Clackamas River at intake, near Cazadero October 1910 to September 1921, and as Oak Grove Fork at Portland Electric Power Co.'s intake, October 1921 to September 1929.

Gage.--Water-stage recorder. Datum of gage is 2,052.31 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 21, 1909, to Nov. 17, 1911, staff gage and Mar. 26, 1912, to Sept. 30, 1923, water-stage recorders at various sites three-quarters of a mile downstream below Kink Creek, at different datum.

Average discharge.--28 years (1924-52), 477 cfs.

Extremes.--Maximum discharge during year, 1,260 cfs May 21 (gage height, 3.42 ft); minimum, 316 cfs Aug. 15.

1909-52: Maximum discharge, 5,000 cfs Jan. 7, 1923 (gage height, 5.45 ft, site and datum then in use), computed from flow at stations on Clackamas River; minimum, 236 cfs Oct. 15, 16, 18, 1931 (gage height, 1.42 ft).

Revisions.--Maximum discharge for water year 1910 has been revised to 3,030 cfs Nov. 22 (gage height, 3.7 ft, from graph based on gage readings), superseding figure published in Water-Supply Papers 362 and 370.

Remarks.--Records good. No diversion above station. No regulation except natural storage in Clackamas Lake.

Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1909, 1916, 1918, 1923, and 1932, superseding those published in Water-Supply Papers 362, 370, 444, 484, 574, and 739, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1909		1923-Con.		1932-Con.	
May 29	750	Feb. 23	430	May 3	820
30	900	24	440	4	850
31	1,000	25	440	5	820
		26	440	6	820
1916		27	430	7	850
Mar. 21	924	28	430	8	850
23	920	Mar. 6	470	9	885
24	860	7	480	10	960
25	940	8	470	11	960
26	1,100	10	470	12	960
27	1,100	11	480	13	1,000
28	1,050	12	490	14	960
29	940	13	510	15	885
30	920	14	500	16	850
31	920	16	510	17	885
		17	560	18	885
1918		18	540	19	885
Aug. 1	450	19	520	20	960
2	440	20	520	21	920
3	440	21	510	22	850
4	440	22	510	23	885
5	430	23	510	24	820
6	430	24	500	25	760
7	430	25	500	26	718
		27	500	27	694
1923		28	520	28	682
Feb. 14	450	29	550	29	850
18	430	30	580	30	790
19	460			31	730
20	450	1932			
21	430	May 1	885		
22	430	2	885		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
May 1909	1,000	660	744	5.68	6.55	45,700
March 1916	1,100	535	747	5.70	6.57	45,900
Water year 1915-16	-	340	699	5.34	72.62	507,000
August 1918	480	403	444	3.39	3.91	27,300
February 1923	538	430	462	3.53	3.68	25,700
March	657	432	502	3.83	4.42	30,900
Water year 1922-23	4,360	324	582	4.44	60.34	422,000
Calendar year 1923	4,360	340	588	4.52	61.41	426,100
May 1932	1,000	682	857	6.80	7.84	52,700
Water year 1931-32	1,420	236	433	3.44	46.72	314,000
Calendar year 1932	1,420	264	467	3.71	50.42	339,000

Oak Grove Fork above powerplant intake, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.2	325
3.0	900
3.4	1,240

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	457	436	1,100	443	535	436	610	892	760	565	387	358
2	528	429	908	436	*588	429	602	*844	730	520	387	358
3	499	429	798	436	625	*436	602	805	715	506	387	358
4	464	429	*760	429	775	429	610	775	708	492	387	358
5	415	422	722	429	722	422	655	752	700	478	387	369
6	401	415	632	422	655	415	722	738	685	471	380	358
7	394	*408	588	422	610	415	752	752	655	464	380	352
8	394	408	565	415	588	415	722	775	640	457	380	364
9	380	415	542	415	565	422	700	782	632	457	380	358
10	380	436	528	415	550	436	700	805	625	450	380	347
11	394	471	513	408	542	422	700	844	618	443	374	*347
12	415	572	513	401	528	415	708	876	588	*436	374	347
13	429	558	506	387	513	415	730	1,050	572	436	374	347
14	471	520	492	394	506	408	730	1,050	602	429	374	352
15	457	492	485	387	499	408	722	1,030	610	429	374	352
16	443	471	499	387	499	408	722	1,010	572	429	374	347
17	415	464	485	*380	485	408	722	1,030	542	422	374	347
18	422	457	535	380	478	408	798	1,040	*528	415	374	347
19	436	450	506	380	478	401	868	1,090	520	415	374	347
20	*492	443	478	387	464	401	812	1,150	520	415	374	347
21	506	436	506	380	457	394	790	1,190	528	408	374	347
22	550	429	602	380	457	387	798	1,060	513	408	369	347
23	932	429	542	374	450	457	790	1,020	506	408	*369	347
24	692	422	513	374	443	685	805	1,000	499	401	369	347
25	580	443	499	370	443	760	860	972	485	401	369	342
26	520	580	485	380	450	760	940	932	478	401	369	342
27	492	572	478	380	443	730	1,000	924	485	394	369	347
28	478	640	478	374	436	722	1,040	916	520	394	369	347
29	471	678	499	374	436	678	956	876	692	394	364	342
30	457	722	471	415	-	655	924	828	640	394	364	342
31	443	-	457	464	-	*632	-	798	-	394	364	-
Total	14,807	14,476	17,685	12,418	15,220	15,209	23,090	28,606	17,868	13,526	11,624	10,510
Mean	478	483	570	401	525	491	770	923	596	436	375	350
Cfsm	3.79	3.83	4.52	3.18	4.17	3.90	6.11	7.33	4.73	3.46	2.98	2.78
In.	4.37	4.27	5.22	3.67	4.49	4.49	6.82	8.44	5.27	3.99	3.43	3.10
Ac-ft	29,370	28,710	35,080	24,630	30,190	30,170	45,800	56,740	35,440	26,830	23,060	20,850

Calendar year 1951: Max 1,500 Min 375 Mean 630 Cfsm 5.00 In. 67.90 Ac-ft 456,300
Water year 1951-52: Max 1,190 Min 342 Mean 533 Cfsm 4.23 In. 57.56 Ac-ft 386,900

Peak discharge (base, 940 cfs).--Oct. 23 (7 a.m.) 1,090 cfs (3.23 ft); Dec. 1 (8 a.m.) 1,210 cfs (3.37 ft); Apr. 28 (3 a.m.) 1,070 cfs (3.21 ft); May 21 (2 to 5 a.m.) 1,260 cfs (3.42 ft);
* Discharge measurement made on this day.

Clackamas River above Three Lynx Creek, Oreg.

Location.--Lat 45°07'30", long. 122°04'20", in NE¼ sec. 21, T. 5 S., R. 6 E., on right bank just downstream from powerplant, 500 ft upstream from Three Lynx Creek and 17 miles southeast of Estacada.

Drainage area.--479 sq mi.

Records available.--April 1909 to December 1913, October 1921 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,091.69 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Portland General Electric Co.). Apr. 23, 1909, to Jan. 4, 1914, staff gage at about the same site and datum.

Average discharge.--35 years, 1,894 cfs.

Extremes.--Maximum discharge during year, 10,900 cfs Dec. 1 (gage height, 7.85 ft); minimum, 397 cfs Sept. 30 (gage height, 0.58 ft); minimum daily, 693 cfs Sept. 18.
1911-13, 1921-52: Maximum discharge, 34,800 cfs Mar. 31, 1931 (gage height, 15.5 ft), from rating curve extended above 11,000 cfs; minimum observed, 357 cfs (revised) Sept. 15, 1949; minimum daily, 536 cfs Oct. 22, 1930.
Revisions.--The maximum discharge for the water year 1910 has been revised to 30,600 cfs Nov. 22, 1909 (gage height, 14.5 ft), superseding figure published in Water-Supply Paper 554. The figures of minimum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
1124.....	1948	Sept. 8, 1948	429	0.66
1154.....	1949	Sept.15, 1949	357	0.48
1184.....	1950	Oct. 3, 1949	421	0.64

Remarks.--Records excellent. Water diverted from Oak Grove Fork is used in powerplant on Clackamas River just above station. Considerable diurnal fluctuation during periods of low flow.

Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.

Revisions.--W 1194: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1912, superseding those published in Water-Supply Paper 554, are given herewith:

1912

Jan.	6.....	1,500
	7.....	2,500
	8.....	1,800
	9.....	2,200
	10.....	3,000
	11.....	2,300

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
January 1912.....	12,900	1,060	4,030	8.41	9.70	248,000
Water year 1911-12..	12,900	630	2,020	4.22	57.47	1,470,000
Calendar year 1912..	12,900	695	2,220	4.63	63.14	1,610,000

Clackamas River above Three Lynx Creek, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.2	685	5.0	4,730
2.0	1,200	7.0	8,740
3.0	2,120	8.0	11,300

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,320	1,170	9,270	1,670	5,700	1,580	2,760	3,500	2,700	2,120	967	746
2	2,380	1,200	5,910	1,580	6,080	1,530	2,680	3,140	2,600	1,860	897	734
3	2,770	1,190	5,220	1,550	5,760	1,560	2,630	2,850	2,590	1,700	867	724
4	1,840	1,180	5,140	1,530	7,870	1,580	2,600	2,620	2,680	1,610	843	724
5	1,360	1,140	5,390	1,480	5,870	1,520	3,040	2,480	2,850	1,510	849	795
6	1,150	1,040	3,810	1,430	4,330	1,500	3,930	2,410	2,770	1,420	831	773
7	1,040	1,060	3,040	1,400	3,560	1,470	4,220	2,460	2,450	1,370	819	748
8	980	1,010	2,580	1,350	3,120	1,440	3,680	2,640	2,300	1,310	819	760
9	941	1,010	2,280	1,420	2,870	1,480	3,280	2,740	2,310	1,260	934	787
10	922	1,230	2,120	1,450	2,740	1,680	3,080	2,860	2,270	1,250	813	761
11	961	1,940	2,150	1,330	2,760	1,660	3,040	3,280	2,110	1,220	801	739
12	1,140	4,080	2,160	1,260	2,690	1,580	3,000	3,390	1,920	*1,180	795	737
13	1,240	3,510	2,110	1,230	2,470	1,510	3,210	4,020	1,770	1,160	790	741
14	1,660	*2,900	2,000	1,250	2,320	1,460	3,420	4,150	1,900	1,110	790	738
15	2,060	2,380	1,900	1,200	2,220	1,410	3,260	3,880	2,240	1,090	778	741
16	1,670	1,990	1,960	1,160	2,120	1,390	3,140	3,760	1,920	1,080	784	736
17	1,520	1,760	1,890	*1,110	2,030	1,400	3,160	4,160	1,820	1,060	773	736
18	1,390	1,600	3,100	1,120	1,930	1,450	3,840	4,260	1,790	1,050	778	693
19	1,710	1,540	2,870	1,110	1,880	1,410	*4,540	4,400	1,770	1,060	778	790
20	2,800	1,510	2,350	1,140	1,780	1,340	3,940	4,490	1,760	1,060	801	727
21	2,440	1,520	2,450	1,110	1,690	1,290	3,480	4,320	1,730	994	813	723
22	2,580	1,460	*4,080	1,110	1,640	*1,260	3,310	*3,770	1,660	1,040	807	740
23	7,530	1,400	3,160	1,100	*1,630	1,420	3,220	3,640	1,580	1,040	*807	735
24	4,390	1,340	2,600	1,220	1,560	3,460	3,350	3,720	1,570	1,020	813	*723
25	3,020	1,440	2,250	1,300	1,530	4,300	3,880	3,770	*1,500	1,020	819	722
26	2,310	3,860	2,070	1,320	1,570	4,360	4,350	3,600	1,440	967	795	737
27	1,950	3,770	1,950	1,380	1,610	4,010	4,360	3,560	1,430	1,000	784	719
28	1,700	4,700	1,840	1,360	1,600	3,910	4,500	3,790	1,580	987	773	711
29	*1,560	5,090	2,120	1,360	1,590	3,520	3,840	3,520	2,800	928	768	716
30	1,440	5,510	1,980	2,240	-	3,280	3,520	3,160	2,740	948	751	702
31	1,330	-	1,800	4,080	-	3,110	-	3,000	-	915	746	-
Total	61,104	64,530	93,550	44,350	84,520	63,870	104,260	107,340	62,550	37,339	25,183	22,158
Mean	1,971	2,151	3,018	1,431	2,914	2,060	3,475	3,463	2,085	1,204	812	739
Cfsm	4.11	4.49	6.30	2.99	6.08	4.30	7.25	7.23	4.35	2.51	1.70	1.54
In.	4.74	5.01	7.26	3.44	6.56	4.96	8.09	8.33	4.86	2.90	1.96	1.72
Ac-ft	121,200	128,000	185,600	87,970	167,600	126,700	206,800	212,900	124,100	74,060	49,950	43,950

Calendar year 1951: Max 10,700 Min 775 Mean 2,401 Cfsm 5.01 In. 68.01 Ac-ft 1,738,000
Water year 1951-52: Max 9,270 Min 693 Mean 2,016 Cfsm 4.40 In. 59.83 Ac-ft 1,529,000

Peak discharge (base, 8,100 cfs).--Oct. 23 (9 a.m.) 10,400 cfs (7.65 ft); Dec. 1 (9 a.m.) 10,900 cfs (7.85 ft); Feb. 4 (1:30 p.m.) 8,190 cfs (6.77 ft).
* Discharge measurement made on this day.

Clackamas River near Cazadero, Oreg.

Location.--Lat 45°14'30", long. 122°16'20", in NE¼ sec. 11, T. 4 S., R. 4 E., on right bank half a mile upstream from backwater from Cazadero Dam of Portland General Electric Co. and 2½ miles (revised) southeast of Cazadero.
Drainage area.--657 sq mi.
Records available.--April 1908 to September 1952. Published as "at Estacada" April to December 1908.
Gage.--Water-stage recorder. Datum of gage is 532.0 ft above mean sea level (levels by Portland General Electric Co.); gage readings have been reduced to elevations above mean sea level. Apr. 6 to Dec. 31, 1908, staff gage 5 miles downstream at different datum. Jan. 1 to Nov. 19, 1909, staff gages and Nov. 20, 1909, to Oct. 9, 1922, water-stage recorder, at site half a mile downstream at datum 532.0 ft lower. Oct. 10 to Nov. 14, 1922, staff gage at present site and datum.
Average discharge.--44 years, 2,639 cfs.
Extremes.--Maximum discharge during year, 14,500 cfs Oct. 23 (elevation, 542.74 ft); minimum, 551 cfs Sept. 22, 23, 24, 29, 30 (elevation, 533.42 ft); minimum daily, 842 cfs Sept. 19, 23.
1908-52: Maximum discharge, 60,800 cfs Mar. 31, 1931 (elevation, 556.5 ft), by computation of peak flow over dam, from data furnished by Portland General Electric Co.; minimum, 410 cfs Oct. 20, 1925, Sept. 28, 1930 (elevation, 532.03 ft), caused by shutdown in powerplant at Three Lynx; minimum daily, 587 cfs Aug. 17, 1930.
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Elevation (feet)
292.....	1910	Nov. 22, 1909	43,100	543.70
444.....	1916	Dec. 22, 1915	28,300	539.2
464.....	1917	June 9, 1917	9,260	531.77
554.....	1922	Nov. 20, 1921	44,300	546.0

Remarks.--Records excellent. Some diurnal fluctuation during low flow caused by Oak Grove powerplant. Oregon City diverts about 3,300 acre-ft annually from South Fork Clackamas River for municipal water supply.
Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.
Revisions.--W 1184: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1908-9, 1916, and 1923, superseding those published in Water-Supply Papers 252, 272, 444, and 574, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1908		1908-Con.		1908-Con.		1915-Con.		1916-Con.	
Aug. 5	800	Sept. 12	800	Dec. 6	950	Dec. 1	4,770	Feb. 19	6,930
6	800	13	720	7	950	5	7,130	20	5,870
7	800	14	720	8	1,100	6	8,490	21	5,220
8	800	15	760	9	1,000	7	6,750	22	4,770
9	760	16	760	10	950	8	5,870	Mar. 9	5,220
10	740	17	700	11	1,250	9	7,120	10	5,540
11	780	18	700			10	5,700	11	6,210
16	840	19	640	1909		11	4,770	12	6,210
17	840	20	640	Jan. 7	2,800	21	9,750	13	5,700
18	840	21	670	8	2,500	22	22,200	14	4,770
19	840	22	640	9	2,300	23	10,200	19	4,920
20	800	23	640	11	1,900	24	6,750	20	7,500
21	750	24	640	12	1,700	25	5,870	21	7,890
22	700	25	700	13	1,900	26	4,920	22	8,900
23	700	26	760					23	6,930
24	800	27	1,000	1915		1916		24	5,700
26	900	Nov. 9	1,050	Nov. 17	7,470	Feb. 2	4,920	25	9,320
27	800	10	1,000	18	9,250	6	5,780	26	15,200
28	800	11	900	19	8,900	7	18,900	27	11,500
29	1,100	12	850	20	5,870	8	13,000	28	7,890
31	900	13	850	21	6,320	9	9,740	29	6,390
Sept. 1	840	14	850	22	6,060	10	11,300	30	5,380
2	840	15	800	23	14,500	11	13,500	31	4,920
3	840	16	850	24	7,800	12	8,900		
4	900	30	1,700	25	12,300	13	6,930	1923	
5	950	Dec. 1	1,500	26	9,750	14	6,930	Feb. 8	1,710
8	860	2	1,250	27	5,870	15	7,890	July 21	1,350
9	860	3	1,250	28	4,490	16	8,490		
10	800	4	1,150	29	7,890	17	8,490		
11	800	5	1,150	30	6,390	18	7,690		

	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
August 1908.....	1,100	700	856	1.29	1.49	52,600
September.....	1,000	640	793	1.19	1.33	47,200
November.....	5,450	800	2,050	3.09	3.45	122,000
December.....	4,380	950	2,080	3.13	3.61	128,000
January 1909.....	22,700	1,700	5,820	8.86	10.22	358,000
Water year 1908-9.....	22,700	764	2,550	3.88	52.66	1,850,000
Calendar year 1909.....	37,600	825	3,230	4.92	66.48	2,340,000
November 1915.....	14,500	980	4,480	6.82	7.61	267,000
December.....	22,200	2,430	5,450	8.30	9.57	335,000
Calendar year 1915.....	22,200	705	2,310	3.52	47.70	1,672,000
February 1916.....	18,900	2,490	6,710	10.2	11.00	386,000
March.....	15,200	2,860	5,780	8.80	10.14	355,000
Water year 1915-16.....	22,200	705	3,810	5.80	79.02	2,769,000
Calendar year 1916.....	18,900	950	3,420	5.21	70.74	2,480,000
February 1923.....	2,880	1,460	1,990	3.03	3.16	111,000
July.....	3,500	1,140	1,660	2.53	2.92	102,000
Water year 1922-23.....	49,700	760	2,860	4.35	59.09	2,070,000
Calendar year 1923.....	49,700	880	2,980	4.54	61.66	2,160,000

Clackamas River near Cazadero, Oreg.--Continued

Rating table, water year 1951-52 (elevation, in feet, and discharge, in cubic feet per second)

534.1	820
535.0	1,420
537.0	3,390
539.0	6,340
542.0	12,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,570	1,580	11,600	2,170	8,590	2,120	3,690	4,580	3,110	3,520	1,120	897
2	2,940	1,560	7,930	2,020	9,310	2,030	3,520	4,070	2,950	2,850	1,070	892
3	3,610	1,560	7,020	1,960	8,450	2,030	3,410	3,610	2,940	2,540	1,060	880
4	2,520	1,600	7,160	1,940	11,200	2,070	3,370	3,290	3,010	2,300	978	880
5	1,730	1,540	7,930	1,860	8,430	2,000	3,980	3,090	3,200	2,090	1,020	954
6	1,470	1,390	5,430	1,790	6,270	1,970	5,160	2,980	3,140	1,960	1,020	936
7	1,310	1,420	4,100	1,720	5,080	1,920	5,440	3,020	2,810	1,830	1,020	904
8	1,200	1,350	3,400	1,660	4,380	1,860	4,690	3,270	2,640	1,740	1,000	948
9	1,140	1,330	2,980	1,750	4,000	1,940	4,110	3,380	2,650	1,670	1,140	970
10	1,110	1,630	2,720	1,960	3,780	2,310	3,800	3,440	2,660	1,620	1,020	940
11	1,130	2,220	2,780	1,830	3,810	2,230	3,700	3,930	2,550	1,560	1,010	908
12	1,480	5,620	2,840	1,720	3,680	2,070	3,630	4,040	2,340	1,520	997	912
13	1,700	5,280	2,790	1,660	3,330	2,000	3,900	4,750	2,120	1,480	984	901
14	2,350	*4,660	2,620	1,650	3,090	1,940	4,240	5,060	2,350	1,430	978	882
15	2,920	3,680	2,460	1,600	2,960	1,860	4,060	4,750	2,850	1,380	972	878
16	2,300	2,950	2,630	*1,530	2,820	1,800	3,860	4,500	2,440	1,360	972	869
17	2,020	2,570	2,550	1,470	2,650	1,910	3,870	4,920	2,230	*1,310	954	869
18	1,790	2,300	4,320	1,460	2,530	1,900	4,740	5,060	2,160	1,280	960	888
19	*2,190	2,170	4,310	1,440	2,470	1,840	*5,750	5,220	2,120	1,270	954	842
20	3,560	2,130	3,310	1,490	2,310	1,770	4,980	5,460	2,120	1,220	948	850
21	3,500	2,090	*3,510	1,450	2,170	1,720	4,330	5,550	2,130	1,200	948	848
22	3,720	2,010	6,410	1,440	2,090	*1,680	4,060	4,740	2,050	1,230	936	852
23	10,700	1,900	4,650	1,440	*2,070	2,010	3,910	*4,440	1,930	1,220	930	842
24	6,450	1,800	3,670	1,680	1,960	6,110	4,100	4,450	1,900	1,200	942	*846
25	4,290	1,870	3,110	1,880	1,990	7,370	4,800	4,470	1,870	1,190	942	892
26	3,200	5,240	2,790	1,900	2,140	6,850	5,440	4,240	1,780	1,140	924	852
27	2,670	5,270	2,610	2,050	2,290	5,960	5,550	4,150	1,780	1,160	919	850
28	2,280	6,500	2,440	2,060	2,220	5,540	5,840	4,400	2,020	1,140	914	849
29	2,090	6,970	2,880	2,120	2,210	4,840	4,960	4,080	5,270	1,070	*914	847
30	1,910	7,100	2,700	3,630	-	4,410	4,580	3,580	*5,190	1,100	902	845
31	1,750	-	2,400	6,800	-	4,230	-	3,380	-	1,070	897	-
Total	82,600	89,290	128,050	61,130	118,280	90,190	131,470	129,900	78,310	48,650	30,345	26,523
Mean	2,665	2,980	4,131	1,972	4,079	2,909	4,382	4,190	2,610	1,570	979	884
Cfsm	4.06	4.54	6.29	3.00	6.21	4.43	6.67	6.38	3.97	2.39	1.49	1.35
In.	4.68	5.05	7.25	3.46	6.70	5.11	7.44	7.35	4.43	2.75	1.72	1.50
Ac-ft	163,800	177,100	254,000	121,200	234,600	178,900	260,800	257,700	155,300	96,500	60,190	52,610

Calendar year 1951: Max 14,100 Min 870 Mean 3,195 Cfsm 4.86 In. 66.01 Ac-ft 2,313,000
Water year 1951-52: Max 11,600 Min 842 Mean 2,773 Cfsm 4.22 In. 57.44 Ac-ft 2,013,000

Peak discharge (base, 11,000 cfs).--Oct. 23 (9:30 a.m.) 14,500 cfs (542.74 ft); Dec. 1 (11 a.m.) 13,300 cfs (542.27 ft); Feb. 4 (1 p.m.) 11,500 cfs (541.47 ft).
* Discharge measurement made on this day.

Johnson Creek at Sycamore, Oreg.

Location.--Lat 45°28'40", long. 122°30'25", in lot 2, SW¼ sec. 13, T. 1 S., R. 2 E., on right bank a third of a mile southwest of Sycamore station and 2½ miles east of city limits of Portland.

Drainage area.--28.2 sq mi.

Records available.--June 1940 to September 1952.

Gage.--Water-stage recorder and concrete control with steel weir for low flows. Datum of gage is 228.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--12 years, 52.0 cfs.

Extremes.--Maximum discharge during year, 714 cfs Dec. 1 (gage height, 8.39 ft); minimum, 0.6 cfs Aug. 11 (gage height, 0.77 ft).
1940-52: Maximum discharge, 2,110 cfs Feb. 10, 1949 (gage height, 13.77 ft, from floodmark); minimum, 0.2 cfs Aug. 14-16, 18-22, 1940, Aug. 2, 21, 22, 1941.

Remarks.--Records good except those below 3 cfs, which are fair. Small diversions above station for irrigation. Slight diurnal fluctuation at low flow caused by recreational ponds upstream.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3 to Nov. 12)

0.8	0.7	2.0	46
.9	1.3	3.0	106
1.0	2.2	5.0	290
1.1	4.5	7.5	590
1.5	22		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	7.8	544	79	322	72	46	11	3.6	6.6	1.9	1.3
2	15	6.1	252	60	386	58	46	8.6	3.6	4.9	1.8	1.2
3	*20	8.2	422	50	362	68	40	7.8	3.1	4.3	1.8	1.8
4	8.2	14	*410	46	348	72	35	7.0	2.9	3.6	1.6	1.8
5	3.6	7.4	318	40	191	84	30	6.6	2.7	2.9	1.9	1.5
6	2.2	5.7	226	36	133	150	26	7.0	3.4	2.9	1.8	1.8
7	2.0	4.9	143	34	99	101	22	6.6	3.8	2.1	1.7	1.8
8	2.1	4.3	106	35	78	77	20	11	3.8	2.4	1.6	1.9
9	1.8	5.7	77	124	69	88	18	10	*3.6	2.7	1.4	2.2
10	1.7	47	62	284	61	198	16	7.8	3.8	2.7	1.4	1.7
11	1.8	106	54	233	58	*142	14	7.0	4.9	2.7	.9	1.8
12	2.2	241	48	181	62	105	13	6.1	4.9	2.4	1.3	1.9
13	2.1	194	42	127	52	83	13	6.1	4.5	2.4	1.7	1.9
14	3.4	207	36	118	52	106	14	6.1	7.0	2.2	1.8	1.8
15	3.6	124	34	96	58	74	13	6.1	7.8	*2.1	1.9	1.6
16	2.9	83	52	75	54	58	11	5.7	6.6	1.8	1.8	1.8
17	2.2	61	53	59	48	54	11	4.5	5.7	1.8	1.7	2.0
18	2.7	47	*208	56	46	91	9.9	4.5	4.5	1.8	1.7	1.9
19	3.4	41	146	56	64	98	9.4	4.0	4.3	1.6	1.8	1.9
20	19	42	106	84	66	78	9.0	5.3	4.0	1.8	2.0	1.8
21	26	32	107	88	64	66	8.2	6.1	4.3	1.3	2.2	1.8
22	52	26	135	83	61	56	*7.8	6.1	4.0	1.4	1.9	1.3
23	*316	*23	99	138	82	59	7.8	5.3	3.6	1.8	2.1	1.4
24	154	20	74	207	112	262	7.4	5.3	3.6	1.9	2.0	1.7
25	79	38	59	176	128	243	7.4	4.3	3.6	1.7	*1.8	1.8
26	50	110	47	143	161	160	7.4	3.8	3.6	1.9	2.0	1.8
27	34	112	44	111	115	112	8.6	4.5	3.8	1.9	1.9	1.8
28	25	154	54	*88	87	92	11	4.5	5.7	1.6	1.8	1.8
29	21	197	219	73	75	72	12	4.3	7.4	1.8	1.8	1.5
30	16	262	168	212	-	63	12	3.6	9.9	1.9	1.8	1.8
31	12	-	116	357	-	55	-	3.6	-	1.8	1.6	-
Total	895.9	2,231.1	4,461	3,549	3,494	3,097	505.9	190.2	138.0	74.7	54.4	52.1
Mean	28.9	74.4	144	114	120	99.9	16.9	6.14	4.60	2.41	1.75	1.74
Cfsm	1.02	2.64	5.11	4.04	4.26	3.54	0.599	0.218	0.163	0.085	0.062	0.062
In.	1.18	2.94	5.88	4.68	4.61	4.08	0.67	0.25	0.18	0.10	0.07	0.07
Ac-ft	1,780	4,430	8,850	7,040	6,930	6,140	1,000	377	274	148	108	103

Calendar year 1951: Max 674 Min 1.2 Mean 63.7 Cfsm 2.26 In. 30.65 Ac-ft 46,100
Water year 1951-52: Max 544 Min 0.9 Mean 51.2 Cfsm 1.82 In. 24.71 Ac-ft 37,180

Peak discharge (base, 450 cfs).--Dec. 1 (8 a.m.) 714 cfs (8.39 ft); Dec. 3 (12:30 p.m.) 548 cfs (7.18 ft); 11 p.m. Feb. 3 to 1 a.m. Feb. 4, 491 cfs (6.74 ft).
* Discharge measurement made on this day.

Salmon Creek near Battle Ground, Wash.

Location.--Lat 45°46'25", long. 122°26'35", in NE¼SW¼ sec. 4, T. 3 N., R. 3 E., on left bank 100 ft upstream from highway bridge, 150 ft downstream from Rock Creek, and 4 miles east of Battle Ground.

Drainage area.--18.3 sq mi.

Records available.--October 1943 to September 1952.

Gage.--Staff gage and crest-stage indicator; gage read once daily. Datum of gage is 354.88 ft above mean sea level (river-profile survey). Prior to Oct. 1, 1950, staff gage at same site at datum 1.0 ft higher.

Average discharge.--8 years (1944-52), 64.1 cfs.

Extremes.--Maximum discharge during year, 855 cfs Oct. 23 (gage height, 3.15 ft); minimum observed, 2.0 cfs Sept. 23, 24 (gage height, 0.86 ft).
1943-52: Maximum discharge observed, 1,440 cfs Feb. 17, 1949 (gage height, 3.10 ft), from rating curve extended above 520 cfs; minimum observed, 1.3 cfs Aug. 20, 22, 28-30, Sept. 5-9, 13, 14, 1949, Sept. 14-16, 22, 1951.

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

Revisions (water years).--W 1044: 1944.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 4				Feb. 5 to Sept. 30			
1.1	4.9	2.1	150	0.8	1.6	1.9	88
1.3	9.4	2.3	225	1.0	3.1	2.2	185
1.5	21	2.7	460	1.2	5.7	2.5	335
1.7	48	3.1	800	1.4	11.5	3.0	700
1.9	95			1.6	26		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	32	*287	60	171	41	83	21	9.3	15	3.3	2.7
2	45	30	185	52	225	38	88	19	9.3	10.5	3.8	2.2
3	35	48	311	*48	275	41	77	17	8.6	9.3	3.5	2.2
4	18	38	323	45	395	49	72	16	7.9	8.6	3.1	2.1
5	11	32	347	45	245	72	61	16	*8.2	7.9	a3.0	2.1
6	11	28	371	42	178	72	49	16	7.9	7.5	a2.9	2.7
7	8.8	28	201	38	*134	66	45	13.5	7.9	7.0	3.1	3.5
8	7.7	25	138	45	100	57	41	19	7.5	7.5	3.5	4.8
9	7.2	23	115	95	106	66	35	21	7.5	*6.1	3.1	5.1
10	*6.4	68	84	138	88	193	32	19	7.0	5.7	a3.1	3.5
11	7.7	347	68	120	66	137	29	17	8.6	5.7	*3.0	2.9
12	18	235	62	100	72	124	26	16	11.5	a5.6	2.7	3.3
13	42	193	56	79	57	100	26	16	8.6	a5.5	2.6	3.5
14	110	201	48	79	57	185	26	21	7.9	5.4	*2.9	2.9
15	60	193	42	64	53	112	24	16	11.5	4.8	2.9	2.4
16	52	110	84	56	49	a90	22	15	9.3	4.2	3.1	2.4
17	35	79	120	45	41	72	21	13.5	7.9	4.5	2.9	2.4
18	30	73	193	45	41	83	21	12.5	7.5	4.5	2.7	2.4
19	90	60	178	42	41	*94	21	12.5	6.6	4.8	2.9	2.4
20	115	56	132	60	38	88	17	15	6.6	4.5	2.7	2.4
21	100	45	144	64	38	83	17	16	10.5	4.8	2.6	2.1
22	209	38	359	60	35	77	17	13.5	11.5	4.8	2.6	2.1
23	760	35	209	73	38	83	16	12.5	7.9	4.2	3.3	2.0
24	209	32	144	144	41	502	*15.5	11.5	7.5	5.1	3.3	2.0
25	164	32	110	138	45	421	15	10.5	8.6	4.2	4.8	2.2
26	115	48	90	115	72	255	15	10.5	7.9	4.0	4.0	2.2
27	90	68	79	105	66	235	13.5	10	7.5	3.8	3.5	2.2
28	68	79	90	95	57	137	21	9.3	9.3	4.2	3.1	2.2
29	56	95	84	79	45	112	19	11.5	9.3	3.8	2.7	2.1
30	45	*193	79	144	-	88	19	10	22	3.5	2.9	2.1
31	38	-	73	157	-	83	-	9.3	-	3.3	2.7	-
Total	2,586.8	2,564	4,806	2,472	2,869	3,856	984.0	456.6	269.1	180.3	96.3	79.1
Mean	83.4	85.5	155	79.7	98.9	124	32.8	14.7	8.97	5.82	3.11	2.64
Cfsm	4.56	4.67	8.47	4.36	5.40	6.78	1.79	0.803	0.490	0.318	0.170	0.144
In.	5.26	5.21	9.77	5.02	5.83	7.84	2.00	0.93	0.55	0.37	0.20	0.16
Ac-ft	5,130	5,090	9,530	4,900	5,690	7,650	1,950	906	534	358	191	157

Calendar year 1951: Max 760 Min 1.3 Mean 69.9 Cfsm 3.82 In. 51.89 Ac-ft 50,630
Water year 1951-52: Max 760 Min 2.0 Mean 58.0 Cfsm 3.17 In. 43.14 Ac-ft 42,090

Peak discharge (base, 470 cfs).--Oct. 23 (time unknown) 855 cfs (3.15 ft); Dec. 22 (time unknown) 516 cfs (2.78 ft); Feb. 4 (time unknown) 474 cfs (2.72 ft); Mar. 24 (time unknown) 523 cfs (2.79 ft).

* Discharge measurement made on this day.

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

Lewis River near Cougar, Wash.

Location.--Lat 46°03'30", long. 122°12'50", in SE¼ sec. 29, T. 7 N., R. 5 E., on left bank 1 mile downstream from Swift Creek and 4 miles east of Cougar.

Drainage area.--481 sq mi.

Records available.--July to October 1909, November 1909 to March 1912 (gage heights only), June 1924 to September 1952. Published as "at Peterson ranch, near Cougar" 1909.

Gage.--Water-stage recorder. Datum of gage is 576.4 ft above mean sea level (river-profile survey). July 1909 to June 1910, staff gage at site 1,000 ft upstream from Swift Creek at different datum. July 1910 to March 1912, staff gage at approximately present location at different datum. June 19 to Aug. 25, 1924, staff gage and Aug. 26, 1924, to Dec. 28, 1934, water-stage recorder, at present site at datum 2.0 ft higher.

Average discharge.--28 years (1924-52), 2,807 cfs.

Extremes.--Maximum discharge during year, 18,800 cfs Dec. 1 (gage height, 10.12 ft); minimum, 704 cfs Sept. 29, 30 (gage height, 3.09 ft).
1909-12, 1924-52: Maximum discharge, 54,400 cfs Dec. 21, 1933 (gage height, 15.7 ft, datum then in use), from rating curve extended above 15,000 cfs; minimum, 454 cfs Oct. 21, 1931 (gage height, 0.01 ft, datum then in use).

Remarks.--Records excellent. No diversion or regulation.

Revisions (water years).--W 904: 1939. W 964: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 30				Dec. 1 to Sept. 30			
3.8	1,330	6.0	4,570	3.0	650	6.0	4,470
4.0	1,530	7.0	6,940	3.3	850	7.0	6,830
4.5	2,110	8.0	9,950	3.6	1,100	8.0	9,900
5.0	2,800			4.0	1,490	10.0	18,200
				5.0	2,750		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*2,780	2,470	16,100	1,770	5,740	1,840	3,190	5,590	3,850	2,470	1,060	829
2	5,590	2,300	*11,400	1,670	6,080	1,810	3,270	5,000	3,820	2,260	1,040	829
3	5,470	2,340	9,080	1,620	6,540	1,810	3,180	4,550	4,000	2,210	1,030	829
4	3,280	2,270	7,910	1,660	12,700	1,820	3,080	4,150	4,270	2,260	1,030	822
5	2,450	2,060	7,250	*1,670	10,200	1,750	3,520	3,840	*4,530	2,140	1,040	815
6	2,040	1,950	5,690	1,620	7,500	1,720	4,470	3,610	4,510	1,970	1,010	822
7	1,770	1,870	4,670	1,600	5,980	1,690	4,910	3,460	4,210	1,870	1,000	815
8	1,620	1,820	4,050	1,560	*4,910	1,670	4,590	3,610	3,980	1,830	1,030	843
9	1,480	1,800	3,540	1,610	4,470	1,760	4,250	3,680	4,090	1,880	1,080	850
10	1,400	2,540	3,240	1,540	4,110	2,260	4,030	4,030	4,070	*1,880	1,040	815
11	1,440	3,560	3,080	1,490	4,070	2,140	3,930	4,690	3,520	1,810	994	801
12	1,530	5,380	3,020	1,430	3,890	1,990	3,760	4,910	3,050	1,730	*978	801
13	1,830	6,060	2,880	1,390	3,590	1,940	3,910	5,640	2,710	1,670	970	787
14	2,280	5,290	2,680	1,390	3,400	1,850	4,250	5,760	2,570	1,580	970	773
15	2,580	4,380	2,620	1,370	3,210	1,810	4,310	5,400	2,600	1,510	954	773
16	3,160	3,720	2,600	1,320	3,040	1,780	4,330	5,550	2,470	1,460	938	766
17	2,720	3,310	2,510	1,280	2,860	1,840	4,490	6,230	2,440	1,380	922	766
18	2,580	3,020	3,110	1,310	2,670	1,850	5,150	6,620	2,540	1,350	914	773
19	3,660	2,800	2,750	1,310	2,550	1,770	6,080	6,750	2,740	1,310	906	780
20	6,750	2,650	2,510	1,310	2,410	*1,710	5,620	6,890	2,780	1,280	898	766
21	5,610	2,470	2,870	1,280	2,280	1,660	5,110	6,410	2,710	1,250	890	752
22	5,240	2,300	3,290	1,250	2,170	1,630	4,910	5,620	2,540	1,230	914	745
23	9,920	2,190	2,820	1,230	2,070	1,710	*4,670	5,550	2,330	1,220	970	738
24	8,350	2,070	2,500	1,250	2,000	2,480	4,740	5,330	2,250	1,230	930	738
25	6,210	2,150	2,330	1,220	2,000	3,210	5,570	5,620	2,210	1,200	994	745
26	4,980	4,120	2,230	1,360	2,010	3,540	6,310	5,500	2,170	1,180	938	738
27	4,120	4,800	2,170	1,520	1,990	3,470	6,970	5,470	2,290	1,160	890	731
28	3,590	6,210	2,120	1,480	1,940	3,620	7,390	5,810	2,280	1,140	866	717
29	3,310	6,830	2,200	1,470	1,900	3,540	6,310	5,310	2,530	1,130	858	704
30	2,960	7,860	2,020	3,240	-	3,560	5,950	4,590	2,840	1,110	858	704
31	2,710	-	1,880	4,710	-	3,460	-	4,210	-	1,080	843	-
Total	113,410	102,590	127,120	49,930	118,280	68,690	142,250	159,380	92,900	48,780	29,755	23,367
Mean	3,658	3,420	4,101	1,611	4,079	2,216	4,742	5,141	3,097	1,574	960	779
Cfsm	7.60	7.11	8.53	3.35	8.48	4.61	9.86	10.7	6.44	3.27	2.00	1.62
In.	8.77	7.93	9.83	3.86	9.15	5.31	11.00	12.32	7.18	3.77	2.30	1.81
Ac-ft	224,900	203,500	252,100	99,030	234,600	136,200	282,100	316,100	184,300	96,750	59,020	46,350

Calendar year 1951: Max 23,400 Min 798 Mean 3,313 Cfsm 6.89 In. 93.51 Ac-ft 2,399,000
Water year 1951-52: Max 16,100 Min 704 Mean 2,941 Cfsm 6.11 In. 83.23 Ac-ft 2,135,000

Peak discharge (base, 9,000 cfs).--Oct. 23 (9:30 a.m.) 11,100 cfs (8.33 ft); Dec. 1 (9:30 a.m.) 18,800 cfs (10.12 ft); Feb. 4 (10:30 a.m.) 14,200 cfs (9.13 ft).
* Discharge measurement made on this day.

Lewis River at Ariel, Wash.

Location.--Lat 45°57'10", long. 122°33'45", in NW¼NE¼ sec. 4, T. 5 N., R. 2 E., on right bank at Ariel, half a mile downstream from Ariel Dam and powerplant and 3 miles upstream from Cedar Creek.

Drainage area.--731 sq mi.

Records available.--July to November 1909 (gage heights only, for November), July 1922 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 44 ft above mean sea level, unadjusted (levels by Northwestern Electric Co.). July to November 1909, staff gage at site 3 miles upstream at different datum. July 27, 1922, to Apr. 20, 1930, staff gage at site half a mile downstream at datum 0.9 ft higher.

Average discharge.--29 years (1923-52), 4,582 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 24,900 cfs Oct. 23 (gage height, 12.96 ft); minimum not determined, probably occurred sometime during August or September during period of no gage-height record or when intakes were out of water; minimum daily, 700 cfs Aug. 3-7.

1909, 1922-52: Maximum discharge, 129,000 cfs Dec. 22, 1933 (gage height, 35.0 ft, from floodmarks), from rating curve extended above 22,000 cfs 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 cfs July 6, 1931.

Remarks.--Records good except those for Aug. 18 to Sept. 30, which are fair, and those for period of no gage-height record, which are poor. No diversion. Flow regulated by Lake Merwin. Yale Dam at the head of backwater from Ariel Dam was under construction during the water year and sufficiently advanced so that water was stored during August and September. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Cooperation.--Gage-height record collected in cooperation with Pacific Power & Light Co.

Revisions [water years].--W 884: 1938. W 984: 1936-37, 1940-42.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	837	5,050	11,800	3,910	5,500	5,820	4,760	8,430	4,650	5,240	970	768
2	7,300	5,770	*18,300	6,170	6,790	5,280	4,800	7,820	5,710	4,800	a840	768
3	10,400	5,490	16,100	4,870	6,340	5,600	4,980	7,070	5,550	4,620	a700	780
4	7,300	4,570	14,700	4,950	15,500	5,570	4,920	6,030	5,500	778	a700	798
5	5,720	5,740	14,800	4,060	18,500	5,570	3,320	6,280	5,390	1,350	a700	780
6	4,470	5,420	11,400	1,790	14,000	5,710	2,470	5,940	5,390	764	a700	780
7	739	5,320	8,870	4,200	10,700	5,580	4,860	6,140	5,090	2,140	a700	756
8	2,380	5,260	7,900	3,830	*8,640	5,560	4,870	5,990	2,870	2,390	a710	774
9	2,270	4,790	6,920	3,760	8,080	5,100	4,950	5,810	5,500	2,530	a720	774
10	1,910	4,900	7,300	3,940	7,450	5,560	4,900	5,940	5,660	3,040	a720	774
11	3,030	5,210	5,660	4,110	7,860	5,690	4,940	4,720	5,710	*2,990	a720	780
12	3,860	6,940	5,810	3,720	7,550	6,590	3,750	5,910	5,540	1,860	*a730	774
13	4,600	6,460	5,710	2,270	7,650	5,850	1,310	5,880	4,580	759	*a740	768
14	5,050	5,930	5,810	3,930	6,270	5,800	4,910	5,940	3,780	2,540	a740	768
15	5,050	5,840	5,680	3,040	6,280	5,440	4,950	7,370	1,320	2,130	a740	774
16	5,750	6,030	5,700	3,370	6,150	4,970	4,700	7,430	2,460	2,020	a740	786
17	6,070	6,100	7,570	2,780	7,440	5,500	4,650	7,450	1,740	1,940	a740	792
18	6,180	8,060	5,620	2,920	7,770	5,860	4,600	8,560	3,540	1,560	756	792
19	6,680	8,060	5,620	2,160	5,930	5,480	4,910	8,850	3,660	760	774	786
20	9,970	8,050	5,600	808	6,100	5,460	3,590	8,850	4,030	747	786	798
21	10,800	7,500	5,710	3,140	7,160	4,600	5,340	8,930	2,500	2,150	798	786
22	12,400	6,960	5,410	3,010	6,930	4,150	*5,460	7,840	756	1,720	798	816
23	23,000	7,270	6,090	3,310	6,900	3,550	5,870	6,860	3,060	1,670	798	816
24	17,800	6,840	7,310	2,500	7,560	4,410	5,650	7,510	4,010	1,540	768	810
25	9,280	5,220	6,060	3,010	7,510	4,470	5,940	7,360	3,760	1,530	780	822
26	7,740	6,720	7,830	1,950	5,840	4,540	5,720	7,000	2,220	741	774	816
27	7,700	6,690	7,810	862	6,050	4,630	5,180	6,720	3,130	716	768	828
28	5,630	6,620	7,670	3,660	5,530	4,690	5,390	7,020	1,850	1,670	768	804
29	6,260	7,610	7,210	5,000	5,370	4,470	7,480	7,410	778	986	768	834
30	6,040	7,070	7,680	5,340	-	3,720	8,210	6,100	4,930	1,310	768	852
31	6,020	-	7,310	4,770	-	4,740	-	5,700	-	1,090	762	-
Total	212,236	187,490	252,960	107,138	229,350	159,960	147,380	214,860	114,664	60,081	23,476	23,754
Mean	6,846	6,250	8,160	3,456	7,909	5,160	4,913	6,931	3,822	1,938	757	792
Ac-ft	421,000	371,900	501,700	212,500	454,900	317,300	292,300	426,200	227,400	119,200	46,560	47,120
(†)	+11,390	-19,930	-22,910	-19,540	-14,140	-46,080	+32,900	-2,780	-800	+4,380	+26,150	+10,580

Adjusted for change in reservoir contents

Mean	7,032	5,916	7,787	3,139	7,663	4,411	7,146	6,886	3,808	2,010	1,183	970
Cfsm	9.62	8.09	10.7	4.29	10.5	6.03	9.78	9.42	5.21	2.75	1.62	1.33
In.	11.09	9.03	12.28	4.95	11.31	6.96	10.91	10.86	5.81	3.17	1.86	1.48
Ac-ft	432,400	352,000	478,800	193,000	440,800	271,200	425,200	423,400	226,600	123,600	72,710	57,700

Observed

Calendar year 1951: Max 36,600 Min 668 Mean 5,380 Ac-ft 3,895,000
Water year 1951-52: Max 23,000 Min 700 Mean 4,736 Ac-ft 3,438,000

Adjusted

Calendar year 1951: Mean 5,307 Cfsm 7.26 In. 98.53 Ac-ft 3,842,000
Water year 1951-52: Mean 4,818 Cfsm 6.59 In. 89.71 Ac-ft 3,497,000

* Discharge measurement made on this day.

† Change in contents, in acre-feet, in Lake Merwin and, beginning August 1952, in Yale Reservoir; records for Yale Reservoir furnished by Pacific Power & Light Co.

a No gage-height record; discharge estimated on basis of 2 discharge measurements and power records at dam.

Cedar Creek near Ariel, Wash.

Location.--Lat 45°55'50", long. 122°31'40", in W½ sec. 11, T. 5 N., R. 2 E., on right bank at downstream side of highway bridge, 1½ miles upstream from Pup Creek and 2½ miles southeast of Ariel.

Drainage area.--41.3 sq mi.

Records available.--June 1951 to September 1952.

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

Extremes.--Maximum discharge during year, 1,120 cfs Feb. 4 (gage height, 6.39 ft); minimum, 8.3 cfs Sept. 23, 24; minimum gage height, 1.74 ft Aug. 20, 21, 22.
1951-52: Maximum discharge, that of Feb. 4, 1952; minimum, 4.6 cfs Sept. 16, 1951 (gage height, 1.66 ft).

Remarks.--Records good except those for Oct. 5-9, July 24 to Aug. 14, which are fair, and those for period of no gage-height record, which are poor. No regulation. Some diversion for domestic use and irrigation above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7-9)

Oct. 1-22				Oct. 23 to Sept. 30			
2.0	24	3.0	135	1.7	10.5	3.5	255
2.2	39	3.5	220	1.9	24	4.0	365
2.5	69	4.0	330	2.1	41	5.0	645
				2.5	85	6.3	1,080
				3.0	160		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	138	*675	210	693	148	249	83	37	36	13.5	11
2	129	130	615	191	729	138	283	74	36	32	13.5	10.5
3	97	184	741	176	877	176	245	71	36	30	13	10.5
4	64	165	793	*171	1,050	197	233	66	*35	28	12.5	11
5	49	135	933	165	807	205	226	65	35	27	11	11
6	39	124	807	155	636	199	205	64	34	26	13	12.5
7	33	120	669	152	*510	186	182	62	33	25	15.5	13
8	28	120	576	148	422	180	167	68	32	23	16	16.5
9	*26	141	483	238	375	227	157	64	31	*22	16	16.5
10	24	203	420	259	318	269	145	59	31	22	15.5	14
11	27	320	360	239	318	265	135	56	37	21	*14	11.5
12	35	462	309	218	301	257	129	54	38	22	13.5	11
13	44	597	261	201	249	261	130	56	34	21	13.5	11
14	71	570	227	203	229	269	130	64	42	*a21	*14	10.5
15	71	483	231	210	212	239	115	59	42	a20	14.5	10
16	67	408	251	218	193	224	108	54	36	a20	15.5	10
17	59	342	224	210	182	229	101	49	33	a20	14.5	10
18	67	297	385	218	182	251	94	49	30	19.5	14.5	10.5
19	104	279	332	212	199	237	94	49	28	19.5	14	10
20	163	257	318	222	182	*214	88	55	30	19	13.5	8.8
21	183	220	526	199	164	203	83	60	36	19	13	8.8
22	305	201	693	182	152	191	*80	53	37	18	13	8.8
23	*717	180	585	208	148	218	78	47	31	18	14.5	8.3
24	537	167	483	267	143	402	74	44	30	17	14.5	8.3
25	382	182	410	239	158	425	73	42	30	16.5	17	8.8
26	297	247	360	257	169	385	70	41	28	16	16	9.4
27	253	*220	328	275	152	355	88	39	30	15.5	14	9.4
28	222	241	295	287	145	330	86	41	34	14.5	13.5	9.4
29	195	301	345	297	157	305	81	43	43	14.5	11.5	9.4
30	171	414	275	501	-	309	92	40	45	14	11.5	9.4
31	155	-	237	624	-	275	-	38	-	13.5	11	-
Total	4,696	7,848	14,147	7,352	10,052	7,769	4,023	1,709	1,034	650.5	430.5	319.8
Mean	151	262	456	237	347	251	134	55.1	34.5	21.0	13.9	10.7
Cfsm	3.66	6.34	11.0	5.74	8.40	6.08	3.24	1.33	0.835	0.508	0.337	0.259
In.	4.23	7.07	12.74	6.62	9.05	7.00	3.62	1.54	0.93	0.59	0.39	0.29
Ac-ft	9,310	15,570	28,060	14,580	19,940	15,410	7,980	3,390	2,050	1,290	854	634

Calendar year 1951: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1951-52: Max 1,050 Min 8.3 Mean 164 Cfsm 3.97 In. 54.07 Ac-ft 119,100

Peak discharge (base, 850 cfs).--Dec. 5 (9 p.m.) 975 cfs (6.00 ft); Dec. 21 (9 p.m.) 877 cfs (5.72 ft); Feb. 4 (1 a.m.) 1,120 cfs (6.39 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

East Fork Lewis River near Heisson, Wash.

Location.--Lat 45°50', long. 122°28', in N½ sec. 17, T. 4 N., R. 3 E., on right bank 60 ft downstream from Basket Creek, 1½ miles northeast of Heisson, and 20 miles upstream from mouth.

Drainage area.--125 sq mi.

Records available.--September 1929 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 366.8 ft above mean sea level (from river-profile surveys).

Average discharge.--23 years, 730 cfs.

Extremes.--Maximum discharge during year, 7,380 cfs Feb. 4 (gage height, 8.68 ft); minimum, 34 cfs Sept. 23-25 (gage height, 0.13 ft).
1929-52: Maximum discharge, 15,600 cfs Dec. 22, 1933 (gage height, 12.3 ft), from rating curve extended above 12,000 cfs; minimum, 29 cfs Nov. 3, 1935 (gage height, 0.04 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 23-27)

0.1	32	2.0	371
.3	47	3.0	763
.5	66	4.0	1,340
.8	102	5.0	2,160
1.1	149	6.0	3,240
1.5	233	8.0	6,170

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,280	458	4,150	650	3,800	547	1,100	836	271	423	75	48
2	2,400	427	2,540	587	3,420	502	1,000	722	256	332	76	43
3	1,820	524	*2,960	547	3,830	536	1,100	629	253	281	69	44
4	1,050	547	3,560	*509	6,170	604	1,200	563	*258	248	64	43
5	625	465	3,900	490	3,410	595	1,600	524	253	224	63	44
6	448	430	2,510	448	2,280	638	1,400	498	240	199	68	54
7	341	400	1,810	430	*1,740	587	1,200	487	222	174	72	57
8	306	387	1,400	417	1,400	571	1,000	642	210	160	75	72
9	*238	420	1,120	600	1,190	768	850	595	208	*149	73	87
10	210	726	943	712	1,080	1,530	750	591	206	144	65	61
11	253	1,800	840	625	1,160	1,260	700	625	222	139	61	52
12	420	2,860	777	547	1,070	1,010	700	563	222	134	57	62
13	765	2,910	708	502	890	905	750	575	186	129	56	61
14	1,530	2,340	633	490	801	836	850	616	199	118	*60	49
15	1,570	1,640	676	451	740	749	800	563	222	112	62	43
16	1,280	1,210	1,030	417	672	708	750	539	192	110	65	43
17	910	992	987	384	625	722	800	579	182	109	61	44
18	740	836	2,050	400	575	782	950	547	166	108	59	44
19	1,230	745	1,760	410	555	*726	1,200	513	160	106	59	42
20	2,630	655	1,320	505	509	668	1,000	505	168	103	57	41
21	2,110	575	2,120	451	468	638	700	612	217	103	55	38
22	2,940	520	3,440	427	441	625	600	509	224	101	53	36
23	5,560	476	2,140	458	430	1,500	*595	465	176	97	65	34
24	3,100	437	1,580	616	417	2,200	633	441	166	101	62	34
25	1,950	476	1,210	676	472	2,000	731	420	170	93	78	36
26	1,370	1,120	998	816	600	1,800	722	387	160	88	70	39
27	1,080	1,130	880	1,090	625	1,500	816	368	164	84	61	41
28	840	1,410	806	1,000	591	1,350	987	365	182	81	57	40
29	722	1,630	1,090	970	595	1,200	731	350	377	78	52	39
30	608	2,270	885	3,220	-	1,100	782	304	608	77	53	39
31	528	-	749	3,380	-	1,000	-	287	-	75	51	-
Total	40,854	30,816	51,572	23,225	40,556	30,157	26,997	16,220	6,740	4,480	1,954	1,410
Mean	1,318	1,027	1,664	749	1,398	973	900	523	225	145	63.0	47.0
Cfsm	10.5	8.22	13.3	5.99	11.2	7.78	7.20	4.18	1.80	1.16	0.504	0.376
In.	12.15	9.17	15.34	6.91	12.07	8.97	8.03	4.83	2.01	1.33	0.58	0.42
Ac-ft	81,030	61,120	102,300	46,070	80,440	59,820	53,550	32,170	13,370	8,890	3,880	2,800

Calendar year 1951: Max 5,560 Min 32 Mean 849 Cfsm 6.79 In. 92.21 Ac-ft 614,800
Water year 1951-52: Max 6,170 Min 34 Mean 751 Cfsm 6.01 In. 81.81 Ac-ft 545,400

Peak discharge (base, 6,100 cfs).--Oct. 23 (7:30 a.m.) 6,940 cfs (8.44 ft); Feb. 4 (5:30 a.m.) 7,380 cfs (8.68 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 23 to Apr. 22; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Kalama River below Italian Creek, near Kalama, Wash.

Location.--Lat 46°02'30", long. 122°49'00", in NE¼SW¼ sec. 33, T. 7 N., R. 1 W., on right bank 2½ miles northeast of Kalama, 3 miles (revised) upstream from mouth, and 5 miles downstream from Italian Creek.

Drainage area.--201 sq mi.

Records available.--September 1946 to September 1952.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is about 20 ft (from topographic map).

Average discharge.--6 years, 1,267 cfs.

Extremes.--Maximum discharge during year, 9,140 cfs Feb. 4 (gage height, 10.40 ft), from rating curve extended above 6,700 cfs by logarithmic plotting; minimum not determined, occurred sometime during period of doubtful gage-height record Sept. 15-30.
1946-52: Maximum discharge observed, 14,400 cfs Dec. 13, 1946 (gage height, 13.40 ft), from rating curve extended above 6,700 cfs by logarithmic plotting; minimum observed, 186 cfs Sept. 13, 1951 (gage height, 1.76 ft).

Remarks.--Records good except those for period of doubtful gage-height record, which are fair. No known diversion or regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	180	5.0	2,310
2.0	330	6.0	3,250
2.5	575	7.0	4,350
3.0	860	8.0	5,600
4.0	1,520	10.0	8,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,350	740	5,340	926	4,650	920	1,490	1,470	696	542	298	258
2	4,870	702	3,800	866	4,290	848	1,580	1,330	696	510	298	250
3	3,810	788	*4,280	856	4,450	980	1,490	1,190	707	490	290	250
4	1,830	758	5,800	824	7,980	980	1,530	1,080	729	480	290	243
5	1,230	690	6,170	902	4,990	1,020	1,650	908	752	460	282	243
6	908	652	3,990	*788	3,280	1,150	1,980	872	*740	440	282	243
7	712	630	2,640	770	*2,630	1,060	1,850	854	674	420	282	250
8	*636	624	2,290	782	2,240	980	1,540	896	680	420	282	258
9	548	608	1,770	1,100	2,000	1,100	1,390	956	680	411	298	290
10	515	1,160	1,540	1,230	1,880	1,660	1,290	1,020	646	402	282	258
11	510	2,470	1,430	1,130	1,880	1,580	1,180	1,160	630	393	274	243
12	841	3,780	1,390	998	1,840	1,500	1,180	1,180	630	384	274	250
13	685	3,330	1,340	896	1,670	1,480	1,260	1,230	570	375	274	250
14	1,280	2,600	1,230	884	1,530	1,430	1,380	1,240	558	366	274	243
15	1,320	2,010	1,160	812	1,420	1,360	1,340	1,140	570	357	274	230
16	1,540	1,610	1,250	758	1,330	1,210	1,270	1,170	575	357	266	220
17	1,250	1,400	1,170	712	1,230	1,160	1,340	1,300	553	357	258	220
18	1,200	1,280	2,430	696	1,160	1,160	1,530	1,370	558	348	258	220
19	1,800	1,140	2,120	770	1,110	1,160	1,650	1,300	564	339	258	220
20	2,890	1,010	1,680	908	1,020	1,000	1,460	1,330	564	339	258	220
21	2,470	872	1,900	836	974	*938	*1,190	1,360	564	*339	*258	220
22	2,620	818	2,890	806	866	878	1,200	1,190	526	330	258	210
23	5,500	764	2,290	806	818	890	1,160	1,100	500	330	298	200
24	3,800	729	1,880	1,050	800	2,120	1,180	1,080	490	330	274	210
25	2,520	836	1,620	1,090	866	2,360	1,350	1,060	480	322	298	210
26	1,840	2,000	1,340	1,110	1,050	2,270	1,410	968	470	314	348	210
27	1,460	2,040	1,300	1,290	1,020	2,030	1,440	968	490	314	282	210
28	1,210	2,680	1,240	1,320	1,000	1,920	1,590	1,060	520	306	274	210
29	1,080	2,740	1,340	1,380	998	1,720	1,530	902	500	306	266	210
30	914	2,720	1,190	3,060	-	1,650	1,460	800	586	306	266	200
31	812	-	1,060	4,150	-	1,570	-	740	-	298	258	-
Total	53,751	44,181	70,870	34,486	60,972	42,034	42,890	34,204	17,898	11,685	8,632	6,949
Mean	1,734	1,473	2,286	1,112	2,102	1,356	1,430	1,103	597	377	278	232
Cfsm	8.63	7.33	11.4	5.53	10.5	6.75	7.11	5.49	2.97	1.88	1.38	1.15
In.	9.95	8.17	13.11	6.38	11.28	7.78	7.94	6.33	3.31	2.16	1.60	1.29
Ac-ft	106,600	87,630	140,600	68,400	120,900	83,370	85,070	67,840	35,500	23,180	17,120	13,780

Calendar year 1951: Max 8,050 Min 189 Mean 1,284 Cfsm 6.39 In. 86.71 Ac-ft 929,500
Water year 1951-52: Max 7,980 Min 200 Mean 1,171 Cfsm 5.83 In. 79.30 Ac-ft 850,000

Peak discharge (base, 6,000 cfs).--Oct. 2 (time unknown) 6,410 cfs (8.59 ft); Oct. 23 (8 a.m.) 6,590 cfs (8.72 ft); Dec. 1 (time unknown) 6,640 cfs (8.76 ft); Dec. 4 (7 p.m.) 7,400 cfs (9.27 ft); Feb. 4 (time unknown) 9,140 cfs (10.40 ft).

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Sept. 15-30; discharge estimated on basis of records for stations on nearby streams.

Lake Creek near Packwood, Wash.

Location.--Lat 46°35'55", long. 121°34'15", in sec. 21, T. 13 N., R. 10 E., on left bank 500 ft downstream from outlet of Packwood Lake and 6 miles east of Packwood.

Drainage area.--18.8 sq mi.

Records available.--September 1911 to September 1924, September 1930 to October 1942, October 1949 to September 1952. Published as "at outlet of Packwood Lake, near Lewis" 1911-24.

Gage.--Water-stage recorder. Altitude of gage is 2,850 ft, revised (from topographic map). Prior to Aug. 3, 1918, staff gages at several sites at or within 100 ft of present site at various datums. Aug. 3, 1918, to Sept. 30, 1924, water-stage recorder at site 110 ft upstream at different datum.

Average discharge.--28 years, 100 cfs.

Extremes.--Maximum discharge during year, 276 cfs May 20 (gage height, 3.29 ft); minimum, 30 cfs Mar. 22 (gage height, 1.71 ft).
1911-24, 1930-42, 1949-52: Maximum discharge, 1,400 cfs Dec. 22, 1933 (gage height, 5.9 ft); minimum, 19 cfs Dec. 1, 1936, Oct. 9, 1941.
Maximum stage recorded, 6.0 ft Dec. 18, 1917, datum then in use (discharge not determined).

Remarks.--Records good for October to February, fair for March to September. No diversions. Natural regulation in Packwood Lake.

Revisions (water years).--W 394: 1912. W 739: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.7	31	2.5	120
1.8	38	2.8	174
2.0	55	3.1	237
2.2	76	3.4	312

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	*86	163	44	53	40	57	151	166	235	86	41
2	161	79	186	42	56	39	56	137	163	209	82	40
3	235	85	168	40	67	38	53	122	174	194	82	39
4	188	104	146	39	98	39	50	110	209	196	85	38
5	134	95	130	39	107	38	50	102	259	184	86	38
6	100	86	117	39	95	37	56	*96	259	166	82	38
7	80	80	100	39	82	36	63	90	233	151	77	40
8	68	75	86	40	74	34	66	89	213	155	77	40
9	62	73	79	40	67	36	66	90	215	170	82	41
10	57	77	73	42	63	40	64	101	217	188	84	40
11	55	85	70	41	63	40	63	123	192	194	82	*39
12	53	110	67	40	63	37	62	141	159	194	81	40
13	65	118	65	38	62	36	63	168	137	190	77	39
14	84	110	63	37	59	34	65	184	123	182	73	38
15	100	96	62	37	56	*34	67	172	122	174	69	37
16	92	84	65	36	53	33	66	170	114	166	64	37
17	82	75	63	34	52	33	67	194	117	150	59	36
18	76	69	66	33	50	33	72	226	127	132	55	36
19	94	66	67	34	*48	33	85	249	*142	123	50	36
20	163	63	63	36	45	33	100	271	159	115	48	36
21	164	61	62	36	44	32	104	261	180	106	47	35
22	146	59	68	34	42	31	107	224	176	98	47	35
23	180	57	65	36	40	36	106	202	153	96	55	35
24	170	55	60	38	38	50	109	200	137	96	55	34
25	144	56	57	37	40	61	128	211	130	94	53	34
26	120	68	54	35	42	66	164	217	127	94	50	34
27	104	77	51	35	41	65	190	224	139	94	48	34
28	94	89	*51	34	40	65	207	239	153	92	45	34
29	109	96	55	34	40	66	184	249	163	*89	44	34
30	109	100	52	40	-	67	166	217	219	90	42	34
31	98	-	48	47	-	63	-	186	-	88	41	-
Total	3,493	2,434	2,522	1,176	1,680	1,325	2,756	5,416	5,077	4,505	2,008	1,112
Mean	113	81.1	81.4	37.9	57.9	42.7	91.9	175	169	145	64.8	37.1
Cfsm	6.01	4.31	4.33	2.02	3.08	2.27	4.89	9.31	8.99	7.71	3.45	1.97
In.	6.91	4.81	4.99	2.33	3.32	2.62	5.45	10.71	10.04	8.91	3.97	2.20
Ac-ft	6,930	4,830	5,000	2,330	3,330	2,630	5,470	10,740	10,070	8,940	3,980	2,210

Calendar year 1951: Max 530 Min 40 Mean 108 Cfsm 5.74 In. 77.97 Ac-ft 78,190
Water year 1951-52: Max 271 Min 31 Mean 91.5 Cfsm 4.87 In. 66.26 Ac-ft 66,460

* Discharge measurement made on this day.

Cowlitz River at Packwood, Wash.

Location.--Lat 46°36'40", long. 121°40'45", in SE¼ sec. 16, T. 13 N., R. 9 E., on right bank 100 ft upstream from Forest Service bridge, half a mile upstream from Skate Creek, and half a mile northwest of Packwood.

Drainage area.--287 sq mi.

Records available.--July 1911 to December 1919, September 1929 to September 1952. Published as "at Lewis" 1911-19.

Gage.--Water-stage recorder. Altitude of gage is about 1,040 ft (from topographic map). July 1, 1911, to Dec. 31, 1919, staff gages at sites about 1 mile upstream at different datums. Sept. 30, 1929, to Jan. 2, 1930, staff gage at present site and datum.

Average discharge.--31 years, 1,597 cfs.

Extremes.--Maximum discharge during year, 6,410 cfs June 4 (gage height, 7.62 ft); minimum not determined, probably occurred sometime during period of doubtful gage-height record Sept. 25-30.

1911-19, 1929-52: Maximum discharge, 36,600 cfs Dec. 21, 1933 (gage height, 13.0 ft), from rating curve extended above 12,600 cfs; minimum, 160 cfs Nov. 21, 1929 (gage height, 2.10 ft).

Remarks.--Records good except those for period of shifting control, which are fair, and those for periods of doubtful or no gage-height record, which are poor. No diversion or regulation.

Revisions (water years).--W 884: 1938.

Rating tables, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 3				June 4 to Sept. 30			
3.5	290	5.0	1,620	3.1	300	5.0	1,630
3.8	470	5.5	2,310	3.4	410	5.5	2,310
4.1	695	6.0	3,120	3.7	545	6.0	3,120
4.4	960	6.5	4,020	4.0	725	6.5	4,020
4.7	1,270	7.2	5,440	4.3	950	7.3	5,660
				4.6	1,210		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,400	1,100	5,200	500	2,030	615	1,040	2,480	2,780	2,780	990	490
2	2,280	990	3,650	480	1,990	592	1,010	2,150	3,140	2,420	966	486
3	3,050	2,440	2,800	480	1,880	570	933	1,890	3,740	2,650	950	505
4	2,030	2,380	2,320	480	3,450	548	879	1,750	5,220	2,810	998	477
5	1,320	1,700	2,030	470	2,800	533	*1,120	*1,600	5,590	2,380	982	442
6	1,040	*1,360	1,710	460	2,050	520	2,150	1,520	4,600	1,980	878	430
7	870	1,250	1,440	440	1,670	500	2,340	1,520	3,940	1,910	862	402
8	754	1,170	1,270	430	1,460	490	1,960	1,710	3,790	2,200	910	394
9	679	1,080	1,130	430	1,340	526	1,740	1,880	4,150	2,620	982	390
10	631	1,320	1,040	*430	1,290	592	1,620	2,480	3,850	2,800	990	*374
11	623	1,560	980	420	1,370	578	1,620	3,200	2,750	2,650	918	370
12	608	2,120	960	400	1,320	540	1,520	3,420	2,120	2,560	848	*370
13	1,020	2,200	942	380	1,190	520	1,670	4,250	*1,740	2,400	840	360
14	1,250	1,840	879	370	1,090	500	1,830	3,890	1,610	2,200	767	356
15	1,350	1,520	861	370	990	480	1,760	3,190	1,610	2,030	692	352
16	1,170	1,300	834	360	897	480	1,780	3,650	1,640	1,850	636	356
17	1,040	1,150	798	350	807	480	1,990	4,600	2,020	1,620	636	360
18	1,090	1,040	852	350	729	480	2,760	5,050	2,490	1,460	618	382
19	3,050	960	807	350	671	460	3,490	5,350	2,900	1,390	600	402
20	4,560	897	746	360	623	440	2,750	5,440	2,880	1,310	600	386
21	3,000	843	763	350	*592	430	2,340	4,420	2,650	1,130	594	366
22	2,300	780	843	340	548	420	2,320	3,690	2,240	1,060	624	349
23	3,260	720	763	340	540	450	2,260	3,830	1,960	1,110	636	338
24	2,480	687	695	350	540	798	2,590	4,190	2,080	1,100	584	338
25	1,940	754	655	360	562	1,310	3,630	4,420	2,160	1,050	556	d350
26	1,600	1,290	615	360	655	1,610	4,480	4,120	2,260	1,090	515	d360
27	1,430	1,480	600	370	639	1,630	4,440	4,440	2,600	1,050	500	d360
28	1,420	1,740	592	400	631	1,650	4,270	4,970	2,430	1,030	495	d350
29	1,750	1,830	592	410	639	1,520	3,170	4,360	2,370	*1,010	490	d340
30	1,510	2,070	548	1,460	-	1,360	2,730	3,260	3,240	1,030	477	d330
31	1,290	-	520	2,050	-	1,200	-	2,980	-	998	490	-
Total	51,795	41,571	38,435	15,100	34,993	22,822	68,192	105,700	86,550	55,678	22,624	11,565
Mean	1,671	1,386	1,240	487	1,207	736	2,273	3,410	2,885	1,796	730	386
Cfsm	5.82	4.83	4.32	1.70	4.21	2.56	7.92	11.9	10.1	6.26	2.54	1.34
In.	6.71	5.39	4.98	1.96	4.53	2.96	8.84	13.70	11.22	7.21	2.93	1.50
Ac-ft	102,700	82,450	76,230	29,950	69,410	45,270	135,300	209,700	171,700	110,400	44,870	22,940

Calendar year 1951: Max 10,000 Min 312 Mean 1,676 Cfsm 5.84 In. 79.25 Ac-ft 1,213,000
Water year 1951-52: Max 5,590 Min 330 Mean 1,516 Cfsm 5.28 In. 71.93 Ac-ft 1,101,000

Peak discharge (base, 8,000 cfs).--No peak above base.
* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on basis of records for nearby stations.
Note.--No gage-height record Dec. 31 to Jan. 29, Mar. 6-8, 13-23; discharge estimated on basis of 1 discharge measurement and records for nearby stations. Shifting-control method used Oct. 1-25.

Johnson Creek below Glacier Creek, near Packwood, Wash.

Location.--Lat 46°32'30", long. 121°37'15", in sec. 12, T. 12 N., R. 9 E., near right bank 4½ miles upstream from mouth and 5 miles southeast of Packwood.

Drainage area.--42.8 sq mi.

Records available.--July 1951 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,980 ft (from topographic map).

Extremes.--Maximum discharge during period July 1951 to September 1952, 754 cfs Nov. 30 (gage height, 5.48 ft), from rating curve extended above 400 cfs; minimum, 28 cfs Sept. 30, 1952 (gage height, 3.00 ft).

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

Discharge, in cubic feet per second, 1951-52

1951

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	69	41	9	-	59	39	17	-	49	34	25	-	43	41
2	-	68	40	10	-	57	38	18	-	48	34	26	*78	42	36
3	-	67	39	11	-	56	38	19	-	48	33	27	73	42	*34
4	-	65	39	12	-	55	37	20	-	47	33	28	74	46	35
5	-	64	38	13	-	53	*36	21	-	46	33	29	72	44	38
6	-	63	38	14	-	*52	36	22	-	45	32	30	72	43	67
7	-	61	42	15	-	51	35	23	-	44	32	31	71	*42	-
8	-	60	42	16	-	50	35	24	-	44	32				
Total													-	1,623	1,127
Mean													-	52.4	37.6
Cfsm													-	1.22	0.879
In.													-	1.41	0.98
Ac-ft													-	3,220	2,240

* Discharge measurement made on this day.
Note.--No gage-height record July 31 to Aug. 13, Aug. 15-22; discharge estimated on basis of records for stations on nearby streams.

1951-52

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	150	602	79	148	84	130	310	306	243	70	40
2	*148	140	415	78	152	82	120	270	318	218	68	39
3	243	163	322	79	155	80	115	250	350	218	67	39
4	144	178	272	76	354	79	115	225	402	216	66	38
5	107	*161	235	75	281	78	*161	210	430	194	65	38
6	90	152	200	74	227	76	257	200	386	176	64	38
7	81	142	184	72	180	75	269	*198	350	169	63	38
8	74	137	167	70	165	72	240	208	330	172	63	38
9	67	131	157	69	155	72	210	213	346	174	62	38
10	63	138	146	68	157	78	195	257	318	172	61	37
11	61	157	140	66	165	80	180	330	257	163	59	37
12	65	194	137	64	159	78	170	358	224	161	57	*36
13	79	191	133	63	148	76	180	425	197	150	56	36
14	106	167	128	*63	137	74	200	394	189	140	55	35
15	116	148	126	61	129	72	190	350	189	133	55	35
16	116	135	121	60	122	70	200	378	180	126	53	34
17	101	126	117	60	114	70	250	470	180	116	51	33
18	100	119	117	59	107	69	320	500	191	109	51	33
19	159	116	109	58	101	66	370	515	213	104	50	32
20	338	114	106	58	*96	62	350	520	*229	100	48	32
21	263	109	116	57	92	58	270	475	227	94	47	32
22	235	104	117	56	90	56	260	425	203	91	47	31
23	*370	101	109	56	86	58	255	420	187	90	48	31
24	*290	96	102	57	85	90	250	435	178	86	*46	31
25	227	104	98	57	86	120	300	470	176	84	46	30
26	189	196	95	56	88	145	450	455	176	81	45	30
27	174	229	92	58	88	160	470	470	189	79	43	30
28	172	257	91	60	87	160	500	490	191	*78	42	30
29	200	240	88	63	86	155	410	450	205	76	42	30
30	182	394	86	102	-	150	350	370	260	75	42	29
31	167	-	84	121	-	140	-	330	-	73	40	-
Total	4,795	4,789	5,012	2,095	4,040	2,785	7,737	11,371	7,577	4,161	1,672	1,030
Mean	155	160	162	67.6	139	89.8	258	367	253	134	53.9	34.3
Cfsm	3.62	3.74	3.79	1.58	3.25	2.10	6.03	8.57	5.91	3.13	1.26	0.801
In.	4.17	4.16	4.36	1.82	3.51	2.42	6.72	9.88	6.58	3.62	1.45	0.89
Ac-ft	9,510	9,500	9,940	4,160	8,010	5,520	15,350	22,550	15,030	8,250	3,320	2,040

Calendar year 1951: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1951-52: Max 602 Min 29 Mean 156 Cfsm 3.64 In. 49.58 Ac-ft 113,200

Peak discharge (base, 540 cfs).--Nov. 30 (12 p.m.) 754 cfs (5.48 ft); probably Apr. 28 (time and discharge unknown); May 18 (11 to 12 p.m.) 550 cfs (5.18 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 8 to Apr. 4, Apr. 8 to May 6; discharge estimated on basis of weather records and records for stations on nearby streams.

Niggerhead Creek near Randle, Wash.

Location.--Lat 46°25'45", long. 121°49'45", in SE¼ sec. 20, T. 11 N., R. 8 E., on left bank 1 mile upstream from mouth and 8½ miles southeast (revised) of Randle.

Drainage area.--66.3 sq mi.

Records available.--June 1950 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,080 cfs Dec. 1 (gage height, 5.28 ft); minimum, 29 cfs Sept. 25, 27-30 (gage height, 0.64 ft).
1950-52: Maximum discharge, that of Dec. 1, 1951; minimum, that of Sept. 25, 27-30, 1952.

Remarks.--Records good. No diversion or regulation.

Revisions.--W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	26	2.0	297
.8	45	2.5	490
1.0	71	3.0	770
1.3	120	4.0	1,620
1.6	185	5.0	2,740

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	190	2,430	120	714	164	297	640	397	213	61	39
2	*386	178	1,360	120	714	155	282	555	405	190	61	39
3	351	176	954	120	607	153	*260	486	445	188	60	38
4	213	164	721	120	1,320	147	272	429	490	192	58	37
5	147	151	585	115	1,070	142	425	401	512	180	57	37
6	115	142	458	102	728	136	682	369	481	160	56	37
7	96	*136	373	100	575	132	676	*362	433	149	55	38
8	83	128	323	*97	486	130	555	385	413	144	55	38
9	74	126	288	100	441	134	490	417	421	153	56	*38
10	68	202	263	97	437	151	458	512	397	155	53	37
11	70	307	252	94	463	142	450	664	314	149	52	36
12	67	454	249	91	421	138	425	682	*263	140	51	34
13	70	437	237	89	365	134	458	778	229	132	50	34
14	99	362	221	88	334	130	490	728	218	124	50	34
15	120	300	210	86	304	126	472	629	210	118	49	33
16	144	260	202	83	278	124	481	682	202	111	49	33
17	128	232	192	82	252	126	535	850	205	102	47	32
18	134	210	221	80	*232	128	742	922	226	97	47	32
19	263	200	195	78	218	122	922	922	252	92	46	32
20	618	198	183	82	205	118	700	810	257	89	45	31
21	458	185	190	78	192	115	590	670	243	84	44	31
22	409	174	198	77	180	113	560	590	224	83	45	30
23	914	162	183	76	174	120	540	607	198	80	50	30
24	652	155	167	78	167	226	590	640	185	78	45	30
25	476	192	160	78	171	409	786	682	183	76	49	30
26	369	652	151	80	178	499	970	652	185	72	46	30
27	310	906	147	88	176	494	954	664	195	70	44	29
28	275	1,150	142	91	174	486	970	694	190	68	42	29
29	263	962	140	100	171	425	728	590	202	67	41	29
30	240	1,320	130	538	-	369	676	486	224	*84	41	29
31	213	-	124	602	-	330	-	437	-	63	40	-
Total	7,905	10,411	11,649	3,830	11,747	6,318	17,436	18,935	8,799	3,683	1,545	1,006
Mean	255	347	376	124	405	204	581	611	293	119	49.8	33.5
Cfsm	3.85	5.23	5.67	1.87	6.11	3.08	8.76	9.22	4.42	1.79	0.751	0.505
In.	4.43	5.84	6.53	2.15	6.59	3.54	9.78	10.62	4.94	2.07	0.87	0.56
Ac-ft	15,680	20,650	23,110	7,600	23,300	12,530	34,580	37,560	17,450	7,310	3,060	2,000

Calendar year 1951: Max 2,610 Min 31 Mean 300 Cfsm 4.52 In. 61.35 Ac-ft 217,000
Water year 1951-52: Max 2,430 Min 29 Mean 282 Cfsm 4.25 In. 57.92 Ac-ft 204,800

Peak discharge (base, 1,600 cfs).--Dec. 1 (3:30 a.m.) 3,080 cfs (5.28 ft).
* Discharge measurement made on this day.

Cispus River near Randle, Wash.

Location.--Lat 46°26'50", long. 121°51'35", in NW¼ sec. 18, T. 11 N., R. 8 E., (unsurveyed), on left bank 60 ft upstream from bridge to Tower Rock ranger station, 4 miles downstream from North Fork, and 8 miles southeast of Randle.

Drainage area.--323 sq mi.

Records available.--October 1910 to February 1912, September 1929 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,220 ft (from topographic map). Prior to Feb. 29, 1912, staff gage at site a quarter of a mile upstream. Sept. 28 to Oct. 31, 1929, staff gage and Nov. 1, 1929, to Nov. 26, 1949, water-stage recorder, at site 450 ft upstream at different datums.

Average discharge.--24 years (1910-11, 1929-52), 1,295 cfs.

Extremes.--Maximum discharge during year, 7,440 cfs Dec. 1 (gage height, 8.28 ft); minimum, 311 cfs Sept. 30 (gage height, 3.11 ft).
1910-12, 1929-52: Maximum discharge, 20,000 cfs Dec. 22, 1933 (gage height, 12.7 ft, site and datum then in use), from rating curve extended above 8,000 cfs; minimum, 183 cfs Dec. 30, 1936; minimum gage height, 2.55 ft Oct. 25, 1942 (site and datum then in use).

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 794: 1934.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 18		May 19 to Sept. 30			
3.3	450	3.1	305	4.6	1,510
3.6	635	3.4	490	5.0	1,960
3.9	840	3.7	690	6.0	3,280
		4.0	920	7.0	4,930
Note.--Same as following table above 3.9 ft.		4.3	1,200	8.0	6,850

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	728	1,020	6,440	674	1,900	721	1,220	2,450	2,130	1,480	607	413
2	*1,430	965	4,120	661	1,800	707	1,160	2,190	2,150	1,340	574	413
3	1,560	1,000	3,180	661	1,700	687	*1,100	2,000	2,300	1,320	588	419
4	1,060	1,090	2,680	661	3,000	674	1,100	1,840	2,480	1,340	600	413
5	791	974	2,380	654	2,300	661	1,420	1,740	2,680	1,250	600	407
6	680	*920	2,020	642	1,900	648	2,030	1,660	2,580	1,130	568	401
7	616	880	1,750	628	1,600	628	2,150	1,630	2,400	1,080	562	389
8	564	856	1,600	*609	1,500	622	1,950	*1,740	2,270	1,090	581	395
9	534	826	1,440	616	1,400	642	1,800	1,810	2,300	1,130	600	*389
10	510	1,020	1,340	602	1,300	674	1,720	2,150	2,240	1,150	594	371
11	498	1,310	1,280	590	1,400	648	1,700	2,630	1,880	1,140	562	371
12	498	1,660	1,240	570	1,300	635	1,650	2,710	*1,620	1,110	536	377
13	528	1,630	1,180	552	1,200	628	1,760	3,130	1,430	1,040	529	365
14	648	1,430	1,110	558	1,100	609	1,860	3,030	1,360	983	536	359
15	735	1,270	1,070	552	1,000	602	1,850	2,710	1,370	956	522	359
16	756	1,150	1,050	540	950	596	1,850	2,850	1,300	904	503	359
17	700	1,060	1,000	528	900	602	1,980	3,340	1,300	840	484	353
18	694	1,000	1,080	530	850	602	2,440	3,550	1,390	792	477	371
19	1,080	956	1,000	530	800	583	3,000	3,630	1,490	768	464	377
20	2,220	929	956	540	760	570	2,590	3,560	1,540	760	464	377
21	1,850	880	974	520	730	564	2,330	3,280	1,540	732	451	365
22	1,650	840	992	510	700	546	2,270	2,920	1,430	697	477	353
23	2,770	812	929	510	700	596	2,220	2,880	1,310	711	503	353
24	2,330	791	864	520	700	856	2,380	2,930	1,270	711	470	365
25	1,860	856	848	540	*770	1,360	2,950	3,090	1,240	669	451	377
26	1,580	1,850	819	540	763	1,660	3,500	3,020	1,230	662	432	377
27	1,380	2,280	805	560	756	1,680	3,560	3,030	1,280	655	419	353
28	1,270	2,810	791	600	742	1,700	3,490	3,130	1,300	648	419	335
29	1,300	2,620	805	620	742	1,580	2,880	2,930	1,350	634	425	335
30	1,230	3,300	756	1,600	-	1,460	2,640	2,490	1,560	620	413	323
31	1,120	-	728	2,000	-	1,320	-	2,280	-	*620	407	-
Total	35,170	38,985	47,227	20,418	35,263	26,061	64,550	82,330	51,720	28,962	15,818	11,214
Mean	1,135	1,300	1,523	659	1,216	841	2,152	2,656	1,724	934	510	374
Cfsm	3.51	4.02	4.72	2.04	3.76	2.60	6.66	8.22	5.34	2.89	1.58	1.16
In.	4.05	4.49	5.44	2.35	4.06	3.00	7.43	9.48	5.96	3.33	1.82	1.29
Ac-ft	69,760	77,330	93,670	40,500	69,940	51,690	128,000	163,300	102,600	57,450	31,370	22,240

Calendar year 1951: Max 8,130 Min 362 Mean 1,433 Cfsm 4.44 In. 60.22 Ac-ft 1,037,000
Water year 1951-52: Max 6,440 Min 323 Mean 1,251 Cfsm 3.87 In. 52.70 Ac-ft 907,800

Peak discharge (base, 3,400 cfs).--Dec. 1 (5:30 a.m.) 7,440 cfs (8.28 ft); probably Feb. 4 (time unknown) 3,500 cfs (6.15 ft); Apr. 27 (11:30 p.m.) 3,720 cfs (6.29 ft); May 19 (3 a.m.) 3,740 cfs (6.30 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 18 to Feb. 24; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Cowlitz River near Kosmos, Wash.

Location.--Lat 46°28'00", long. 122°07'20", in SE¼ sec. 1, T. 11 N., R. 5 E., on right bank half a mile downstream from Tumwater Creek, 1½ miles downstream from Cispus River, and 4 miles southeast of Kosmos.

Drainage area.--1,042 sq mi.

Records available.--November 1947 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 759.29 ft above mean sea level (levels by city of Tacoma). Prior to Dec. 3, 1948, staff gage at site half a mile upstream at different datum.

Extremes.--Maximum discharge during year, 18,000 cfs Dec. 1 (gage height, 12.54 ft); minimum, 954 cfs Sept. 30 (gage height, 3.19 ft).
1947-52: Maximum discharge, 33,800 cfs Feb. 11, 1951 (gage height, 16.60 ft); minimum, that of Sept. 30, 1952.

Remarks.--Records excellent. No diversion or regulation.

Revisions.--W 1218: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.2	960	6.0	3,460
3.6	1,230	7.0	4,780
4.0	1,530	8.0	6,350
4.5	1,930	10.0	10,600
5.0	2,380	12.0	16,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,920	3,650	16,000	2,430	6,320	2,650	4,280	7,940	6,740	5,700	2,130	1,230
2	4,160	3,360	14,400	2,280	6,810	2,580	4,100	7,040	6,690	5,050	2,060	1,240
3	*5,890	3,410	11,000	2,250	6,470	2,530	3,950	6,370	7,400	4,860	2,050	1,260
4	4,880	5,230	9,280	2,240	10,700	2,530	*3,820	5,860	8,310	5,140	*2,060	1,300
5	3,410	4,220	8,460	2,190	11,900	2,430	4,350	5,480	10,300	4,880	2,100	1,240
6	2,730	3,700	7,220	2,150	9,220	2,340	6,130	5,160	9,600	4,300	2,010	1,220
7	2,380	3,400	6,210	*2,080	7,480	2,260	7,350	4,980	8,370	3,950	1,920	1,190
8	2,130	*3,200	5,520	2,050	6,500	2,220	6,830	*5,140	7,660	3,960	1,920	1,140
9	1,950	3,080	4,980	2,060	5,890	2,280	6,130	5,350	7,820	4,250	2,030	1,160
10	1,830	3,390	4,600	2,050	5,570	2,590	5,720	6,080	7,980	4,570	2,060	*1,100
11	1,750	4,160	4,320	1,980	5,590	2,580	5,590	7,620	6,660	4,540	2,000	1,060
12	1,710	5,800	4,170	1,900	5,520	2,480	5,380	8,420	5,560	4,390	1,880	1,060
13	1,800	6,740	3,970	1,840	5,110	2,410	5,540	9,650	*4,780	4,230	1,850	1,040
14	2,340	6,250	3,760	1,820	4,750	2,340	5,990	10,100	4,370	3,970	1,820	1,010
15	3,000	5,400	3,650	1,790	4,430	2,250	6,020	8,750	4,280	3,780	1,750	1,010
16	2,960	4,700	3,630	1,730	4,130	2,210	5,960	8,620	4,160	3,590	1,640	1,020
17	2,730	4,210	3,480	1,680	3,830	2,210	6,150	10,600	4,230	3,280	1,560	1,030
18	2,580	3,860	3,650	1,670	3,580	2,220	7,330	11,700	4,710	3,040	1,530	1,070
19	3,280	3,600	3,570	1,670	3,380	2,160	9,820	12,200	5,230	2,870	1,470	1,160
20	8,730	3,450	3,350	1,710	3,200	2,110	8,950	12,300	5,540	2,770	1,430	1,190
21	7,800	3,240	3,360	1,660	3,040	2,050	7,640	11,500	5,430	2,620	1,420	1,150
22	6,350	3,080	3,970	1,620	2,890	1,990	7,200	9,820	5,140	2,460	1,450	1,110
23	9,330	2,910	3,780	1,620	2,760	2,040	6,930	9,320	4,560	2,380	1,590	1,080
24	8,810	2,780	3,520	1,670	2,660	2,690	7,040	9,500	4,360	2,440	1,510	1,090
25	6,840	2,760	3,330	1,720	2,660	4,000	8,550	10,200	4,400	2,330	1,440	1,130
26	5,670	4,310	3,120	1,720	*2,790	5,290	11,100	9,850	4,370	2,300	1,360	1,130
27	4,900	5,720	3,010	1,790	2,780	5,460	11,600	9,820	4,680	2,290	1,290	1,110
28	4,490	7,090	2,920	1,890	2,730	5,590	12,100	10,700	4,750	2,240	1,240	1,020
29	4,570	7,420	2,930	1,960	2,710	5,400	10,100	10,500	4,640	2,210	1,250	990
30	4,510	7,460	2,770	3,340	-	5,110	8,550	8,550	5,440	2,200	1,220	978
31	4,060	-	2,610	6,150	-	4,700	-	7,400	-	2,160	1,210	-
Total	130,490	131,580	160,540	64,710	145,400	91,700	210,200	266,520	178,160	108,750	52,250	33,518
Mean	4,209	4,386	5,179	2,087	5,014	2,958	7,007	8,597	5,939	3,508	1,685	1,117
Cfsm	4.04	4.21	4.97	2.00	4.81	2.84	6.72	8.25	5.70	3.37	1.62	1.07
In.	4.66	4.70	5.73	2.31	5.19	3.27	7.50	9.51	6.36	3.88	1.86	1.20
Ac-ft	258,800	261,000	318,400	128,400	288,400	181,900	416,900	528,600	353,400	215,700	103,600	66,480

Calendar year 1951: Max 32,300 Min 1,000 Mean 4,957 Cfsm 4.76 In. 64.59 Ac-ft 3,589,000
Water year 1951-52: Max 16,000 Min 978 Mean 4,300 Cfsm 4.13 In. 56.17 Ac-ft 3,122,000

Peak discharge (base, 16,000 cfs).--Dec. 1 (4 p.m.) 18,000 cfs (12.54 ft).
* Discharge measurement made on this day.

Rainy Creek near Kosmos, Wash.

Location.--Lat 46°30'30", long. 122°09'15", at west line sec. 23, T. 12 N., R. 5 E., on left bank 25 ft upstream from highway bridge and 2 miles northeast of Kosmos.

Drainage area.--17.5 sq mi.

Records available.--June 1950 to September 1952.

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

Extremes.--Maximum discharge during year, 390 cfs Feb. 4 (gage height, 4.04 ft); minimum, 0.5 cfs Sept. 23; minimum gage height, 1.06 ft Sept. 23, 28, 29.
1950-52: Maximum discharge, 525 cfs Feb. 11, 1951 (gage height, 4.49 ft); minimum, 0.3 cfs Sept. 14-24, 1951; minimum gage height, that of Sept. 23, 28, 29, 1952.

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3		Feb. 4 to Sept. 30			
1.5	8.8	1.07	0.6	2.3	86
1.8	27	1.2	2.9	2.6	124
2.1	50	1.4	10.5	3.0	184
2.5	92	1.6	22	3.5	271
3.0	165	1.8	36	4.0	380
3.5	260	2.0	54		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14.5	a31	130	66	147	53	66	60	27	19	4.4	1.4
2	36	a29	129	64	146	50	75	54	25	16.5	4.4	1.4
3	64	a40	135	a62	154	50	72	51	25	15.5	4.4	1.2
4	36	a39	152	a60	345	54	*71	48	25	14.5	*3.8	1.1
5	23	a36	177	a58	280	51	80	44	25	14	3.8	1.1
6	17	a34	156	a56	214	49	98	43	24	13.5	3.8	1.2
7	13.5	*32	135	*53	174	47	94	41	22	12.5	3.8	1.6
8	12	30	116	51	150	45	83	42	21	11.5	3.8	1.8
9	10.5	30	102	53	137	50	73	*43	20	11.5	3.5	*2.0
10	9.3	35	92	52	127	66	70	46	20	10.5	3.2	1.8
11	8.8	48	87	48	128	66	67	50	21	9.8	2.9	1.4
12	10.5	104	82	47	121	62	64	50	19.5	9.4	2.9	1.6
13	16	158	78	45	108	59	67	54	19	9.4	2.6	1.4
14	23	148	72	44	101	55	71	56	18.5	9.0	2.6	1.2
15	26	118	76	42	94	53	68	50	18.5	8.6	2.6	1.1
16	33	93	81	40	88	52	65	49	19	8.2	2.9	1.0
17	26	80	80	40	82	51	67	52	18	8.2	2.3	.8
18	25	69	110	39	75	51	78	53	16.5	7.8	2.3	.7
19	32	63	98	38	71	50	88	52	16	7.4	2.3	.6
20	79	59	90	41	67	48	75	51	16	7.4	2.3	.6
21	81	54	118	39	*64	46	66	51	17.5	7.8	2.0	.6
22	77	50	160	38	60	44	62	45	19	7.4	2.3	.6
23	172	47	140	39	57	50	60	42	16	7.4	3.8	.6
24	126	44	123	50	55	71	61	41	15	7.8	3.2	.6
25	86	45	108	50	58	99	68	40	14.5	7.4	3.5	.6
26	a64	59	97	51	60	99	72	37	14	6.6	3.8	.7
27	a54	62	91	56	57	91	80	36	14	6.2	2.6	.6
28	a45	73	90	57	55	88	88	35	15	5.8	2.3	.6
29	a40	79	88	61	55	84	72	34	16.5	5.4	2.0	.6
30	a36	81	78	110	-	84	64	30	21	5.0	2.0	.6
31	a33	-	71	142	-	79	-	29	-	4.7	1.8	-
Total	1,329.1	1,870	3,342	1,692	3,330	1,897	2,185	1,409	578.5	295.7	93.9	31.1
Mean	42.9	62.3	108	54.6	115	61.2	72.8	45.5	19.3	9.54	3.03	1.04
Cfsm	2.45	3.56	6.17	3.12	6.57	3.50	4.16	2.60	1.10	0.545	0.173	0.059
In.	2.82	3.97	7.10	3.60	7.08	4.03	4.64	2.99	1.23	0.63	0.20	0.07
Ac-ft	2,640	3,710	6,630	3,360	6,600	3,760	4,330	2,790	1,150	587	186	62

Calendar year 1951: Max 480 Min 0.3 Mean 63.9 Cfsm 3.65 In. 49.60 Ac-ft 46,300
Water year 1951-52: Max 345 Min 0.6 Mean 49.3 Cfsm 2.82 In. 38.36 Ac-ft 35,800

Peak discharge (base, 300 cfs).--Feb. 4 (11 a.m., 1 p.m.) 390 cfs (4.04 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.
Note.--Shifting-control method used Oct. 1-2, Nov. 12 to Jan. 2, Jan. 7 to Feb. 3, Sept. 26-30.

Cowlitz River at Mossyrock, Wash.

Location.--Lat 46°33'00", long. 122°29'30", in SE¼ sec. 1, T. 12 N., R. 2 E., on left bank 200 ft upstream from Harmony Bridge and 1 mile north of Mossyrock.

Drainage area.--1,170 sq mi.

Records available.--January 1912 to September 1917 (incomplete), March 1926 to September 1935, August 1946 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 357.31 ft above mean sea level (levels by city of Tacoma). Prior to Sept. 18, 1913, chain gage on Harmony Bridge 200 ft downstream at different datum. Sept. 18, 1913, to Sept. 30, 1917, March 1926 to Dec. 10, 1933, staff gage within 100 ft of present site at different datum. Dec. 11, 1933, to Mar. 8, 1934, stage determined from reference marks on bridge and staff gage readings at various sites just upstream from bridge at different datums. Mar. 9, 1934, to September 1935, wire-weight gage on bridge at different datum.

Average discharge.--20 years, 5,333 cfs.

Extremes.--Maximum discharge during year, 20,800 cfs Dec. 1 (gage height, 14.55 ft); minimum, 960 cfs Sept. 30 (gage height, 3.58 ft).
1912-17, 1926-35, 1946-52: Maximum discharge observed, 81,000 cfs Dec. 22, 1933 (gage height, 36.55 ft, site and datum then in use); minimum, 630 cfs Nov. 21-24, Dec. 3, 5-8, 1929.

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

Revisions (water years).--W 769: 1933.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.5	930	6.0	4,100
4.0	1,450	8.0	7,510
4.5	2,030	10.0	11,400
5.0	2,670	14.0	19,600

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,300	4,060	16,900	2,750	6,920	2,840	4,700	9,000	7,150	5,750	2,200	1,260
2	3,890	3,720	17,800	2,600	7,780	2,740	4,400	8,200	6,880	5,120	2,160	1,280
3	5,800	3,770	13,400	2,500	7,350	2,680	4,200	7,400	7,440	4,840	2,130	1,280
4	5,540	5,290	11,300	2,500	12,400	*2,710	4,000	6,800	8,360	5,000	2,100	1,330
5	3,880	4,630	10,600	2,460	*15,300	2,630	5,000	6,200	10,700	4,910	2,140	1,310
6	3,070	4,120	8,880	2,420	11,800	2,510	6,200	5,800	10,400	4,410	2,110	1,250
7	2,670	3,770	7,310	2,340	9,240	2,450	8,000	5,400	9,010	4,010	2,030	1,230
8	2,340	3,560	6,290	2,280	7,720	2,360	7,200	5,600	8,080	3,960	1,990	1,200
9	2,100	3,420	5,510	2,280	6,810	2,420	6,600	6,000	8,100	4,130	2,050	1,200
10	1,960	3,620	4,990	2,320	6,230	2,770	6,200	6,700	8,310	4,460	2,130	1,150
11	1,850	4,380	*4,670	2,230	6,160	2,830	5,900	8,000	*7,200	4,510	2,100	1,080
12	1,840	6,090	4,460	2,150	6,120	2,700	5,600	9,000	5,820	4,330	2,030	1,080
13	1,850	7,830	4,250	2,070	5,610	2,620	5,800	10,000	4,970	4,200	1,930	1,080
14	2,450	7,400	4,020	2,030	5,190	2,550	6,200	11,000	4,490	4,020	1,910	1,030
15	3,140	6,290	3,920	1,990	4,860	2,450	6,300	9,500	4,350	*3,780	1,860	1,020
16	3,280	5,390	3,950	1,950	4,470	2,410	*6,020	9,000	4,220	3,600	1,790	1,030
17	3,080	4,810	3,770	1,870	4,140	2,380	6,140	10,500	4,240	3,350	1,670	1,040
18	2,870	4,430	4,060	1,840	3,890	2,400	7,290	12,000	4,600	3,120	1,620	1,050
19	3,220	*4,160	4,040	1,840	3,680	2,320	10,200	12,500	5,100	2,950	1,590	1,120
20	8,270	4,010	3,760	1,900	3,490	2,250	9,860	13,000	5,460	2,830	1,540	1,190
21	8,610	3,830	3,770	1,860	3,290	2,190	8,210	12,000	5,490	2,710	*1,490	1,180
22	7,060	3,580	4,600	*1,810	3,140	2,110	7,510	10,600	5,240	2,570	1,520	1,130
23	10,100	3,370	4,360	1,800	3,010	2,190	7,200	10,100	4,710	2,490	1,590	1,110
24	*10,200	3,230	4,060	1,900	2,860	2,830	7,240	10,100	4,390	2,510	1,580	1,100
25	7,810	3,180	3,800	1,970	2,900	4,140	8,900	10,800	4,390	2,450	1,530	1,120
26	6,290	4,280	3,560	1,960	3,000	5,480	12,000	10,700	4,380	2,380	1,440	1,140
27	5,390	5,950	3,400	2,030	2,970	5,800	12,700	10,400	4,590	2,380	1,350	1,120
28	4,890	7,470	3,300	2,150	2,910	6,000	13,000	11,300	4,760	2,330	1,310	1,050
29	4,780	*8,160	3,350	2,220	2,910	5,800	12,000	11,500	4,620	2,280	1,300	1,000
30	4,890	7,850	3,160	3,000	-	5,600	10,000	9,600	5,170	2,250	1,280	*990
31	4,440	-	2,940	6,540	-	5,200	-	7,930	-	2,230	1,240	-
Total	140,860	145,650	184,180	71,560	166,150	98,360	224,570	286,630	182,620	109,860	54,710	34,150
Mean	4,544	4,855	5,941	2,308	5,729	3,173	7,486	99,246	6,087	3,544	1,765	1,138
Cfsm	3.88	4.15	5.08	1.97	4.90	2.71	6.40	7.90	5.20	3.03	1.51	0.973
In.	4.48	4.63	5.85	2.27	5.28	3.13	7.14	9.11	5.80	3.49	1.74	1.09
Ac-ft	279,400	288,900	365,300	141,900	329,600	195,100	445,400	568,500	362,200	217,900	108,500	67,740

Calendar year 1951: Max 35,600 Min 1,020 Mean 5,472 Cfsm 4.68 In. 63.47 Ac-ft 3,962,000
Water year 1951-52: Max 17,800 Min 990 Mean 4,643 Cfsm 3.97 In. 54.01 Ac-ft 3,370,000

Peak discharge (base, 15,000 cfs).--Dec. 1 (8 p.m.) 20,800 cfs (14.55 ft); Feb. 5 (2:30 a.m.) 16,700 cfs (12.60 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 1-4, Mar. 27 to Apr. 15, Apr. 28 to May 21; discharge estimated on basis of records for stations near Kosmos and near Mayfield.

West Fork Tilton River near Morton, Wash.

Location.--Lat 46°36'45", long. 122°14'45", in NE¼ sec. 13, T. 13 N., R. 4 E., on left bank three-quarters of a mile upstream from mouth and 4 miles northeast of Morton.

Drainage area.--16.4 sq mi.

Records available.--June 1950 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,820 cfs Feb. 4 (gage height, 5.45 ft); minimum, 5.6 cfs Sept. 21, 22, 23, 24, 25, 28, 29, 30 (gage height, 0.93 ft).
1950-52: Maximum discharge, 2,460 cfs Feb. 9, 1951 (gage height, 6.05 ft, from high-water mark in well); minimum, 4.8 cfs Aug. 25, Sept. 20-24, 1951 (gage height, 0.87 ft).

Remarks.--Records good except those for periods of shifting control and no gage-height record, which are fair. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 4				Feb. 5 to Sept. 30			
1.4	24	3.2	345	0.9	5.0	2.4	117
1.7	44	3.6	505	1.2	13	2.8	197
2.0	74	4.0	700	1.5	26	3.2	310
2.3	116	4.5	1,000	1.8	47	3.7	505
2.6	176	5.0	1,400	2.1	77		
2.9	250						

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	238	51	436	65	570	81	124	168	48	56	9.5	7.4
2	a350	48	338	59	408	72	153	136	46	43	9.0	7.2
3	*500	120	289	55	465	70	151	117	50	36	8.7	7.0
4	242	120	286	51	1,180	72	170	102	66	32	8.5	6.7
5	140	92	253	48	487	64	*259	89	61	28	*8.2	6.7
6	96	76	190	45	292	59	304	83	52	25	8.2	7.7
7	74	71	142	42	225	56	228	82	45	23	8.5	8.5
8	60	*61	116	41	192	56	170	89	42	22	8.2	*9.8
9	50	58	96	42	181	88	149	*90	41	20	8.0	10.5
10	44	94	84	*39	192	188	149	112	39	19	7.7	8.5
11	43	258	84	38	212	138	157	131	36	18	7.4	7.7
12	42	496	97	35	192	106	144	126	*32	17.5	7.2	8.0
13	100	432	105	34	151	90	172	145	28	16	7.2	7.4
14	169	304	90	33	129	82	192	138	26	15.5	7.2	7.2
15	183	218	87	31	120	75	179	112	27	14	7.2	6.7
16	220	158	89	30	104	74	168	131	27	14	7.4	6.5
17	161	125	86	29	90	75	195	140	28	13	7.2	6.5
18	169	103	142	30	81	69	239	138	27	12.5	7.0	6.3
19	388	89	144	29	74	62	236	129	27	11.5	7.0	6.3
20	565	87	105	30	67	58	168	134	28	11.5	6.7	6.3
21	334	80	124	28	*59	54	145	131	32	11.5	6.5	6.0
22	338	71	298	27	55	53	142	102	34	11	10.5	5.8
23	575	64	186	33	52	63	129	93	28	11.5	10.5	5.8
24	320	60	152	113	51	145	145	93	26	11.5	9.3	5.8
25	215	71	105	106	79	222	183	87	25	11	13	5.8
26	152	225	87	105	122	214	188	79	24	11	16.5	5.8
27	113	277	78	150	108	195	268	81	26	10.5	10.5	5.8
28	93	301	74	142	98	197	262	85	28	10	9.0	5.8
29	82	304	108	161	89	172	172	75	28	9.8	8.5	5.8
30	67	256	89	908	-	161	164	59	74	9.5	8.2	5.8
31	58	-	74	620	-	151	-	53	-	9.5	8.0	-
Total	6,181	4,770	4,634	3,199	6,125	3,262	5,505	3,330	1,101	564.3	266.5	207.1
Mean	199	159	149	103	211	105	184	107	36.7	18.2	8.60	6.90
Cfsm	12.1	9.70	9.09	6.28	12.9	6.40	11.2	6.52	2.24	1.11	0.524	0.421
In.	14.02	10.82	10.51	7.25	13.89	7.40	12.48	7.55	2.50	1.28	0.60	0.47
Ac-ft	12,260	9,460	9,190	6,350	12,150	6,470	10,920	6,600	2,180	1,120	529	411

Calendar year 1951: Max 1,870 Min 4.8 Mean 121 Cfsm 7.38 In. 100.09 Ac-ft 87,530
Water year 1951-52: Max 1,180 Min 5.8 Mean 107 Cfsm 6.52 In. 88.77 Ac-ft 77,640

Peak discharge (base, 800 cfs).--Probably Oct. 2 or 3 (time and discharge unknown); Jan. 30 (1 p.m.) 1,250 cfs (4.83 ft); Feb. 4 (4:30 a.m.) 1,820 cfs (5.45 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
Note.--Shifting-control method used June 25 to Aug. 25.

Tilton River near Cinebar, Wash.

Location.--Lat 46°34'35", long. 122°31'15", in SW¼ sec. 26, T. 13 N., R. 2 E., on left bank 1,000 ft downstream from Cinnabar Creek, 2 miles southeast of Cinebar, and 2½ miles upstream from mouth.

Drainage area.--158 sq mi.

Records available.--February 1941 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 397.6 ft above mean sea level (river-profile survey). Prior to Apr. 18, 1941, staff gage at same site and datum.

Average discharge.--11 years, 895 cfs.

Extremes.--Maximum discharge during year, 9,780 cfs Feb. 4 (gage height, 11.69 ft), from rating curve extended above 4,000 cfs; minimum, 70 cfs Sept. 30 (gage height, 3.68 ft), but may have been less sometime during period of no gage-height record in September.
1941-52: Maximum discharge, 14,500 cfs sometime during period of no gage-height record in December 1946 (gage height, 14.36 ft, from high-water mark in well), from rating curve extended above 4,000 cfs; minimum, 60 cfs Sept. 21, 22, 23, 24, 1951 (gage height, 3.54 ft).

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

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
4.6	252	6.5	1,280	3.6	60	5.6	640
4.9	351	7.0	1,750	3.9	102	6.0	890
5.2	475	8.0	2,920	4.2	154	7.0	1,740
5.6	670	9.0	4,310	4.5	223	8.0	2,890
6.0	900			4.8	310	9.0	4,290
				5.2	455	11.0	8,100

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	970	475	2,520	675	*3,370	700	1,140	1,040	385	550	110	87
2	2,180	434	2,150	625	2,750	640	1,240	904	368	460	112	86
3	3,520	665	2,080	585	2,600	635	1,210	814	371	400	110	84
4	1,550	852	2,150	560	1,560	730	1,150	706	447	340	105	81
5	870	675	2,290	525	4,230	*670	1,540	640	419	300	102	81
6	605	595	1,780	520	2,710	610	1,970	590	382	270	102	88
7	462	535	1,400	488	2,120	580	1,820	560	350	250	105	98
8	370	506	1,180	475	1,750	550	1,270	590	333	240	107	99
9	305	484	1,010	493	1,570	706	1,070	605	313	220	102	112
10	276	680	894	488	1,520	1,520	988	652	310	210	98	100
11	258	1,430	*840	457	1,620	1,340	981	778	*310	200	96	90
12	273	2,890	858	430	1,560	1,100	918	778	280	190	93	95
13	448	3,220	852	406	1,300	960	1,030	876	250	180	92	90
14	650	2,620	786	390	1,170	834	1,210	981	220	170	92	85
15	810	1,830	792	378	1,130	766	1,180	802	230	*162	93	80
16	1,040	*1,390	956	359	1,030	712	*1,040	748	230	156	98	76
17	840	1,130	949	340	911	694	1,120	855	240	152	94	76
18	780	956	1,490	340	820	682	1,340	869	230	148	92	74
19	1,420	846	1,420	340	766	620	1,540	827	230	146	92	74
20	3,180	822	1,130	367	718	585	1,170	890	240	141	90	74
21	2,180	732	1,410	347	652	545	967	1,000	260	144	*88	74
22	1,850	670	2,540	326	610	513	897	772	280	139	96	72
23	3,730	620	1,760	344	575	545	820	688	240	141	126	72
24	2,540	570	1,400	625	550	1,150	841	640	230	143	105	72
25	1,650	610	1,140	750	646	1,790	1,030	605	220	135	116	72
26	1,200	1,160	984	720	883	1,820	1,110	550	210	128	137	72
27	935	1,460	894	900	834	1,570	1,440	540	230	126	113	72
28	780	1,750	846	935	778	1,510	1,770	555	250	121	100	71
29	695	1,830	991	998	754	1,380	1,240	540	260	116	94	71
30	600	1,610	852	3,790	-	1,400	1,050	463	650	115	93	*70
31	530	-	738	2,460	-	1,350	-	419	-	112	90	-
Total	37,497	34,047	41,082	21,436	47,487	29,207	35,892	22,277	8,968	6,305	3,143	2,448
Mean	1,210	1,135	1,325	691	1,637	942	1,196	719	299	203	101	81.6
Cfsm	7.66	7.18	8.39	4.37	10.4	5.96	7.57	4.55	1.89	1.28	0.639	0.516
In.	8.83	8.01	9.67	5.05	11.18	6.87	8.45	5.24	2.11	1.48	0.74	0.58
Ac-ft	74,370	67,530	81,480	42,520	94,190	57,930	71,190	44,190	17,790	12,510	6,230	4,860

Calendar year 1951: Max 10,100 Min 62 Mean 924 Cfsm 5.85 In. 79.36 Ac-ft 668,700
Water year 1951-52: Max 7,560 Min 70 Mean 792 Cfsm 5.01 In. 68.21 Ac-ft 574,800

Peak discharge (base, 7,000 cfs).--Feb. 4 (8:30 a.m.) 9,780 cfs (11.69 ft).
* Discharge measurement made on this day.
Note.--No gage-height record June 12 to July 14, Sept. 9-29; discharge estimated on basis of records for stations on nearby streams.

Klickitat Creek at Mossyrock, Wash.

Location.--Lat 46°31'15", long. 122°28'05", on line between secs. 17 and 18, T. 12 N., R. 3 E., on left bank at upstream side of highway bridge, 1 mile southeast of Mossyrock and 4¼ miles upstream from mouth.

Drainage area.--3.86 sq mi.

Records available.--August 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 668.41 ft above mean sea level (levels by city of Tacoma).

Extremes.--Maximum discharge during year, 64 cfs Dec. 5 (gage height, 2.41 ft), from rating curve extended above 35 cfs; no flow Oct. 1, 2, 9-12, July 9 to Sept. 30.
1948-52: Maximum discharge, 165 cfs Feb. 17, 1949 (gage height, 3.62 ft), from rating curve extended above 35 cfs; no flow for long periods each year.

Remarks.--Records good above 5 cfs and fair below. No known diversion or regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.52	0	1.2	9.0
.6	.1	1.4	15
.8	1.0	1.8	32
1.0	3.6	2.2	53

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1.3	33	11.5	15.5	9.9	11	6.6	1.4	1.3		
2	0	1.2	24	11	14	9.3	12.5	5.2	1.1	.7		
3	1.2	5.7	32	10.5	18	10.5	11.5	4.9	1.0	.5		
4	.4	4.2	31	10.5	38	*10	10	4.0	1.2	.4		
5	.1	2.9	49	11	*25	9.6	9.6	3.6	1.0	.3		
6	.1	2.6	36	11	23	8.7	8.7	3.4	1.0	.1		
7	.1	2.6	30	9.9	21	7.8	8.1	3.2	.8	.1		
8	.1	2.9	26	9.3	19.5	7.5	7.8	4.0	.7	.1		
9	0	3.0	23	14	19.5	11	7.2	3.4	.5	0		
10	0	6.9	21	12.5	16.5	16	6.6	3.0	*.5	0		
11	0	12.5	18	11	20	13	6.9	2.9	*1.0	0		
12	0	27	*16	9.6	20	11	6.0	2.6	1.3	0		
13	.1	30	14.5	8.4	16	10	8.1	4.0	*.8	0		
14	.3	21	13	8.4	17.5	9.3	7.2	5.2	.7	0		
15	1.1	15.5	14	8.1	17.5	8.7	*5.7	3.4	.7	*0		
16	2.4	13	14.5	7.2	15	8.1	5.2	2.6	1.0	0		
17	1.9	11.5	14	6.6	14	8.7	4.7	2.0	.9	0		
18	2.1	10.5	27	7.2	13	8.7	4.7	2.0	.5	0		
19	4.2	9.6	17.5	7.2	13	7.8	4.9	2.3	.4	0		
20	16.5	10.5	16	11	13	7.2	4.0	2.9	.4	0		
21	15.5	8.7	20	8.7	12.5	6.6	3.6	2.9	1.8	0	(*)	
22	20	7.8	21	7.5	11.5	6.0	3.2	2.1	1.8	0		
23	28	7.2	17	9.9	12	8.7	3.0	1.9	.9	0		
24	9.3	6.6	15.5	13.5	11.5	17	3.0	1.6	.5	0		
25	5.2	8.7	14.5	11	13	18	2.9	1.3	.4	0		
26	3.7	15.5	15.5	10.5	12	12.5	2.7	1.2	.4	0		
27	2.9	16.5	15	10.5	11	11.5	8.1	1.1	.6	0		
28	2.3	21	16	10	10.5	12.5	7.8	1.2	1.0	0		
29	2.4	20	21	11	11	11.5	5.2	2.0	1.3	0		(*)
30	1.8	19	14.5	17.5	-	14	7.8	1.4	1.9	0		
31	*1.5	-	13	14.5	-	12	-	1.3	-	0		
Total	123.2	325.4	652.5	320.5	474.0	323.1	197.7	89.2	27.5	3.5	0	0
Mean	3.97	10.8	21.0	10.3	16.3	10.4	6.59	2.88	0.92	0.11	0	0
Cfsm	1.03	2.80	5.44	2.67	4.22	2.69	1.71	0.746	0.238	0.028	0	0
In.	1.19	3.14	6.29	3.09	4.57	3.11	1.90	0.86	0.26	0.03	0	0
Ac-ft	244	645	1,290	636	940	641	392	177	55	6.9	0	0

Calendar year 1951: Max 61 Min 0 Mean 9.89 Cfsm 2.56 In. 34.82 Ac-ft 7,160
Water year 1951-52: Max 49 Min 0 Mean 6.93 Cfsm 1.80 In. 24.44 Ac-ft 5,030

Peak discharge (base, 60 cfs).--Dec. 5 (2 a.m.) 64 cfs (2.41 ft).
* Discharge measurement or observation of no flow made on this day.

Winston Creek near Mayfield, Wash.

Location.--Lat 46°29'00", long. 122°31'15", about center of sec. 35, T. 12 N., R. 2 E., on left bank 100 ft downstream from bridge, 3 miles southeast of Mayfield, and 3½ miles upstream from mouth.

Drainage area.--40.0 sq mi.

Records available.--October 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 470 ft (from topographic map).

Extremes.--Maximum discharge during year, 780 cfs Feb. 4 (gage height, 5.15 ft); minimum, 1.3 cfs Sept. 24 (gage height, 1.71 ft).
1949-52: Maximum discharge, 1,960 cfs Feb. 24, 1950 (gage height, 6.94 ft); minimum, 0.6 cfs Aug. 24, 1951 (gage height, 1.63 ft).

Remarks.--Records good. Slight regulation by Long Bell Lumber Co. for millpond.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.8	2.4	3.5	199
2.0	7.4	4.0	326
2.3	22	4.5	490
2.6	49	5.0	695
3.0	101		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	62	444	106	*301	113	160	100	29	37	5.8	4.7
2	90	57	372	95	258	104	169	89	28	26	5.5	3.9
3	122	82	430	96	258	100	152	83	26	15.5	5.8	2.6
4	64	78	437	88	659	*104	142	78	26	14	4.9	2.9
5	41	65	520	86	468	95	134	71	26	19	4.4	3.5
6	31	59	410	82	362	89	131	68	26	17	5.8	3.7
7	26	57	320	75	290	85	118	65	23	16	6.4	5.2
8	20	58	264	70	239	82	110	65	23	14	6.7	8.0
9	16.5	57	215	83	206	100	96	61	20	13	6.4	8.8
10	15.5	79	186	88	181	166	92	57	*19	12.5	5.8	7.0
11	15.5	150	166	83	181	158	89	53	24	12	5.5	6.1
12	17	456	*144	76	173	142	82	51	23	11.5	4.9	5.5
13	28	574	132	71	148	134	88	54	20	11.5	3.9	7.0
14	45	437	115	65	142	123	88	68	19	*10.5	3.9	5.8
15	59	318	118	65	152	116	79	56	19.5	8.8	4.9	5.2
16	90	246	140	61	144	110	*71	50	22	8.8	6.1	3.9
17	65	204	140	56	136	108	68	45	19.5	7.7	6.4	3.3
18	59	171	254	56	123	101	66	41	18	8.4	5.5	2.9
19	73	142	239	56	116	94	75	41	16	7.0	4.9	2.9
20	184	136	206	67	111	86	66	43	19	8.4	5.2	2.9
21	169	115	246	59	100	82	60	61	38	8.8	*4.7	3.3
22	215	101	287	56	94	78	57	50	33	8.8	5.5	3.1
23	520	90	239	64	90	88	53	44	26	9.5	13	2.8
24	304	85	208	122	92	192	51	40	19.5	8.0	8.8	2.8
25	208	83	179	127	127	246	50	37	19.5	4.9	9.1	2.9
26	154	148	160	134	134	227	47	35	18	7.0	8.8	3.1
27	122	173	148	158	131	201	80	32	18	8.8	6.4	3.7
28	103	256	144	156	120	195	110	31	23	7.0	4.2	3.7
29	90	282	160	166	120	169	85	36	26	6.7	4.2	*3.5
30	78	261	136	312	-	179	96	31	52	5.2	4.4	3.5
31	*68	-	120	301	-	181	-	30	-	5.2	5.2	-
Total	3,135.5	5,082	7,279	3,180	5,656	4,048	2,765	1,666	719.0	358.5	183.0	128.2
Mean	101	169	235	103	195	131	92.2	53.7	24.0	11.6	5.90	4.27
Cfsm	2.52	4.22	5.88	2.58	4.88	3.28	2.30	1.34	0.600	0.290	0.148	0.107
In.	2.92	4.72	6.77	2.96	5.26	3.76	2.57	1.55	0.67	0.33	0.17	0.12
Ac-ft	6,220	10,080	14,440	6,310	11,220	8,030	5,480	3,300	1,430	711	363	254

Calendar year 1951: Max 746 Min 1.5 Mean 120 Cfsm 3.00 In. 40.60 Ac-ft 86,640
Water year 1951-52: Max 659 Min 2.6 Mean 93.4 Cfsm 2.34 In. 31.80 Ac-ft 67,840

Peak discharge (base, 900 cfs).--No peak above base.
* Discharge measurement made on this day.

Cowlitz River near Mayfield, Wash.

Location.--Lat 46°30'40", long. 122°36'50", in NE¼ sec. 24, T. 12 N., R. 1 E., on right bank 1 mile upstream from Mill Creek, 2 miles downstream from Winston Creek, and 2½ miles west of Mayfield.

Drainage area.--1,401 sq mi.

Records available.--August 1910 to November 1911, April 1934 to September 1952. Published as "at Mayfield" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 226.6 ft above mean sea level, datum of 1929. August 1910 to November 1911 staff gage at site 2½ miles upstream at different datum. Apr. 27 to June 30, 1934, staff gage at present site and datum.

Average discharge.--18 years (1934-52), 5,854 cfs.

Extremes.--Maximum discharge during year, 22,500 cfs Feb. 4 (gage height, 16.39 ft); minimum, 1,120 cfs Sept. 29, 30 (gage height, 8.03 ft).
1910-11, 1934-52: Maximum discharge, 58,000 cfs Dec. 13, 1946 (gage height, 24.75 ft); minimum, 766 cfs Nov. 30, Dec. 1, 1936 (gage height, 7.18 ft).
Flood of December 1933 is known to have exceeded that of Dec. 13, 1946.

Remarks.--Records excellent. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
8.7	1,950	11.0	6,090	8.0	1,080	11.0	6,140
9.0	2,390	12.0	8,440	8.5	1,720	12.0	8,490
9.5	3,190	14.0	14,000	9.0	2,440	14.0	14,000
10.0	4,070	16.0	20,900	10.0	4,120	16.0	20,900

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,150	*4,420	17,600	3,850	10,700	3,900	6,160	9,760	7,650	6,510	2,260	1,340
2	5,760	4,030	18,900	3,580	10,900	3,720	6,050	8,770	7,320	5,730	2,200	1,360
3	9,260	4,360	15,200	3,460	10,300	3,670	5,860	7,870	7,800	5,370	2,170	*1,370
4	7,340	6,020	13,200	3,390	20,000	3,780	5,560	7,110	8,640	5,460	2,160	1,410
5	4,720	5,320	13,400	3,330	19,500	3,650	6,140	6,580	10,600	5,370	2,180	1,400
6	3,580	4,600	11,300	3,280	14,500	3,480	8,040	6,160	10,400	4,790	2,160	1,360
7	3,020	4,180	9,420	3,120	11,600	3,310	9,440	5,860	9,260	4,330	2,070	1,360
8	2,640	3,960	8,120	3,020	9,920	3,220	8,820	5,960	8,390	4,200	2,040	1,330
9	2,380	3,780	7,130	3,100	8,900	3,440	7,820	6,250	8,260	4,400	2,100	1,320
10	2,200	4,160	*6,440	3,190	8,220	4,650	7,200	6,810	*8,540	4,730	2,140	1,160
11	2,080	5,660	6,020	3,040	8,220	4,650	6,990	8,420	7,700	4,770	2,130	1,210
12	2,080	9,180	5,790	2,920	8,220	4,220	6,760	9,490	6,360	4,610	2,060	1,210
13	2,260	11,700	5,600	2,780	7,390	3,980	6,860	10,500	5,400	4,480	1,970	1,210
14	3,190	10,700	5,240	2,730	6,830	3,780	7,530	11,600	4,830	*4,230	1,940	1,160
15	3,780	8,590	5,060	2,640	6,490	3,600	*7,700	10,400	4,650	4,030	1,900	1,150
16	4,160	7,130	5,340	2,570	5,990	3,460	7,460	9,600	4,570	3,850	1,850	1,140
17	3,780	6,220	5,160	2,460	5,560	*3,410	7,580	11,000	4,570	3,560	1,720	1,150
18	3,580	5,600	6,130	2,440	5,150	3,430	8,660	12,600	4,910	3,310	1,670	1,160
19	4,510	5,080	6,180	2,440	4,830	3,270	11,200	13,200	5,420	3,100	1,630	1,230
20	11,200	4,840	5,470	2,560	4,630	3,160	10,900	13,500	5,820	3,010	*1,580	1,280
21	11,100	4,530	5,680	2,500	4,330	3,050	9,290	13,200	5,960	2,890	1,560	1,280
22	9,310	4,240	7,840	2,400	4,050	2,940	8,520	11,500	5,820	2,730	1,580	1,240
23	13,900	3,980	6,810	2,420	3,900	3,020	8,220	10,400	5,150	2,620	1,710	1,210
24	12,900	3,760	6,050	2,840	3,760	4,250	8,140	10,400	4,750	2,640	1,720	1,200
25	9,710	3,730	5,510	3,120	3,900	6,270	9,470	10,900	4,730	2,590	1,630	1,250
26	7,650	5,300	5,040	3,050	4,230	7,730	12,000	10,800	4,690	2,500	1,600	1,250
27	6,420	7,560	4,780	3,290	4,180	7,800	13,200	10,500	4,870	2,480	1,500	1,250
28	7,940	9,580	4,660	3,460	4,030	7,850	14,300	11,300	5,150	2,440	1,420	1,190
29	5,390	10,400	4,860	3,600	4,030	7,510	12,200	11,500	5,010	2,360	1,400	*1,140
30	5,450	9,790	4,530	6,920	-	7,290	10,300	9,900	5,880	2,340	1,380	1,150
31	4,880	-	4,150	11,000	-	6,920	-	8,360	-	2,300	1,340	-
Total	180,320	182,400	236,610	104,500	224,260	138,410	258,370	300,200	193,100	117,730	56,770	37,470
Mean	5,817	6,080	7,633	3,371	7,733	4,465	8,612	9,684	6,437	3,798	1,831	1,248
Cfsm	4.15	4.34	5.45	2.41	5.52	3.19	6.15	6.91	4.59	2.71	1.31	0.892
In.	4.79	4.84	6.28	2.77	5.95	3.67	6.86	7.97	5.13	3.13	1.51	0.99
Ac-ft	357,700	361,800	469,300	207,300	444,800	274,500	512,500	595,400	383,000	233,500	112,600	74,320

Calendar year 1951: Max 48,100 Min 1,130 Mean 6,578 Cfsm 4.70 In. 63.73 Ac-ft 4,762,000
Water year 1951-52: Max 20,000 Min 1,140 Mean 5,547 Cfsm 3.96 In. 53.89 Ac-ft 4,027,000

Peak discharge (base, 16,000 cfs).--Dec. 1 (9 p.m.) 21,500 cfs (16.14 ft); Feb. 4 (9:30 p.m.) 22,500 cfs (16.39 ft).
* Discharge measurement made on this day.

South Fork Toutle River at Toutle, Wash.

Location.--Lat 46°19'20", long. 122°41'45", in SW¼NW¼ sec. 28, T. 10 N., R. 1 E., on left bank half a mile southwest of Toutle, 1½ miles upstream from mouth, and 3 miles downstream from Johnson Creek.

Drainage area.--118 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (from river-profile survey). Prior to Nov. 11, 1939, staff gage at same site at datum 451.12 ft above mean sea level.

Average discharge.--13 years, 587 cfs.

Extremes.--Maximum discharge during year, 4,600 cfs Feb. 4 (elevation, 456.29 ft); minimum, 72 cfs Sept. 23-25, 30 (elevation, 452.63 ft).
1939-52: Maximum discharge, 8,710 cfs Dec. 11, 1946 (elevation, 458.54 ft); minimum, 63 cfs Sept. 4, 1947.

Remarks.--Records excellent except those for periods of shifting control, which are fair. No diversion or regulation.

Revisions (water years).--W 1184: 1949.

Rating tables, water year 1951-52, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-22				Oct. 23 to Sept. 30			
453.0	166	454.0	770	452.6	65	454.0	820
453.3	280	454.5	1,310	452.9	145	454.5	1,360
453.6	440	455.0	2,000	453.2	265	455.0	2,050
				453.6	500	456.0	3,900

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	468	348	3,490	348	2,300	424	690	1,010	458	332	105	92
2	1,940	320	2,100	332	1,980	400	706	865	430	285	105	90
3	1,530	370	2,060	320	1,800	394	666	739	451	275	102	88
4	840	337	2,410	305	3,880	406	650	650	486	256	100	88
5	503	295	2,430	305	2,510	400	722	586	521	238	100	88
6	364	275	1,570	290	1,680	*406	920	542	*493	224	100	90
7	289	260	1,120	285	*1,290	382	920	507	444	208	100	105
8	251	260	892	275	1,060	364	775	535	424	200	100	105
9	219	256	722	332	960	430	674	542	418	192	127	110
10	197	556	642	348	874	698	634	578	418	188	102	98
11	204	1,480	602	320	910	666	618	666	400	184	100	95
12	242	2,360	594	300	892	594	586	674	364	176	92	98
13	308	2,360	*563	280	802	535	642	730	320	173	92	98
14	410	1,690	521	275	739	*479	714	748	305	159	95	90
15	582	1,160	514	265	690	437	690	714	326	152	95	85
16	810	874	542	252	642	412	666	714	332	148	95	85
17	566	706	535	224	570	400	*698	820	305	*145	95	85
18	510	602	990	229	528	394	820	874	300	139	95	82
19	886	542	865	234	507	364	980	865	305	136	95	82
20	1,800	479	650	295	465	342	829	883	305	133	92	82
21	1,330	424	766	265	430	332	730	930	310	133	92	80
22	1,240	376	1,090	247	406	320	682	784	300	130	98	78
23	3,210	354	829	275	382	364	634	714	275	130	*115	72
24	2,050	320	682	472	376	1,070	642	690	256	127	102	72
25	1,370	370	578	486	412	1,350	722	682	247	121	115	72
26	940	1,080	514	493	458	1,190	793	634	242	118	133	72
27	739	1,320	486	563	424	1,020	980	642	247	118	108	75
28	610	1,790	465	563	412	940	1,110	690	265	112	102	75
29	549	1,820	514	570	430	847	901	626	290	110	95	75
30	451	1,710	451	2,000	-	820	1,010	542	382	108	95	75
31	394	-	400	2,170	-	766	-	500	-	108	92	-
Total	25,802	25,094	30,587	13,918	28,809	17,946	22,804	21,676	10,619	5,258	3,134	2,582
Mean	832	836	987	449	993	579	760	699	354	170	101	86.1
Cfsm	7.05	7.08	8.36	3.81	8.42	4.91	6.44	5.92	3.00	1.44	0.856	0.730
In.	8.13	7.91	9.64	4.39	9.08	5.66	7.19	6.83	3.35	1.66	0.99	0.81
Ac-ft	51,180	49,770	60,670	27,610	57,140	35,600	45,230	42,990	21,060	10,430	6,220	5,120

Calendar year 1951: Max 5,580 Min 69 Mean 659 Cfsm 5.58 In. 75.85 Ac-ft 477,300
Water year 1951-52: Max 3,880 Min 72 Mean 569 Cfsm 4.82 In. 65.64 Ac-ft 413,000

Peak discharge (base, 4,200 cfs).--Dec. 1 (7 a.m.) 4,270 cfs (456.16 ft); Feb. 4 (10 a.m.) 4,600 cfs (456.29 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Feb. 12 to Mar. 12, Mar. 26 to July 13.

Toutle River near Silver Lake, Wash.

Location.--Lat 46°20'10", long. 122°43'30", in SE¼ sec. 19, T. 10 N., R. 1 E., on right bank just downstream from highway bridge, half a mile downstream from confluence of North and South Forks and 5 miles northeast of Silver Lake. Prior to Apr. 17, 1952, at former site on left bank at highway bridge.

Drainage area.--474 sq mi.

Records available.--September 1909 to August 1912, October 1919 to December 1923 (fragmentary), September 1929 to September 1952. Published as "near Castle Rock" 1909-12.

Gage.--Water-stage recorder. Datum of gage is 407.3 ft above mean sea level (from river-profile survey). Prior to Aug. 4, 1912, staff gage at site 2 miles downstream, datum of gage, 307.3 ft above mean sea level (unadjusted). Oct. 9, 1919, to Dec. 14, 1923, water-stage recorder at site 300 ft downstream at different datum. Sept. 25 to Nov. 10, 1929, chain gage and Nov. 11, 1929, to Oct. 6, 1938, Oct. 4, 1950, to Apr. 16, 1952, water-stage recorder, at old highway bridge at same datum. Oct. 7, 1938, to Oct. 3, 1950, and since Apr. 17, 1952, water-stage recorder at present site and datum.

Average discharge.--28 years (1909-11, 1919-21, 1922-23, 1929-52), 1,989 cfs.

Extremes.--Maximum discharge during year, 11,900 cfs Feb. 4 (gage height, 9.87 ft), minimum, 325 cfs Sept. 28-30 (gage height, 1.73 ft).
1909-12, 1919-23, 1929-52: Maximum discharge observed, 35,600 cfs Mar. 2, 1910; maximum gage height recorded, 22.7 ft Dec. 23, 1933; minimum discharge, 240 cfs Nov. 21, 1929.

Remarks.--Records good. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 292: 1909, calendar year. W 754: 1930-32.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 16				Apr. 17 to Sept. 30			
2.3	650	4.0	2,360	1.7	310	3.0	1,290
2.5	790	5.0	4,000	1.9	410	3.5	1,890
3.0	1,210	6.0	5,660	2.1	530	4.0	2,610
3.5	1,720	9.0	10,500	2.5	820	4.5	3,520

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,170	1,350	9,200	1,570	5,480	1,530	2,320	3,140	1,650	1,520	494	375
2	3,400	1,250	6,300	1,500	5,130	1,470	2,350	2,750	1,570	1,310	482	375
3	3,750	1,340	6,200	1,470	4,830	1,440	2,210	2,390	1,590	1,210	476	375
4	2,320	1,370	6,760	1,440	10,500	1,470	2,080	2,120	1,720	1,200	476	370
5	1,530	1,230	7,450	1,410	7,530	1,450	2,170	1,920	1,900	1,130	470	360
6	1,190	1,160	5,180	1,400	5,200	*1,440	2,640	1,770	*1,880	1,040	470	375
7	998	1,100	4,070	1,340	*4,210	1,390	2,680	1,660	1,710	972	470	405
8	878	1,080	3,340	1,300	3,530	1,340	2,370	1,680	1,640	945	464	405
9	776	1,070	2,780	1,400	3,140	1,420	2,170	1,680	1,650	963	518	434
10	713	1,530	2,520	1,500	2,860	2,060	2,020	1,710	1,660	990	470	395
11	713	3,150	2,390	1,450	3,020	2,080	1,950	1,930	1,570	945	452	380
12	783	5,600	2,320	1,380	2,980	1,910	1,890	1,990	1,400	909	446	385
13	950	6,620	*2,250	1,300	2,620	1,800	1,960	2,200	1,240	868	434	390
14	1,160	5,310	2,090	1,280	2,400	1,690	2,120	2,340	1,150	828	434	370
15	1,540	*3,910	2,010	1,250	2,370	1,580	2,060	2,200	1,170	796	440	360
16	1,970	2,930	2,120	1,200	2,230	1,500	1,990	2,160	1,170	756	428	335
17	1,600	2,430	2,140	1,140	2,080	1,460	*2,020	2,450	1,140	*719	416	350
18	1,440	2,160	3,530	1,120	1,920	1,460	2,270	2,680	1,150	691	410	350
19	1,970	1,960	3,140	1,110	1,830	1,390	2,800	2,750	1,210	663	405	350
20	5,040	1,820	2,520	1,270	1,790	1,320	2,500	2,820	1,250	649	405	345
21	4,090	1,650	2,620	1,240	1,680	1,280	2,230	2,850	1,330	628	400	340
22	3,730	1,530	3,710	1,180	1,580	1,240	2,080	2,530	1,290	607	416	340
23	7,900	1,460	2,960	1,210	1,520	1,290	1,960	2,300	1,140	600	*488	335
24	5,420	1,400	2,520	1,730	1,460	2,870	1,920	2,240	1,080	600	434	340
25	3,800	1,440	2,220	1,880	1,540	3,870	2,120	2,230	1,030	579	458	345
26	2,760	2,800	2,050	1,800	1,720	3,820	2,360	2,160	1,020	558	482	345
27	2,250	3,410	1,970	1,920	1,610	3,320	2,830	2,160	1,060	551	422	340
28	1,950	4,810	1,920	1,860	1,530	3,100	3,420	2,300	1,110	530	400	330
29	1,820	4,990	2,050	1,890	1,540	2,710	2,870	2,220	1,160	524	390	325
30	1,610	4,620	1,900	4,620	-	2,650	3,090	1,980	1,640	512	390	325
31	1,480	-	1,710	5,320	-	2,640	-	1,770	-	506	380	-
Total	70,701	76,480	103,940	51,480	89,830	59,990	69,450	69,060	41,260	25,299	13,720	10,869
Mean	2,281	2,549	3,353	1,661	3,098	1,935	2,315	2,228	1,375	816	443	362
Cfsm	4.81	5.38	7.07	3.50	6.54	4.08	4.88	4.70	2.90	1.72	0.935	0.764
In.	5.55	6.00	8.16	4.04	7.05	4.71	5.45	5.42	3.24	1.98	1.08	0.85
Ac-ft	140,200	151,700	206,200	102,100	178,200	119,000	137,800	137,000	81,840	50,180	27,210	21,560

Calendar year 1951: Max 13,700 Min 320 Mean 2,137 Cfsm 4.51 In. 61.20 Ac-ft 1,547,000
Water year 1951-52: Max 10,500 Min 325 Mean 1,864 Cfsm 3.93 In. 53.53 Ac-ft 1,353,000

Peak discharge (base, 9,000 cfs).--Oct. 23 (10:30 a.m.) 9,770 cfs (8.57 ft); Dec. 1 (10:30 a.m.) 10,700 cfs (9.17 ft); Feb. 4 (11:30 a.m.) 11,900 cfs (9.87 ft).
* Discharge measurement made on this day.

Cowlitz River at Castle Rock, Wash.

Location.--Lat 46°16'30", long. 122°55'00", in SE¼ sec. 10, T. 9 N., R. 2 W., on right bank at highway bridge in Castle Rock, 2½ miles downstream from Toutle River and 14 miles upstream from mouth.

Drainage area.--2,238 sq mi.

Records available.--December 1926 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 19.73 ft above mean sea level, datum of 1929. Prior to Dec. 18, 1933, staff gage at site 2 miles upstream at different datum. Dec. 18, 1933, to June 13, 1934, wire-weight gage on highway bridge at present datum.

Average discharge.--25 years (1927-52), 8,781 cfs.

Extremes.--Maximum discharge during year, 41,400 cfs Feb. 4 (gage height, 17.78 ft); minimum, 1,480 cfs Sept. 30 (gage height, 7.01 ft).
1926-52: Maximum discharge observed, 139,000 cfs Dec. 23, 1933 (gage height, 31.6 ft, present datum), from rating curve extended above 65,000 cfs; minimum, 998 cfs Nov. 7, 8, 1935.

Remarks.--Records excellent. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
7.8	2,720	10.0	7,900	7.0	1,470	10.0	8,200
8.1	3,300	12.0	14,200	7.6	2,440	11.0	11,300
8.5	4,100	14.0	22,000	8.2	3,610	14.0	23,000
9.0	5,250	16.0	31,700	9.0	5,450	17.0	37,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,380	6,300	30,200	6,400	18,700	6,460	10,000	14,200	9,850	8,410	2,900	1,820
2	8,200	5,500	31,200	5,900	18,600	6,090	9,730	12,800	9,280	7,670	2,870	1,820
3	12,800	5,800	27,600	5,600	17,300	5,930	9,520	11,400	9,670	6,840	2,790	1,820
4	11,000	7,390	26,600	5,480	35,600	6,060	8,830	10,200	10,600	6,820	2,750	1,820
5	7,300	7,180	27,800	5,380	34,400	*5,960	9,100	9,310	*12,600	6,900	2,750	1,840
6	5,500	6,250	21,100	5,250	*24,800	5,700	11,000	8,710	13,200	6,330	2,750	1,820
7	4,480	5,750	16,300	5,080	19,400	5,420	13,100	8,170	11,900	5,650	2,700	1,840
8	3,960	5,400	13,600	4,920	16,100	5,200	12,600	8,080	10,700	5,380	2,640	1,840
9	3,600	5,180	11,700	5,850	14,200	5,350	11,300	8,440	10,400	5,480	2,680	1,840
10	3,300	6,000	10,500	6,680	13,000	7,870	10,300	8,800	10,600	5,800	2,730	1,810
11	3,100	9,730	9,790	6,380	12,800	8,470	9,820	10,400	10,300	5,990	2,720	1,720
12	3,080	16,900	9,220	5,920	13,700	7,670	9,520	12,000	8,680	5,800	2,660	1,680
13	3,340	22,700	8,860	5,350	12,200	7,070	9,580	12,900	7,350	5,620	2,550	1,700
14	3,880	20,400	8,230	5,100	11,200	6,650	10,400	14,600	6,460	5,380	2,490	1,640
15	5,400	*15,200	7,810	4,820	10,700	6,220	10,600	13,600	6,170	5,080	2,460	1,580
16	6,600	12,100	8,320	4,580	10,000	5,860	10,300	12,400	6,140	*4,840	2,400	1,570
17	6,050	10,200	8,410	4,500	9,160	5,620	10,200	13,700	5,990	4,630	2,280	1,570
18	5,450	8,950	12,900	4,240	8,410	5,750	*11,100	15,700	6,120	4,260	2,210	1,570
19	6,150	8,020	12,400	4,220	7,900	5,500	14,000	16,700	6,710	4,040	2,180	1,600
20	14,300	7,420	10,200	5,000	7,670	5,200	14,900	17,100	7,260	3,840	2,110	1,670
21	16,700	6,980	10,400	5,280	7,150	5,010	12,800	17,200	7,640	3,780	2,060	1,680
22	14,400	6,420	14,300	4,780	6,760	4,840	11,600	15,200	7,550	3,590	*2,070	*1,670
23	22,600	5,980	12,200	4,750	6,520	4,860	11,100	13,500	6,870	3,480	2,230	1,620
24	22,000	5,650	10,500	6,500	6,360	7,930	10,700	13,200	6,170	3,400	2,310	1,610
25	15,600	5,650	9,310	7,390	6,650	11,400	11,700	13,700	6,010	3,360	2,240	1,620
26	12,000	8,980	8,440	6,700	7,410	12,900	14,300	13,700	6,010	3,220	2,240	1,640
27	9,940	13,700	8,020	6,720	7,120	12,600	16,600	13,200	6,010	3,160	2,110	1,640
28	8,560	18,300	*7,690	6,720	6,730	12,300	19,000	14,000	6,570	3,120	1,950	1,620
29	7,840	20,000	8,590	6,600	6,600	11,900	17,200	14,400	6,440	3,060	1,900	1,550
30	7,630	17,500	8,410	11,200	-	11,500	14,700	12,700	7,210	2,980	1,890	1,480
31	6,920	-	7,210	19,400	-	11,300	-	10,700	-	2,960	1,860	-
Total	267,060	301,530	417,810	192,690	377,140	230,590	355,600	390,710	246,460	150,850	74,480	50,700
Mean	8,615	10,050	13,480	6,216	13,000	7,438	11,850	12,600	8,215	4,866	2,403	1,690
Cfsm	3.85	4.49	6.02	2.78	5.81	3.32	5.29	5.63	3.67	2.17	1.07	0.755
In.	4.44	5.01	6.94	3.20	6.27	3.83	5.91	6.49	4.10	2.51	1.24	0.84
Ac-ft	529,700	598,100	828,700	382,200	748,000	457,400	705,300	775,000	488,800	299,200	147,700	100,600

Calendar year 1951: Max 63,900 Min 1,550 Mean 9,989 Cfsm 4.46 In. 60.59 Ac-ft 7,232,000
Water year 1951-52: Max 35,600 Min 1,480 Mean 8,349 Cfsm 3.75 In. 50.78 Ac-ft 6,061,000

Peak discharge (base, 32,000 cfs).--Dec. 1 (9 p.m.) 35,200 cfs (16.69 ft); Feb. 4 (4 p.m.) 41,400 cfs (17.78 ft).
* Discharge measurement made on this day.

Arkansas Creek near Castle Rock, Wash.

Location.--Lat 46°15'50", long. 122°58'00", in W½ sec. 17, T. 9 N., R. 2 W., on right bank 3 miles upstream from mouth and 3 miles west of Castle Rock.

Drainage area.--19.4 sq mi.

Records available.--May 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 75 ft (from topographic map).

Extremes.--Maximum discharge during year, 772 cfs Feb. 4 (gage height, 4.34 ft); maximum gage height, 4.45 ft Feb. 3 (drift on control); minimum discharge, 1.8 cfs Sept. 22, 23 (gage height, 0.71 ft).
1949-52: Maximum discharge, 1,790 cfs Feb. 24, 1950 (gage height, 5.77 ft); minimum, 1.3 cfs Aug. 22, 1951 (gage height, 0.63 ft).

Remarks.--Records good. Some diversion for domestic use. No regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.7	1.7	2.3	104
.9	4.0	2.6	156
1.1	8.0	3.0	239
1.4	20	3.5	387
1.7	40	4.0	590
2.0	65		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	49	326	81	395	77	98	34	15	11	3.6	3.2
2	119	46	286	76	311	72	107	32	13.5	9.1	3.6	2.8
3	60	67	406	72	373	76	98	30	13.5	8.0	2.9	2.7
4	36	59	449	67	590	81	90	28	14	7.5	2.6	2.7
5	26	52	421	64	373	75	85	27	*14	7.5	2.7	2.8
6	20	50	311	61	*278	*70	79	26	13.5	6.5	3.6	3.7
7	17	47	242	59	223	67	73	25	12.5	5.9	4.1	4.1
8	14.5	46	193	57	187	65	66	25	11.5	5.3	4.0	5.1
9	13	49	158	84	166	85	62	24	10.5	5.0	3.3	*5.7
10	12	84	135	107	143	175	58	22	10.5	5.0	3.1	4.3
11	14	187	118	107	142	166	55	24	12.5	5.0	2.8	3.7
12	19.5	346	104	109	131	151	53	24	12.5	5.1	2.6	3.7
13	33	445	90	84	114	135	57	24	11.5	5.3	2.6	3.6
14	45	*333	80	77	109	124	54	27	10.5	4.6	3.1	3.1
15	54	234	85	67	100	109	49	24	12.5	*4.5	3.9	2.9
16	68	181	86	61	92	100	46	21	12.5	4.3	3.9	2.7
17	59	149	90	57	85	101	44	19	11	4.5	3.7	2.7
18	65	124	242	58	79	95	*42	18.5	9.7	4.5	3.6	2.4
19	146	107	197	54	79	86	41	21	9.1	4.5	3.6	2.1
20	197	90	164	77	76	79	39	22	10	4.5	3.2	2.0
21	154	79	322	74	68	73	37	22	10.5	4.6	3.1	2.0
22	230	70	359	68	67	69	35	21	9.7	4.8	*3.9	*1.9
23	336	64	256	72	69	72	34	18.5	8.8	7.2	5.0	1.9
24	214	60	201	94	72	88	34	17.5	8.0	6.3	5.1	2.1
25	149	76	164	107	86	92	32	16.5	8.5	5.3	7.5	2.5
26	112	135	140	119	100	92	31	16	8.0	4.8	7.2	2.7
27	88	166	123	152	96	84	36	14.5	8.8	4.5	5.3	2.7
28	75	256	*111	156	89	79	34	15	11.5	4.3	4.3	2.7
29	66	267	130	152	84	88	33	17	11	4.0	3.7	2.6
30	59	256	109	362	-	100	36	15.5	12.5	3.9	4.3	2.7
31	53	-	92	376	-	107	-	15	-	3.7	3.6	-
Total	2,575.0	4,174	6,190	3,211	4,777	2,933	1,638	686.0	338.4	171.0	119.5	89.8
Mean	83.1	139	200	104	165	94.6	54.6	22.1	11.3	5.52	3.85	2.99
Cfsm	4.28	7.16	10.3	5.36	8.51	4.88	2.81	1.14	0.582	0.285	0.198	0.154
In.	4.94	8.00	11.87	6.16	9.16	5.62	3.14	1.32	0.65	0.33	0.23	0.17
Ac-ft	5,110	8,280	12,280	6,370	9,480	5,820	3,250	1,360	671	339	237	178

Calendar year 1951: Max 651 Min 1.5 Mean 100 Cfsm 5.15 In. 70.01 Ac-ft 72,440
Water year 1951-52: Max 590 Min 1.9 Mean 73.5 Cfsm 3.79 In. 51.59 Ac-ft 53,380

Peak discharge (base, 1,000 cfs).--No peak above base.
* Discharge measurement made on this day.

Coweman River near Kelso, Wash.

Location.--Lat 46°07'40", long. 122°50'10", in S½ sec. 32, T. 8 N., R. 1 W., on right bank 3 miles downstream from Goble Creek, 3.8 miles southeast of Kelso, and 5½ miles upstream from mouth.

Drainage area.--119 sq mi.

Records available.--July 1950 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,840 cfs Dec. 4 (gage height, 10.31 ft); minimum, 23 cfs Sept. 23 (gage height, 3.77 ft).
1950-52: Maximum discharge, that of Dec. 4, 1951; minimum, 22 cfs Sept. 22, 1951 (gage height, 3.75 ft).
Flood of Feb. 24, 1950, reached a stage of 12.8 ft, from floodmarks (discharge, 7,730 cfs, from rating curve extended above 2,200 cfs on basis of slope-area determination of peak flow).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No known diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.7	18	6.0	560
4.0	45	6.5	780
4.5	116	7.0	1,040
5.0	225	8.0	1,690
5.5	370	9.2	2,680

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	195	1,680	374	1,700	328	600	452	124	118	36	31
2	950	178	1,250	349	1,600	304	624	388	116	98	35	30
3	765	232	*1,680	337	1,700	313	564	334	113	87	35	29
4	398	280	2,670	322	2,500	364	528	286	114	80	33	28
5	238	222	2,680	337	1,800	405	524	256	118	78	32	28
6	169	202	1,670	*310	1,100	433	536	238	120	71	34	30
7	135	188	1,110	300	850	398	484	225	109	*66	36	41
8	*109	182	830	310	700	364	416	228	102	62	40	43
9	94	171	649	450	*644	468	370	225	98	58	46	51
10	87	321	556	550	592	970	346	212	104	55	37	37
11	88	1,030	500	500	608	965	331	218	126	55	34	32
12	120	1,880	472	450	600	805	310	212	122	55	32	35
13	173	1,800	440	400	532	676	328	218	102	55	*31	38
14	274	*1,260	398	350	508	612	331	228	98	51	34	33
15	343	890	405	300	496	540	304	215	106	47	37	30
16	412	662	464	270	464	484	283	195	118	47	37	28
17	310	544	496	260	430	460	277	200	102	47	35	28
18	277	460	1,310	250	394	452	289	200	93	46	33	27
19	419	405	1,090	300	377	416	328	200	86	47	34	27
20	810	355	780	350	352	380	283	228	88	47	32	27
21	703	316	1,070	320	325	*358	*253	242	106	49	31	26
22	795	280	1,700	310	310	343	238	212	108	47	32	24
23	1,870	256	1,400	300	298	367	225	185	90	49	50	23
24	1,140	242	1,100	420	286	1,310	220	169	81	51	42	24
25	716	250	900	440	328	1,380	225	161	81	47	53	26
26	508	482	700	450	380	1,090	232	*151	78	43	66	27
27	391	572	600	550	358	860	310	145	81	42	44	27
28	325	865	550	580	343	740	370	149	99	40	37	27
29	286	1,020	*584	600	340	649	331	153	102	38	35	26
30	245	890	500	1,300	-	667	416	139	139	37	36	26
31	218	-	422	1,600	-	672	-	129	-	36	33	-
Total	13,576	16,630	30,656	13,939	20,915	18,573	10,878	6,793	3,124	1,749	1,162	909
Mean	438	554	989	450	721	599	363	219	104	56.4	37.5	30.3
Cfsm	3.68	4.66	8.31	3.78	6.06	5.03	3.05	1.84	0.874	0.474	0.315	0.255
In.	4.24	5.20	9.58	4.36	6.54	5.80	3.40	2.12	0.98	0.55	0.36	0.28
Ac-ft	26,930	32,990	60,810	27,650	41,480	36,840	21,570	13,470	6,200	3,470	2,300	1,800

Calendar year 1951: Max 2,680 Min 22 Mean 462 Cfsm 3.88 In. 52.63 Ac-ft 334,200
Water year 1951-52: Max 2,680 Min 23 Mean 380 Cfsm 3.19 In. 43.41 Ac-ft 275,500

Peak discharge (base, 2,600 cfs).--Dec. 4 (6:30 p.m.) 3,840 cfs (10.31 ft); probably Feb. 4 (time unknown) 2,710 cfs (9.23 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 22-28, Jan. 6 to Feb. 8; discharge estimated on basis of high-water mark in well and records for stations on nearby streams.

Abernathy Creek near Longview, Wash.

Location.--Lat 46°12'10", long. 123°09'15", in SE¼ sec. 3, T. 8 N., R. 4 W., on left bank 1 mile upstream from mouth and 11 miles northwest of Longview.

Drainage area.--20.3 sq mi.

Records available.--April 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is about 70 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,220 cfs Feb. 4 (gage height, 5.01 ft), from rating curve extended above 650 cfs; minimum, 4.2 cfs Sept. 23, 24 (gage height, 0.97 ft).

1949-52: Maximum discharge, 2,700 cfs Feb. 24, 1950 (gage height, 6.66 ft), from rating curve extended above 650 cfs; minimum, that of Sept. 23, 24, 1952.

Remarks.--Records good except those for period of shifting control, which are fair, and those for periods of no gage-height record, which are poor. Some diversion for domestic use. No regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3

1.3	15.5	2.7	194
1.5	26	3.0	272
1.8	51	3.5	432
2.1	87	4.0	632
2.4	134	4.7	1,010

Feb. 4 to Sept. 30

0.9	2.9
1.1	7.5
1.3	15
1.5	26
1.8	51

Note.--Same as preceding table above 1.8 ft.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	55	270	84	498	100	131	*42	20	19	7.2	5.6
2	181	52	240	78	398	93	138	40	19	16	6.9	5.1
3	90	70	320	77	457	98	127	39	18.5	13	6.1	5.4
4	53	64	400	70	962	112	119	36	*19.5	12	5.8	5.4
5	38	58	500	68	538	104	114	35	*19	11	6.1	5.6
6	31	54	380	63	368	100	107	34	19	10.5	7.2	6.9
7	26	50	290	61	296	94	98	33	17	10	7.8	7.5
8	23	50	230	58	244	91	91	32	16	9	7.2	9.6
9	20	*60	190	73	211	114	84	32	15.5	8	6.6	10
10	19	98	160	78	185	239	79	30	16	8	6.4	7.5
11	23	199	140	80	181	216	74	31	19.5	8	6.1	6.9
12	30	350	120	77	179	192	70	32	19	8	5.8	7.5
13	53	400	105	72	150	174	75	32	16.5	8	6.1	6.9
14	62	340	95	70	148	*164	70	35	16.5	8	6.6	6.1
15	80	290	90	66	*141	145	64	30	19	7.5	7.5	5.6
16	98	250	95	60	127	132	60	28	18	8	7.8	5.6
17	75	210	90	55	117	132	59	26	17	8	6.9	5.8
18	82	175	230	56	107	129	55	26	14.5	8	6.6	5.1
19	235	150	200	54	104	119	56	27	14	8	6.6	4.8
20	302	125	180	70	98	107	53	30	15.5	8.5	6.1	4.6
21	208	110	300	62	88	101	49	33	16.5	8.5	5.8	4.6
22	279	100	400	59	84	95	46	29	15.5	9.5	6.9	4.6
23	398	90	300	62	84	98	44	26	14	*12	8.1	*4.4
24	280	80	220	80	84	127	43	24	13	11	10	4.6
25	200	130	180	88	101	127	40	24	13	9.6	14	4.8
26	150	150	160	98	117	124	39	22	12	8.7	13.5	5.4
27	110	230	140	127	114	114	43	21	13.5	8.1	9.6	5.6
28	90	270	120	129	106	112	43	21	16	7.8	*7.8	5.4
29	78	290	*140	136	106	127	39	24	15	7.5	6.9	5.1
30	68	260	107	436	-	145	46	21	23	7.2	7.2	5.1
31	60	-	91	468	-	141	-	20	-	7.2	6.1	-
Total	3,486	4,810	6,483	3,115	6,393	3,966	2,156	915	500.5	293.6	229.3	177.1
Mean	112	160	209	100	220	128	71.9	29.5	16.7	9.47	7.40	5.90
Cfsm	5.52	7.88	10.3	4.93	10.8	6.31	3.54	1.45	0.823	0.467	0.365	0.291
In.	6.39	8.81	11.88	5.71	11.71	7.27	3.95	1.68	0.92	0.54	0.42	0.32
Ac-ft	6,910	9,540	12,860	6,180	12,680	7,870	4,280	1,810	993	582	455	351

Calendar year 1951: Max 1,000 Min 5.2 Mean 117 Cfsm 5.76 In. 78.36 Ac-ft 84,830
Water year 1951-52: Max 962 Min 4.4 Mean 88.9 Cfsm 4.38 In. 59.60 Ac-ft 64,510

Peak discharge (base, 1,100 cfs).--Feb. 4 (2:30 a.m.) 1,220 cfs (5.01 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 24 to Nov. 9, Nov. 12 to Dec. 29, July 2-22; discharge estimated on basis of recorded range in stage, 2 discharge measurements, and records for stations on nearby streams. Shifting-control method used Dec. 30 to Jan. 31.

Clatskanie River near Clatskanie, Oreg.

Location.--Lat 46°02'55", long. 123°07'05", in sec. 36, T. 7 N., R. 4 W., on left bank 2 miles downstream from Carcus Creek and 5½ miles southeast of Clatskanie.

Drainage area.--53.0 sq mi (revised).

Records available.--August 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 240 ft (by barometer). Prior to Apr. 25, 1951, at site 700 ft downstream at different datum.

Extremes.--Maximum discharge during year, 1,460 cfs Dec. 5 (gage height, 4.39 ft); minimum, 3.7 cfs Sept. 2, 3, 4, 22.
1949-52: Maximum discharge, 2,000 cfs Feb. 24, 1950 (gage height, 5.29 ft, site and datum then in use); minimum, that of Sept. 2, 3, 4, 22, 1952.

Remarks.--Records good. No diversion above station; occasional slight regulation by log ponds. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 3				Dec. 4 to Sept. 30			
0.5	5.4	1.1	63	0.2	2.3	1.3	158
.6	10	1.5	149	.3	5.9	2.0	365
.7	16	2.0	315	.4	12	3.0	775
.8	24	3.0	760	.5	20	4.2	1,360
				.8	59		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	25	544	168	888	183	122	41	16	12	5.2	4.5
2	35	23	508	144	775	160	129	37	14	10	4.8	4.1
3	28	33	*724	131	690	156	122	32	14	9.6	4.8	4.1
4	18	36	1,070	120	806	160	114	30	14	9.0	4.5	4.1
5	13	32	1,340	114	667	163	110	29	14	9.0	4.5	4.1
6	12	30	945	104	495	248	106	28	13	8.3	4.8	4.8
7	10	28	631	93	382	277	95	29	13	7.1	5.2	5.2
8	9.4	27	447	86	298	254	86	30	11	7.1	5.5	7.1
9	8.9	27	330	116	248	237	80	29	11	6.5	5.5	7.7
10	8.9	56	243	149	210	*277	75	27	10	6.5	4.8	5.9
11	9.9	186	*191	170	188	274	72	27	14	*6.5	4.8	5.5
12	12	343	161	168	178	265	67	26	19	6.5	4.8	5.5
13	14	378	140	156	153	245	*70	27	16	6.5	4.5	5.5
14	20	339	120	153	144	259	69	27	14	5.9	4.8	5.2
15	22	275	108	144	146	259	59	24	14	5.5	5.5	5.2
16	22	214	112	127	151	245	53	22	14	5.5	5.9	4.8
17	17	177	99	108	160	229	51	20	12	5.5	5.5	4.8
18	18	141	317	104	156	218	49	19	11	5.9	5.2	4.8
19	30	118	491	99	149	191	49	20	10	5.9	5.2	4.5
20	52	100	400	144	137	170	45	21	10	5.9	4.8	4.5
21	50	80	390	*153	122	153	42	21	11	5.9	*4.8	4.1
22	77	66	608	146	114	142	41	20	11	5.9	5.2	4.1
23	230	57	511	144	112	142	39	18	10	7.7	5.5	4.1
24	163	50	393	173	108	166	38	18	10	6.5	5.9	4.5
25	107	57	302	202	131	163	38	17	10	5.9	7.7	4.8
26	73	128	245	221	186	163	37	17	10	5.9	7.7	5.2
27	56	205	207	262	218	163	35	16	11	5.5	5.9	5.2
28	43	368	173	320	213	160	38	*15	12	5.2	5.5	5.2
29	36	481	224	340	199	146	37	16	12	5.2	5.2	5.2
30	31	454	221	618	-	142	41	15	13	5.2	5.2	5.2
31	*28	-	196	*834	-	133	-	15	-	5.2	4.8	-
Total	1,267.1	4,534	12,391	6,011	8,424	6,143	2,009	733	374	208.8	164.0	149.5
Mean	40.9	151	400	194	290	198	67.0	23.6	12.5	6.74	5.29	4.98
Cfsm	0.772	2.85	7.55	3.66	5.47	3.74	1.26	0.445	0.236	0.127	0.100	0.094
In.	0.89	3.18	8.69	4.22	5.91	4.31	1.41	0.51	0.26	0.15	0.12	0.10
Ac-ft	2,510	8,990	24,580	11,920	16,710	12,180	2,980	1,450	742	414	325	297

Calendar year 1951: Max 1,340 Min 4.8 Mean 135 Cfsm 2.55 In. 34.75 Ac-ft 98,200
Water year 1951-52: Max 1,340 Min 4.1 Mean 116 Cfsm 2.19 In. 29.75 Ac-ft 84,100

Peak discharge (base, 700 cfs).--Dec. 5 (2 a.m.) 1,460 cfs (4.39 ft); Feb. 1 (3:30 a.m.) 920 cfs (3.32 ft).
* Discharge measurement made on this day.

Mill Creek near Cathlamet, Wash.

Location.--Lat 46°11'40", long. 123°11'25", in NW¼ sec. 9, T. 8 N., R. 4 W., on left bank 50 ft downstream from bridge, three-quarters of a mile upstream from mouth, and 9½ miles east of Cathlamet.

Drainage area.--27.6 sq mi.

Records available.--June 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (by barometer).

Extremes.--Maximum discharge during year, 1,170 cfs Feb. 4 (gage height, 4.39 ft); minimum, 5.2 cfs Sept. 22, 23 (gage height, 1.21 ft).
1949-52: Maximum discharge, 4,460 cfs Feb. 24, 1950 (gage height, 6.23 ft); minimum, 4.6 cfs Aug. 21, 22, 1951 (gage height, 1.19 ft).

Remarks.--Records good. No diversion or regulation.

Rating table, water year 1951-52, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.2	4.8	2.0	52	3.2	335
1.4	10.5	2.3	93	3.5	475
1.6	20	2.6	153	3.9	720
1.8	34	2.9	235	4.3	1,030

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	48	307	114	578	118	139	*51	21	21	8.0	6.5
2	120	45	259	107	492	112	146	47	20	17	8.1	6.2
3	77	70	363	102	565	116	135	45	19.5	15	6.8	6.0
4	46	63	431	96	1,010	128	124	42	*21	14.5	6.2	5.8
5	32	51	492	93	614	122	114	40	21	13.5	6.5	6.0
6	24	48	384	88	436	118	107	40	20	12.5	7.7	6.8
7	20	46	307	84	343	108	98	39	19	11	8.0	8.3
8	18	47	259	81	279	102	93	39	17.5	10.5	7.7	9.9
9	16.5	*52	214	103	247	120	88	37	17.5	10.5	7.1	9.6
10	15	93	183	112	217	250	82	36	19.5	10.5	6.8	8.6
11	17	160	160	108	223	253	78	36	25	9.9	6.5	8.0
12	30	307	146	102	226	229	74	33	26	9.9	6.2	8.9
13	37	388	130	96	194	202	82	34	21	9.9	6.5	8.3
14	47	328	114	95	185	*188	77	38	19.5	9.2	7.1	8.9
15	53	256	112	90	*177	167	67	33	21	8.9	7.7	6.8
16	67	205	116	84	167	148	63	30	21	9.2	8.0	6.5
17	51	172	108	78	158	153	59	28	20	9.2	7.4	6.5
18	56	151	285	78	144	148	58	27	18	9.2	7.1	6.2
19	95	136	256	78	139	132	59	29	16.5	9.6	6.8	6.0
20	170	124	211	100	128	122	54	31	18	9.6	6.2	5.8
21	144	107	356	88	118	112	51	36	19	9.6	6.0	5.8
22	170	96	475	84	112	105	50	29	18	9.9	6.8	5.8
23	371	90	339	88	114	110	48	26	16.5	*12	7.7	*5.5
24	232	84	272	114	110	144	46	25	15.5	11.5	11	5.8
25	153	114	226	116	122	144	45	24	14.5	9.9	13	6.2
26	112	165	197	120	132	137	43	22	14	9.6	12	6.5
27	92	197	170	137	128	130	47	22	16	8.9	9.2	6.2
28	80	307	158	144	124	130	52	22	21	8.6	*8.3	6.0
29	71	328	*183	151	126	139	46	28	19	8.3	7.7	5.8
30	60	286	148	440	-	148	53	24	25	8.3	7.4	5.8
31	54	-	126	519	-	146	-	22	-	8.0	6.8	-
Total	2,560.5	4,564	7,487	3,890	7,608	4,481	2,278	1,015	580.5	335.2	238.3	205.0
Mean	82.6	152	242	125	262	145	75.9	32.7	19.4	10.8	7.69	6.83
Cfsm	2.99	5.51	8.77	4.53	9.49	5.25	2.75	1.18	0.703	0.391	0.279	0.247
In.	3.45	6.15	10.09	5.24	10.25	6.04	3.07	1.37	0.78	0.45	0.32	0.28
Ac-ft	5,080	9,050	14,850	7,720	15,090	8,890	4,520	2,010	1,150	665	473	407

Calendar year 1951: Max 685 Min 5.0 Mean 123 Cfsm 4.46 In. 60.61 Ac-ft 89,230
Water year 1951-52: Max 1,010 Min 5.5 Mean 96.3 Cfsm 3.49 In. 47.49 Ac-ft 69,900

Peak discharge (base, 1,000 cfs).--Feb. 4 (6 a.m.) 1,170 cfs (4.39 ft).
* Discharge measurement made on this day.

Elokomin River near Cathlamet, Wash.

Location.--Lat 46°13'10", long. 123°20'30", in SE¼ sec. 31, T. 9 N., R. 5 W., on right bank 125 ft upstream from railroad bridge, 2 miles northeast of Cathlamet, and 4 miles upstream from mouth.

Drainage area.--65.8 sq mi.

Records available.--October 1940 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 29.60 ft above mean sea level, datum of 1929. Prior to June 25, 1941, staff gage at same site and datum.

Average discharge.--12 years, 360 cfs.

Extremes.--Maximum discharge during year, 4,040 cfs Feb. 4 (gage height, 8.95 ft), from rating curve extended above 1,700 cfs on basis of slope-area determination at gage height 12.66 ft; minimum, 19 cfs Sept. 23 (gage height, 1.81 ft).
1940-52: Maximum discharge, 7,300 cfs Feb. 17, 1949 (gage height, 12.66 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination of peak flow; minimum. 19 cfs Sept. 20-22, 1951, Sept. 23, 1952 (gage height, 1.81 ft).
Maximum stage known, 17.2 ft in December 1933, from information by local residents.

Remarks.--Records good below 300 cfs and fair above. Some diversions for irrigation. No regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Revisions (water years).--W 1154: 1948. W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
2.3	79	4.0	655	1.8	18	3.5	425
2.5	122	5.0	1,190	2.0	40	4.0	630
2.8	197	6.0	1,820	2.2	68	5.0	1,150
3.1	288	8.0	3,280	2.5	125	6.0	1,820
3.5	435			2.8	198	8.1	3,360
				3.1	288		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	192	226	872	385	1,920	328	545	*190	71	80	31	26
2	755	209	785	*354	1,440	304	577	185	70	65	28	25
3	538	302	1,100	322	1,610	328	533	165	68	59	26	25
4	295	256	1,480	298	3,340	380	493	150	*73	56	25	24
5	200	217	1,600	288	1,850	362	465	143	73	54	25	24
6	152	200	1,170	266	1,220	366	433	136	70	50	28	27
7	124	192	894	250	937	338	352	130	64	46	31	31
8	104	*200	730	241	775	321	345	127	60	44	31	34
9	90	192	596	340	675	427	311	119	59	41	28	40
10	81	381	467	358	594	900	291	112	60	41	27	32
11	87	965	443	351	608	805	275	112	73	40	26	28
12	131	1,370	392	308	603	688	256	108	73	40	25	33
13	255	1,270	351	285	517	*608	282	114	64	40	26	31
14	282	1,010	312	275	*509	590	278	125	60	39	26	26
15	353	785	315	259	489	517	247	106	66	34	30	25
16	447	625	347	238	445	473	223	100	65	35	31	24
17	340	515	329	223	404	473	209	94	65	35	28	24
18	366	443	965	232	376	469	201	93	58	35	27	23
19	1,040	385	790	232	355	418	206	93	56	35	27	21
20	1,290	340	625	366	345	386	185	112	56	35	26	21
21	872	295	1,120	308	304	362	172	127	65	37	25	21
22	998	266	1,430	278	295	335	165	106	60	35	28	20
23	1,720	241	976	302	298	362	155	96	54	*39	37	*20
24	1,090	226	770	431	295	497	150	91	52	43	37	21
25	780	291	625	467	362	529	143	87	50	37	46	21
26	587	483	533	542	414	501	141	83	49	33	65	21
27	467	582	471	725	383	453	165	76	52	33	*43	22
28	392	705	455	665	358	445	165	78	62	32	*35	22
29	336	820	675	625	355	533	148	85	64	31	32	21
30	288	765	524	2,680	-	621	175	76	104	31	32	21
31	253	-	435	1,960	-	621	-	73	-	30	30	-
Total	14,905	14,757	22,577	14,854	22,076	14,740	8,276	3,492	1,916	1,285	962	754
Mean	481	492	728	479	761	475	276	113	63.9	41.5	31.0	25.1
Cfsm	7.31	7.48	11.1	7.28	11.6	7.22	4.19	1.72	0.971	0.631	0.471	0.381
In.	8.42	8.34	12.76	8.40	12.48	8.33	4.68	1.97	1.08	0.73	0.54	0.43
Ac-ft	29,560	29,270	44,780	29,460	43,790	29,240	16,420	6,930	3,800	2,550	1,910	1,500

Calendar year 1951: Max 5,400 Min 19 Mean 421 Cfsm 6.40 In. 86.82 Ac-ft 304,700
Water year 1951-52: Max 3,340 Min 20 Mean 329 Cfsm 5.00 In. 68.16 Ac-ft 239,200

Peak discharge (base, 3,600 cfs).--Feb. 4 (4 a.m.) 4,040 cfs (8.95 ft).
* Discharge measurement made on this day.

Big Creek near Knappa, Oreg.

Location.--Lat 46°09'00", long. 123°35'05", in NW¼ sec. 29, T. 8 N., R. 7 W., on left bank 0.3 mile downstream from fish hatchery and 2½ miles south of Knappa.

Drainage area.--31.9 sq mi.

Records available.--August 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (by barometer).

Extremes.--Maximum discharge during year, 1,190 cfs Feb. 4 (gage height, 2.76 ft); minimum, 7.2 cfs Sept. 11.
1949-52: Maximum discharge, 2,130 cfs Feb. 24, 1950 (gage height, 4.01 ft); minimum, that of Sept. 11, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair. Occasional slight regulation from fish hatchery above station. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.2	14	1.2	235
.5	51	1.9	570
.7	87	2.6	1,060

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	77	440	170	732	197	247	132	55	52	26	22
2	134	73	395	158	594	182	267	112	50	45	25	21
3	129	94	570	155	678	204	247	107	50	43	24	21
4	59	92	*642	149	1,000	239	224	100	50	45	24	21
5	41	77	708	152	666	235	218	94	50	42	25	22
6	35	73	802	149	505	232	204	90	50	38	25	23
7	30	73	680	143	415	218	194	87	46	34	25	23
8	27	73	315	140	351	204	179	87	43	33	25	24
9	26	77	263	243	320	232	164	83	43	32	24	24
10	25	140	224	239	291	*490	158	79	45	32	23	22
11	33	365	*204	221	311	465	152	79	60	*32	23	21
12	53	495	185	194	299	390	146	77	60	32	23	24
13	59	435	170	176	267	338	*158	77	55	31	23	22
14	92	360	155	176	267	307	140	87	50	30	24	21
15	104	291	258	176	259	320	134	77	50	30	25	21
16	90	235	170	158	243	251	126	71	45	30	25	21
17	71	204	170	134	232	267	123	65	45	29	24	20
18	88	176	485	155	239	259	118	64	44	29	24	20
19	202	164	375	185	214	239	132	65	42	30	24	20
20	299	152	299	263	204	221	118	81	44	30	23	20
21	251	132	446	*221	188	210	110	73	46	31	*23	20
22	328	123	528	197	185	197	102	65	44	30	23	20
23	490	112	395	207	182	228	100	64	42	30	25	20
24	315	107	315	324	188	356	97	62	40	30	26	20
25	214	167	263	328	200	333	92	61	40	29	32	20
26	170	267	239	342	218	299	92	59	40	27	30	20
27	134	356	218	380	204	263	94	56	42	27	25	20
28	118	480	210	346	197	259	100	*57	44	27	24	20
29	107	485	243	342	207	259	94	60	44	27	23	18
30	92	405	207	825	-	279	146	55	60	26	23	18
31	*81	-	185	*702	-	279	-	55	-	26	23	-
Total	3,932	6,350	10,639	7,750	9,856	8,452	4,476	2,381	1,419	1,009	781	629
Mean	127	212	343	250	340	273	149	76.8	47.3	32.5	24.5	21.0
Cfsm	3.98	6.65	10.8	7.84	10.7	8.56	4.67	2.41	1.48	1.02	0.768	0.658
In.	4.58	7.40	12.40	9.04	11.49	9.85	5.22	2.78	1.65	1.18	0.89	0.73
Ac-ft	7,800	12,600	21,100	15,370	19,550	16,760	8,880	4,720	2,810	2,000	1,510	1,250

Calendar year 1951: Max 1,020 Min 17 Mean 189 Cfsm 5.92 In. 80.53 Ac-ft 137,000
Water year 1951-52: Max 1,000 Min 18 Mean 158 Cfsm 4.95 In. 67.21 Ac-ft 114,400

Peak discharge (base, 900 cfs).--Jan. 30 (10:30 a.m.) 1,130 cfs (2.69 ft); Feb. 4 (6 a.m.) 1,190 cfs (2.76 ft).

* Discharge measurement made on this day.

Note.--No gage-height record May 29 to July 10; discharge estimated on basis of weather records and records for Clatskanie River near Clatskanie and North Fork Klaskanine River near Olney.

West Branch Grays River near Grays River, Wash.

Location.--Lat 46°23'10", long. 123°33'30", on line between sec. 33, T. 11 N., R. 7 W., and sec. 4, T. 10 N., R. 7 W., on right bank 1 mile upstream from mouth and 3¼ miles northeast of Grays River.

Drainage area.--16.3 sq mi.

Records available.--April 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 71 ft (by barometer).

Extremes.--Maximum discharge during year, 2,070 cfs Jan. 30 (gage height, 5.77 ft), from rating curve extended above 370 cfs as explained below; minimum, 7.4 cfs Sept. 30 (gage height, 1.91 ft).

1949-52: Maximum discharge 2,970 cfs Feb. 9, 1951 (gage height, 6.45 ft), from rating curve extended above 370 cfs on basis of slope-area determination at gage height 6.89 ft; minimum, 4.2 cfs Sept. 5, 1951 (gage height, 1.78 ft).

Flood of Feb. 22, 1949, reached a stage of 6.89 ft, from floodmarks (discharge 3,700 cfs, from rating curve extended above 370 cfs on basis of slope-area determination of peak flow).

Remarks.--Records good except those for periods of no gage-height record and shifting control, which are poor. No diversion or regulation. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.8	4.7	3.2	217
2.0	12.5	3.5	317
2.2	27	4.0	540
2.4	49	4.5	830
2.6	78	5.0	1,210
2.9	137	5.5	1,710

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	252	66	317	80	612	87	175	74	24	34	11	13
2	480	60	268	*74	398	80	188	63	23	30	11	12.5
3	340	83	353	70	594	85	185	56	*25	27	10.5	12
4	191	72	500	64	1,100	107	144	49	45	25	10.5	11
5	128	60	700	69	442	109	135	45	55	24	10.5	11
6	96	55	400	64	281	115	119	42	42	22	11	13
7	78	55	250	62	208	106	104	39	35	21	11	13
8	66	*55	200	59	167	94	91	38	31	21	10.5	14
9	57	69	150	108	147	140	82	35	29	19	9.8	15
10	52	162	120	113	128	333	74	33	27	18.5	9.8	13
11	55	274	100	113	133	271	69	32	37	17.5	9.3	11.5
12	66	313	90	100	133	205	63	31	36	17.5	9.3	15.5
13	200	274	80	92	113	*170	70	34	31	17	9.3	13.5
14	162	229	75	89	*111	152	70	60	29	16	10.5	12
15	180	180	70	89	113	135	64	44	30	15.5	15	11
16	183	144	72	80	106	119	59	38	37	15	15	10.5
17	142	117	70	74	96	140	55	34	52	15	13.5	9.8
18	196	100	210	87	87	142	50	33	41	15	11.5	9.3
19	514	89	170	107	82	133	53	32	35	14	11	8.9
20	498	78	140	144	80	124	48	44	35	14	9.8	8.5
21	310	70	250	119	72	115	44	63	41	13.5	9.3	8.5
22	354	63	300	102	72	109	42	52	39	*13.5	23	8.1
23	535	59	240	143	74	142	38	44	35	19	25	8.1
24	365	55	180	325	75	239	37	39	33	22	21	*7.7
25	251	181	140	303	109	220	35	34	30	17	36	7.7
26	183	268	120	329	130	185	33	32	28	14	48	7.7
27	140	292	100	373	111	154	44	29	27	13.5	*30	8.1
28	113	329	95	288	96	147	52	31	27	13	22	8.1
29	100	321	140	270	92	220	49	31	27	12.5	19	7.7
30	83	325	120	1,310	-	251	*89	27	39	12	17	7.4
31	74	-	100	666	-	220	-	25	-	11.5	15	-
Total	6,444	4,498	6,120	5,966	5,962	4,849	2,341	1,263	1,025	559.5	485.1	317.1
Mean	208	150	197	192	206	156	78.0	40.7	34.2	18.0	15.6	10.6
Cfsm	12.8	9.20	12.1	11.8	12.6	9.57	4.79	2.50	2.10	1.10	0.957	0.650
In.	14.70	10.26	13.96	13.61	13.60	11.06	5.34	2.88	2.34	1.28	1.11	0.72
Ac-ft	12,780	9,920	12,140	11,830	11,830	9,620	4,640	2,510	2,030	1,110	962	629

Calendar year 1951: Max 2,190 Min 4.7 Mean 125 Cfsm 7.67 In. 104.17 Ac-ft 90,560
Water year 1951-52: Max 1,310 Min 7.4 Mean 109 Cfsm 6.69 In. 90.86 Ac-ft 79,000

Peak discharge (base, 1,500 cfs).--Jan. 30 (8 a.m.) 2,070 cfs (5.77 ft); Feb. 4 (2 a.m.) 1,690 cfs (5.44 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 5 to Jan. 1; discharge estimated on basis of recorded range in stage and records for stations on nearby streams. Shifting-control method used Oct. 1 to Dec. 4, Jan. 2 to Apr. 23, Sept. 4-30.

Youngs River near Astoria, Oreg.

Location.--Lat 46°04'00", long. 123°47'20", in NW¼ sec. 27, T. 7 N., R. 9 W., on left bank 50 ft upstream from crest of Youngs River Falls, 2½ miles southwest of Olney, and 9 miles southeast of Astoria.

Drainage area.--40.1 sq mi.

Records available.--August 1927 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 63.27 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 12, 1934, at site 1 mile upstream at different datum.

Average discharge.--25 years, 172 cfs.

Extremes.--Maximum discharge during year, 2,460 cfs Feb. 3 (gage height, 10.02 ft); minimum, 4.5 cfs Sept. 24, 25.
1927-52: Maximum discharge, 6,300 cfs Nov. 24, 1927 (gage height, 6.52 ft, site and datum then in use), from rating curve extended above 2,000 cfs; minimum, 3.3 cfs Sept. 22, 1951.

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

Revisions.--W 1218: Drainage area.

Rating tables, water year 1951-52, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 29		Jan. 30 to Sept. 30			
1.5	19	0.5	3.6	3.5	157
2.0	38	1.0	9.4	4.0	232
2.5	65	1.5	19	5.0	450
3.0	103	2.0	34	7.0	1,050
Note.--Same as following table above 3.0 ft.		2.5	62	9.0	1,920
		3.0	103		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	75	777	132	810	150	a240	169	32	38	8.0	6.9
2	261	67	580	117	630	133	a230	135	30	28	7.9	6.6
3	201	95	888	110	904	184	a210	117	28	23	7.6	6.2
4	103	93	1,050	101	1,500	311	a180	102	30	20	7.2	5.9
5	69	75	932	157	726	301	a160	92	28	20	7.0	5.8
6	51	66	588	156	498	291	a150	83	28	17	7.2	6.2
7	39	63	410	138	359	230	a140	77	26	15	7.3	6.6
8	31	60	293	144	281	194	a120	76	24	14	7.4	7.3
9	25	67	220	533	237	222	a110	70	23	13	7.3	7.6
10	23	206	181	532	199	645	a100	61	23	*12	6.9	7.0
11	40	674	161	432	245	562	a95	57	35	12	6.8	6.7
12	105	663	*142	311	291	440	*88	54	40	12	6.8	7.2
13	146	592	124	248	234	a350	99	57	34	12	6.7	7.0
14	218	462	111	236	245	a300	93	79	30	11	6.6	6.6
15	271	348	113	243	246	a250	83	66	29	11	6.8	6.1
16	430	250	135	217	225	a240	75	54	29	10	6.9	5.8
17	146	188	138	173	193	a230	69	48	27	10	6.9	5.7
18	188	152	688	229	169	a220	68	42	25	10	6.8	5.6
19	496	134	500	339	155	a200	90	42	22	10	6.6	5.5
20	603	125	380	624	151	a190	73	56	23	11	*6.2	5.3
21	470	107	735	435	136	a180	64	85	26	11	6.2	5.2
22	676	94	744	*291	131	a170	59	67	26	10	7.5	4.9
23	1,030	86	435	378	136	a240	55	54	23	11	8.1	4.8
24	639	79	297	786	135	a450	54	48	21	12	7.8	4.5
25	428	156	222	630	184	380	51	44	19	11	13	4.5
26	269	395	177	572	209	303	50	40	19	9.7	23	4.9
27	192	560	173	595	177	a280	68	*37	18	9.3	14	5.0
28	151	765	146	465	155	a250	88	36	19	8.6	10	5.2
29	132	717	229	420	160	a250	79	40	20	8.4	8.7	5.2
30	109	583	188	1,210	-	a260	184	35	48	8.4	7.9	4.9
31	*88	-	150	807	-	a260	-	33	-	8.1	7.4	-
Total	7,699	7,997	11,907	11,761	9,721	8,666	3,225	2,056	805	416.5	254.5	176.7
Mean	248	267	384	379	335	280	108	66.3	26.8	13.4	8.21	5.89
Cfsm	6.18	6.66	9.58	9.45	8.35	6.98	2.69	1.65	0.668	0.334	0.205	0.147
In.	7.14	7.42	11.04	10.91	9.02	8.04	2.99	1.91	0.75	0.39	0.24	0.16
Ac-ft	15,270	15,860	23,620	23,330	19,280	17,190	6,400	4,080	1,600	826	505	350

Calendar year 1951: Max 1,480 Min 3.4 Mean 202 Cfsm 5.04 In. 68.28 Ac-ft 146,100
Water year 1951-52: Max 1,500 Min 4.5 Mean 177 Cfsm 4.41 In. 60.01 Ac-ft 128,300

Peak discharge (base, 2,100 cfs).--Feb. 3 (12 p.m.) 2,460 cfs (10.02 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and record for North Klaskanine river near Olney.
Note.--Shifting-control method used Dec. 22 to Jan. 29.

North Fork Klaskanine River near Olney, Oreg.

Location.--Lat 46°04'10", long. 123°41'50", in NE¼ sec. 29, T. 7 N., R. 8 W., on right bank half a mile downstream from Barth Falls, 2 miles upstream from North Fork of North Fork, and 4 miles southeast of Olney.

Drainage area.--14.0 sq mi.

Records available.--August 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 213.40 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 482 cfs Jan. 30 (gage height, 4.23 ft); minimum, 1.9 cfs Sept. 21, 22, 23 (gage height, 1.26 ft).
1949-52: Maximum discharge, 806 cfs Jan. 20, 1950 (gage height, 4.59 ft); minimum, 1.6 cfs Sept. 22, 1951.

Remarks.--Records good except those for period of no gage-height record, which are fair. Records of water temperatures for the water year 1952 are given in Water-Supply Paper 1253.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Oct. 12-19; shifting-control method used Mar. 10-12, 24, 25, Sept. 25-30)

1.1	1.1	1.8	31
1.2	2.3	2.0	53
1.3	4.4	2.5	121
1.4	7.2	3.0	205
1.5	11	4.0	425
1.6	16		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	31	251	56	*239	56	92	57	12	12	4.4	3.1
2	54	28	201	51	189	51	98	45	11	9.0	4.4	2.7
3	60	38	274	48	216	63	84	38	11	8.6	4.0	2.5
4	26	34	*326	45	347	84	76	33	11	9.0	3.8	2.5
5	15	28	307	66	221	91	69	30	11	8.6	4.0	2.7
6	12	26	207	61	160	102	61	27	11	7.6	4.4	3.1
7	9.6	25	150	a60	124	88	54	26	10	6.9	4.4	2.9
8	7.9	24	116	a60	102	79	48	25	9.3	6.6	4.4	3.4
9	6.9	27	95	a120	92	86	43	23	9.3	6.4	4.0	3.8
10	6.9	72	78	a110	78	212	40	21	9.6	*6.4	3.8	3.1
11	11	200	67	a110	87	*209	37	21	15	6.1	3.6	2.7
12	24	253	*61	a100	91	163	*35	21	15	6.1	3.6	3.6
13	27	214	52	a95	80	140	38	20	12	6.1	3.6	3.6
14	49	167	46	a95	80	121	33	23	11	5.8	3.6	2.3
15	65	129	47	a95	78	103	29	20	11	5.8	3.8	2.2
16	49	105	54	a85	74	89	27	17	10	5.8	4.0	2.3
17	34	84	56	a70	69	89	26	16	10	5.8	3.8	2.3
18	62	70	194	a80	62	86	26	15	9.0	5.8	3.6	2.2
19	106	63	148	a90	58	78	32	15	8.6	6.1	3.4	2.2
20	162	61	116	a130	57	72	26	16	9.0	6.4	*3.1	2.0
21	137	48	195	a110	51	66	23	21	10	6.4	2.9	2.0
22	173	42	216	*102	49	60	22	17	9.3	5.8	3.8	1.9
23	257	38	150	120	52	75	21	15	8.6	5.8	4.4	2.0
24	177	36	115	187	53	177	20	14	8.2	5.5	4.0	2.3
25	123	53	93	173	61	163	19	14	7.9	5.2	6.4	2.3
26	92	102	82	163	62	137	19	13	7.9	4.7	6.1	2.5
27	71	167	72	152	57	109	22	*13	8.2	4.7	5.2	2.7
28	58	219	67	147	53	100	24	13	9.0	4.7	4.0	2.5
29	52	221	83	140	63	99	21	14	8.6	4.7	3.8	2.3
30	42	207	70	334	-	105	62	13	16	4.4	3.8	2.3
31	*35	-	61	249	-	103	-	12	-	4.2	3.6	-
Total	2,014.3	2,812	4,050	3,504	3,007	3,256	1,227	668	309.5	197.0	125.7	78.0
Mean	65.0	93.7	131	113	104	105	40.9	21.5	10.3	6.35	4.05	2.60
Cfsm	4.64	6.69	9.36	8.07	7.43	7.50	2.92	1.54	0.736	0.454	0.289	0.186
In.	5.35	7.47	10.76	9.31	7.99	8.65	3.26	1.77	0.82	0.52	0.33	0.21
Ac-ft	4,000	5,580	8,030	6,950	5,960	6,460	2,430	1,320	614	391	249	155

Calendar year 1951: Max 486 Min 1.6 Mean 69.9 Cfsm 4.99 In. 67.75 Ac-ft 50,590
Water year 1951-52: Max 347 Min 1.9 Mean 58.1 Cfsm 4.15 In. 56.44 Ac-ft 42,140

Peak discharge (base, 500 cfs).--No peak above base.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Big Creek near Knappa and Clatskanie River near Clatskanie, Oreg.

NEHALEM RIVER BASIN

Nehalem River near Foss, Oreg.

Location.--Lat 45°42'15", long. 123°45'20", in NW¼ sec. 35, T. 3 N., R. 9 W., on right bank a quarter of a mile upstream from Cook Creek and 2.2 miles northeast of Foss.

Drainage area.--667 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 32.60 ft above mean sea level, datum of 1929 (Oregon State Highway Department benchmark). Prior to Nov. 11, 1939, staff gage at same site and datum.

Average discharge.--13 years, 2,624 cfs.

Extremes.--Maximum discharge during year, 23,700 cfs Feb. 4 (gage height, 14.89 ft); minimum, 62 cfs Sept. 23-30.
1939-52: Maximum discharge, 36,900 cfs Feb. 17, 1949 (gage height, 19.04 ft); minimum, 54 cfs Sept. 22-24, 1951.

Remarks.--Records good. No known diversion or regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.2	48	4.0	1,800
1.4	91	6.0	3,950
1.7	189	8.0	6,950
2.0	325	11.0	13,100
3.0	980	15.0	24,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	489	1,110	11,300	2,940	*18,500	2,540	3,250	1,660	489	364	105	99
2	2,720	988	10,300	2,570	16,300	2,380	3,190	1,530	471	330	102	94
3	2,290	1,060	11,200	2,360	15,400	2,390	3,180	1,340	453	300	99	86
4	1,360	1,120	14,600	2,190	21,900	2,880	3,000	1,220	435	275	94	80
5	838	1,010	*20,000	2,230	16,900	3,000	2,910	1,120	435	266	91	80
6	612	935	18,000	2,180	11,700	3,120	2,800	1,060	424	266	91	80
7	489	860	11,600	2,050	7,930	3,650	2,530	995	413	244	91	80
8	402	823	7,600	1,950	6,040	3,530	2,270	980	396	226	91	84
9	347	823	5,700	2,820	4,920	3,310	2,070	950	380	*205	91	91
10	315	1,490	4,510	3,810	4,210	5,020	1,890	898	369	189	91	94
11	342	4,660	3,780	4,220	3,850	*5,650	1,740	875	408	178	91	94
12	471	7,460	*3,310	3,960	3,900	5,280	*1,650	860	447	170	91	97
13	664	8,270	2,920	3,470	3,630	4,780	1,700	845	435	167	89	97
14	1,140	7,360	2,540	3,100	3,410	4,350	1,740	942	447	159	86	94
15	1,390	5,910	2,320	2,890	3,390	4,120	1,600	905	424	152	86	86
16	1,470	4,680	2,380	2,650	3,290	3,840	1,440	845	413	149	86	82
17	1,230	3,810	2,460	2,450	3,130	3,690	1,350	795	408	145	86	77
18	1,270	3,160	6,750	2,380	2,900	3,880	1,310	746	380	142	86	75
19	2,930	2,710	8,740	2,570	2,690	3,830	1,370	718	347	139	86	73
20	5,300	2,370	7,540	3,540	2,540	3,590	1,270	718	336	139	*86	70
21	4,750	2,030	8,140	3,840	2,310	3,370	1,190	739	325	139	84	68
22	5,840	1,770	11,300	3,520	2,130	3,150	1,110	711	330	142	89	64
23	9,340	1,570	9,630	*3,470	2,030	3,110	1,060	670	325	145	91	62
24	7,610	1,410	7,240	5,650	1,990	4,370	1,010	638	315	149	97	62
25	5,240	1,670	5,560	6,050	2,100	4,840	988	606	305	152	113	62
26	3,660	3,940	4,510	6,240	2,470	4,610	965	566	295	145	136	62
27	2,720	6,240	3,940	6,630	2,650	4,180	972	*547	285	136	149	62
28	2,160	8,560	3,460	6,510	2,660	3,830	995	528	300	126	129	62
29	1,790	10,500	3,660	6,340	2,620	3,540	965	521	310	122	113	62
30	*1,480	9,750	3,880	14,600	-	3,530	1,420	514	325	113	108	62
31	1,270	-	3,480	17,300	-	3,610	-	502	-	108	105	-
Total	71,929	108,049	222,350	136,480	177,490	116,970	52,935	26,544	11,425	5,682	3,033	2,341
Mean	2,320	3,602	7,173	4,403	6,120	3,773	1,764	856	381	183	97.8	78.0
Cfsm	3.48	5.40	10.8	6.60	9.18	5.66	2.64	1.28	0.571	0.274	0.147	0.117
In.	4.01	6.02	12.40	7.61	9.90	6.52	2.95	1.48	0.64	0.32	0.17	0.13
Ac-ft	142,700	214,300	441,000	270,700	352,000	232,000	105,000	52,650	22,660	11,270	6,020	4,640

Calendar year 1951: Max 20,700 Min 54 Mean 3,128 Cfsm 4.69 In. 63.66 Ac-ft 2,264,000
Water year 1951-52: Max 21,900 Min 62 Mean 2,555 Cfsm 3.83 In. 52.15 Ac-ft 1,855,000

Peak discharge (base, 17,000 cfs).--Dec. 5 (3 a.m.) 20,200 cfs (13.75 ft); Feb. 1 (7:30 a.m.) 19,600 cfs (13.52 ft); Feb. 4 (9:30 a.m.) 23,700 cfs (14.89 ft).
* Discharge measurement made on this day.

Wilson River near Tillamook, Oreg.

Location.--Lat 45°29'10", long. 123°43'30", in NW¼ sec. 18, T. 1 S., R. 8 W., on right bank 1 mile upstream from North Fork and 6½ miles east of Tillamook.

Drainage area.--159 sq mi.

Records available.--December 1914 to November 1916 (incomplete), July 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 42.13 ft above mean sea level, datum of 1929. Dec. 18, 1914, to Nov. 4, 1916, staff gage at site three-quarters of a mile downstream at different datum. July 30, 1931, to Sept. 30, 1938, staff gage at site 100 ft downstream at datum 0.93 ft higher.

Average discharge.--21 years (1931-52), 1,213 cfs.

Extremes.--Maximum discharge during year, 13,300 cfs Feb. 4 (gage height, 11.82 ft); minimum, 52 cfs Sept. 23.
1914-16, 1931-52: Maximum discharge, 30,000 cfs Dec. 21, 1933 (gage height, 19.28 ft, site and datum then in use), from rating curve extended above 15,000 cfs; minimum, 48 cfs Sept. 21, 22, 1951.

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

Revisions.--W 1014: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-22		Oct. 23 to Sept. 30			
1.6	370	0.3	45	3.0	1,180
2.0	530	.7	122	4.0	2,000
3.0	1,080	1.3	296	6.0	4,300
4.0	1,910	2.0	590	11.0	11,800
7.0	5,660				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,050	728	5,200	1,190	8,270	938	1,580	772	262	203	90	73
2	4,620	668	3,900	1,050	6,660	854	1,620	728	256	189	86	69
3	2,940	844	4,890	968	7,010	998	1,590	662	246	178	86	69
4	1,500	788	5,930	914	11,500	1,200	1,500	600	246	172	84	67
5	998	784	*7,130	938	6,250	1,130	1,590	550	243	167	76	67
6	695	640	4,500	866	3,830	1,130	1,620	513	236	156	76	73
7	562	610	3,040	810	2,760	1,060	1,370	490	224	149	78	73
8	474	580	2,240	778	2,120	1,030	1,130	486	212	*141	78	90
9	418	590	1,750	1,160	1,760	1,180	998	468	206	134	80	98
10	378	1,330	1,460	1,260	1,510	2,310	914	446	206	134	78	86
11	442	4,060	1,320	1,120	1,510	2,060	*884	446	236	132	78	78
12	518	6,050	1,310	986	1,380	*1,750	832	434	230	129	73	78
13	776	4,310	*1,240	908	1,190	1,560	968	442	212	127	75	73
14	1,180	3,140	1,080	860	1,180	1,460	1,000	555	215	122	76	71
15	1,430	2,370	1,030	832	1,170	1,300	878	495	230	118	80	64
16	1,410	1,820	1,160	750	1,100	1,260	794	454	221	113	82	64
17	1,140	1,490	1,150	690	1,020	1,340	750	438	203	109	80	62
18	1,230	1,280	3,940	766	932	1,450	766	418	197	109	78	60
19	3,230	1,120	3,310	822	890	1,320	844	402	186	107	*76	60
20	4,790	1,010	2,230	1,030	827	1,200	712	426	192	107	76	60
21	3,380	896	3,480	914	766	1,140	630	426	212	107	69	59
22	4,180	805	6,010	832	744	1,090	595	386	203	102	80	57
23	7,730	734	3,490	950	728	1,260	570	359	189	107	73	55
24	4,680	684	2,440	*2,390	717	2,470	555	340	186	118	88	57
25	2,870	946	1,860	2,400	866	2,730	550	325	186	109	113	59
26	2,000	2,720	1,540	2,480	1,170	2,460	545	*314	175	104	134	59
27	1,540	2,770	1,390	3,080	1,180	2,030	570	303	175	102	107	60
28	1,250	3,360	1,240	2,500	1,080	1,850	605	303	186	98	92	60
29	1,050	3,820	1,920	2,360	1,020	1,700	550	300	194	96	82	60
30	*926	3,380	1,680	8,650	-	1,820	673	282	212	94	78	*57
31	822	-	1,380	7,430	-	1,870	-	272	-	90	75	-
Total	60,209	54,227	84,240	52,684	71,140	46,950	28,183	13,835	6,377	3,923	2,577	2,018
Mean	1,942	1,808	2,717	1,699	2,453	1,515	939	446	213	127	83.1	67.3
Cfsm	12.2	11.4	17.1	10.7	15.4	9.53	5.91	2.81	1.34	0.799	0.523	0.423
In.	14.08	12.68	19.70	12.32	16.64	10.98	6.59	3.24	1.49	0.92	0.60	0.47
Ac-ft	119,400	107,600	167,100	104,500	141,100	93,120	55,900	27,440	12,650	7,780	5,110	4,000

Calendar year 1951: Max 8,940 Min 48 Mean 1,357 Cfsm 8.53 In. 11.58 Ac-ft 982,200
Water year 1951-52: Max 11,500 Min 55 Mean 1,165 Cfsm 7.33 In. 99.71 Ac-ft 845,700

Peak discharge (base, 12,000 cfs).--Jan. 30 (2 p.m.) 12,800 cfs (11.54 ft); Feb. 4 (9 a.m.) 13,300 cfs (11.82 ft).
* Discharge measurement made on this day.

Trask River near Tillamook, Oreg.

Location.--Lat 45°26'30", long. 123°43'00", in NW¼ sec. 31, T. 1 S., R. 8 W., on right bank half a mile upstream from Gold Creek and 6 miles east of Tillamook.

Drainage area.--143 sq mi.

Records available.--July 1931 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (by barometer).

Average discharge.--21 years, 980 cfs.

Extremes.--Maximum discharge during year, 8,830 cfs Dec. 4 (gage height, 7.73 ft); minimum, 56 cfs Sept. 22, 23.
1931-52: Maximum discharge, 20,000 cfs Dec. 22, 1933 (gage height, 13.00 ft); minimum, 44 cfs Sept. 22, 1951.
Maximum stage known, about 17 ft, probably occurred during flood of November 1921 or Mar. 31, 1931 (discharge, 30,000 cfs, from rating curve extended above 12,000 cfs).

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

Revisions.--W 1044: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 22 to Mar. 14)

Oct. 1 to Dec. 21				Dec. 22 to Sept. 30			
1.0	220	3.0	1,480	0.4	50	2.0	690
1.5	420	4.0	2,640	.7	117	3.0	1,480
2.0	690	7.0	7,480	1.0	206	4.0	2,640
				1.5	410	8.0	9,340

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	531	575	3,640	1,150	6,140	892	1,330	532	220	187	83	70
2	2,250	531	3,090	1,030	5,610	829	1,320	493	209	168	81	66
3	1,690	630	3,830	952	5,760	1,040	1,220	466	206	156	79	64
4	960	608	5,370	922	7,750	1,330	1,120	430	206	150	77	64
5	654	520	*6,810	938	4,790	1,200	1,120	405	203	147	74	64
6	500	495	3,840	871	3,120	1,190	1,120	385	200	141	72	68
7	406	475	2,540	829	2,270	1,100	1,010	370	193	133	74	72
8	352	455	1,890	796	1,790	1,050	885	370	184	125	74	81
9	310	470	1,480	1,220	1,500	1,140	796	351	177	*122	74	97
10	283	913	1,240	1,300	1,300	2,240	744	338	180	117	72	83
11	384	2,860	1,100	1,180	1,310	2,010	*702	333	206	117	70	74
12	660	4,180	1,020	1,020	1,230	*1,690	678	324	203	117	70	77
13	815	3,320	*938	930	1,060	1,480	750	333	184	117	70	74
14	1,070	2,670	857	878	1,050	1,410	732	390	184	112	70	70
15	1,140	2,030	822	843	1,050	1,250	660	333	190	107	74	66
16	1,100	1,590	845	756	992	1,190	612	311	184	102	77	64
17	885	1,320	922	696	922	1,230	570	303	174	102	74	64
18	871	1,120	3,220	756	871	1,300	570	291	168	102	72	64
19	2,040	984	2,630	815	850	1,230	606	287	159	100	*74	62
20	3,710	892	1,880	1,020	789	1,120	537	338	162	100	72	62
21	2,380	789	3,550	885	732	1,060	498	360	184	100	70	58
22	2,590	714	5,520	822	720	1,010	476	324	177	97	74	58
23	6,030	654	3,220	*938	714	1,170	450	295	162	97	88	56
24	3,530	614	2,270	1,650	726	2,160	440	283	162	102	85	58
25	2,150	750	1,740	1,660	871	2,260	430	272	159	100	114	58
26	1,540	1,440	1,470	1,760	1,080	2,010	420	*258	150	92	125	60
27	1,180	1,580	1,360	2,120	1,090	1,690	420	244	150	90	97	60
28	1,000	1,990	1,200	1,910	1,020	1,530	445	244	162	88	83	60
29	850	2,410	1,860	1,880	960	1,410	425	244	177	85	77	60
30	*744	2,430	1,590	5,660	-	1,510	526	233	206	85	74	60
31	648	-	1,320	5,710	-	1,530	-	226	-	81	72	-
Total	43,253	40,009	73,164	43,917	58,067	43,261	21,612	10,366	5,481	3,539	2,442	1,994
Mean	1,395	1,334	2,360	1,417	2,002	1,396	720	334	183	114	78.8	66.5
Cfsm	9.76	9.33	16.5	9.91	14.0	9.76	5.03	2.34	1.28	0.797	0.551	0.465
In.	11.25	10.41	19.03	11.42	15.10	11.25	5.62	2.70	1.43	0.92	0.64	0.52
Ac-ft	85,790	79,360	145,100	87,110	115,200	85,810	42,870	20,560	10,870	7,020	4,840	3,960

Calendar year 1951: Max 8,480 Min 46 Mean 1,097 Cfsm 7.67 In. 104.19 Ac-ft 794,500
Water year 1951-52: Max 7,750 Min 56 Mean 948 Cfsm 6.63 In. 90.29 Ac-ft 688,500

Peak discharge (base, 9,300 cfs).--No peak above base.
* Discharge measurement made on this day.

Siletz River at Siletz, Oreg.

Location.--Lat 44°42'55", long. 123°53'10", in NW¼SW¼ sec. 11, T. 10 S., R. 10 W., on right bank 1½ miles east of Siletz.

Drainage area.--202 sq mi.

Records available.--November 1905 to May 1912, January 1924 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 102.32 ft above mean sea level, datum of 1929. Prior to May 4, 1912, staff gage, Jan. 3 to Nov. 6, 1924, chain gage, Nov. 7, 1924, to Sept. 5, 1930, staff gage, and Sept. 6, 1930, to Sept. 30, 1938, wire-weight gage, all at sites about 2 miles downstream at different datums.

Average discharge.--32 years (1906-11, 1925-52), 1,598 cfs.

Extremes.--Maximum discharge during year, 19,400 cfs Feb. 3 (gage height, 18.23 ft); minimum, 70 cfs Sept. 30 (gage height, 2.18 ft).

1905-12, 1924-52: Maximum discharge, 37,000 cfs Feb. 17, 1949 (gage height, 25.17 ft), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum observed, 51 cfs Dec. 6, 7, 1929.

Maximum discharge known, 40,800 cfs Nov. 20, 1921 (gage height, 31.6 ft, site and datum then in use), from rating curve extended above 19,000 cfs.

Remarks.--Records excellent. No diversion above station.

Revisions (water years).--W 814: 1935. W 754: 1922 (maximum gage height).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

2.1	63	5.0	1,240
2.4	96	6.0	1,950
2.7	162	8.0	3,700
3.0	255	12.0	8,400
4.0	670	16.0	14,900

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,300	1,060	5,420	2,080	12,100	1,540	2,120	838	304	241	103	85
2	6,510	946	4,230	1,760	10,400	1,370	2,090	760	294	214	101	83
3	5,360	1,060	5,920	1,610	13,000	1,600	1,930	690	283	196	101	81
4	2,800	1,080	7,390	1,740	14,000	1,840	1,740	635	276	187	98	80
5	1,750	892	9,480	1,850	7,450	1,830	1,720	590	272	179	96	81
6	1,260	820	5,740	1,840	4,790	1,710	1,750	561	266	170	93	85
7	988	770	3,970	1,720	3,500	1,580	1,630	534	248	162	*93	86
8	810	735	2,990	1,600	2,720	1,440	*1,420	520	241	157	92	92
9	695	775	2,350	2,390	2,250	1,510	1,260	507	230	152	92	116
10	610	1,580	1,950	3,290	1,970	2,370	1,160	498	234	149	90	101
11	898	3,540	1,670	3,010	1,910	2,330	1,110	525	230	149	90	89
12	1,500	4,740	1,490	2,510	1,810	2,190	1,070	525	234	146	89	88
13	1,840	3,760	1,350	2,130	1,580	2,090	1,220	507	230	144	89	89
14	2,670	3,260	1,220	1,930	1,580	2,120	1,300	*690	269	141	90	83
15	2,830	2,650	1,190	1,810	1,680	2,010	1,170	600	255	136	93	80
16	*2,530	2,190	1,430	1,640	1,580	1,830	1,060	548	224	132	95	79
17	2,000	1,810	1,320	1,440	1,440	1,770	982	530	211	129	90	78
18	1,780	1,570	4,010	1,420	1,360	1,900	988	516	202	129	88	78
19	2,600	1,390	3,980	1,490	1,340	1,840	1,140	494	193	127	86	77
20	4,340	1,320	2,880	2,040	*1,230	1,810	1,010	502	202	125	86	76
21	3,930	1,170	4,510	1,840	1,140	1,780	898	512	234	121	86	76
22	4,240	1,050	9,450	1,700	1,160	1,700	826	460	234	118	88	75
23	10,700	952	5,030	2,560	1,550	1,950	770	428	211	123	101	74
24	7,670	874	3,430	4,260	1,680	*4,600	750	408	205	127	100	*74
25	4,850	1,040	2,590	4,040	1,790	4,270	730	388	196	121	129	73
26	3,350	2,490	2,220	3,610	2,040	3,440	720	368	*184	116	154	72
27	2,490	2,440	2,310	3,460	2,020	2,830	735	356	184	114	112	72
28	1,970	2,670	2,050	2,990	1,860	2,490	815	350	227	109	98	72
29	1,630	*3,080	3,170	2,720	1,710	2,230	735	350	283	107	92	72
30	1,370	3,280	3,090	6,650	-	2,310	838	332	297	107	89	71
31	1,200	-	2,520	10,500	-	2,440	-	318	-	105	88	-
Total	90,471	54,994	110,350	83,630	102,640	66,720	35,687	15,840	7,153	4,433	2,992	2,438
Mean	2,918	1,833	3,560	2,698	3,539	2,152	1,190	511	238	143	96.5	81.3
Cfsm	14.4	9.07	17.6	13.4	17.5	10.7	5.89	2.53	1.18	0.708	0.478	0.402
In.	16.66	10.12	20.32	15.40	18.90	12.28	6.57	2.92	1.32	0.82	0.55	0.45
Ac-ft	179,400	109,100	218,900	165,900	203,600	132,300	70,780	31,420	14,190	8,790	5,930	4,840

Calendar year 1951: Max 14,000 Min 73 Mean 1,781 Cfsm 8.82 In. 119.70 Ac-ft 1,290,000
Water year 1951-52: Max 14,000 Min 71 Mean 1,577 Cfsm 7.81 In. 106.31 Ac-ft 1,145,000

Peak discharge (base, 12,000 cfs).--Oct. 23 (9 a.m.) 12,000 cfs (14.30 ft); Dec. 22 (1 a.m.) 14,100 cfs (15.56 ft); Feb. 1 (7 a.m.) 13,300 cfs (15.06 ft); Feb. 3 (9 p.m.) 19,400 cfs (18.23 ft).

* Discharge measurement made on this day.

Alsea River near Tidewater, Oreg.

Location.--Lat 44°23'10", long. 123°49'50", in NW¼NW¼ sec. 6, T. 14 S., R. 9 W., on right bank three-quarters of a mile downstream from Grass Creek, 2.3 miles upstream from Scott Creek, and 3.8 miles southeast of Tidewater.

Drainage area.--334 sq mi.

Records available.--October 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 48.16 ft above mean sea level, datum of 1929.

Average discharge.--13 years, 1,485 cfs.

Extremes.--Maximum discharge during year, 22,300 cfs Dec. 5 (gage height, 19.12 ft); minimum, 67 cfs Sept. 21 (gage height, 1.37 ft).
1939-52: Maximum discharge, 27,800 cfs Jan. 7, 1948 (gage height, 22.43 ft); minimum, 57 cfs Sept. 22, 23, 1951.
Maximum stage known, 29.5 ft on or about Feb. 3, 1890, from floodmark shown by old resident.

Remarks.--Records good. No regulation; a few small diversions above station for irrigation.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 4				Dec. 5 to Sept. 30			
2.0	187	6.0	2,500	1.3	55	5.0	1,720
2.5	370	9.0	5,440	1.7	132	7.0	3,260
3.0	595	14.0	12,500	2.0	206	9.0	5,400
4.0	1,130			2.5	370	13.0	11,200
				3.0	590	17.0	18,200

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	781	860	9,640	2,950	11,100	2,170	1,900	795	305	382	125	86
2	2,350	784	6,650	2,500	10,700	1,950	1,830	700	302	309	125	83
3	2,090	756	8,160	2,270	13,100	2,090	1,710	658	291	274	125	81
4	1,090	730	12,200	2,660	13,500	2,450	1,580	622	288	252	117	76
5	596	660	18,100	3,150	8,600	2,550	1,510	594	274	237	114	76
6	424	625	9,870	3,350	5,890	2,500	1,440	586	271	223	110	88
7	330	595	6,150	2,940	4,430	2,260	1,320	568	264	212	108	98
8	279	560	4,390	2,640	3,510	2,010	*1,220	554	255	201	*108	102
9	213	600	3,390	4,000	2,890	1,930	1,140	527	249	193	108	125
10	219	1,670	2,730	7,570	2,470	2,480	1,080	504	255	185	112	137
11	432	6,070	2,310	6,310	2,320	2,540	1,020	504	261	183	112	121
12	838	3,260	2,040	4,920	2,340	2,540	979	491	267	183	110	106
13	705	5,860	1,830	3,860	2,130	3,110	1,070	486	288	178	106	100
14	894	5,060	1,630	3,490	2,000	3,400	1,080	*563	295	175	108	94
15	1,200	3,750	1,490	3,540	1,950	3,320	962	509	359	168	117	88
16	938	2,880	1,520	3,330	1,900	2,810	908	464	284	158	121	85
17	730	2,340	1,430	2,760	1,800	2,500	865	437	258	153	117	79
18	680	1,970	4,380	2,460	1,710	2,550	835	414	243	153	112	77
19	1,050	1,750	5,220	2,420	1,780	2,680	896	406	237	155	106	76
20	1,770	1,600	3,640	3,440	1,770	2,880	825	419	234	153	102	74
21	1,800	1,510	3,760	3,250	1,690	2,970	775	419	252	150	100	69
22	2,590	1,370	8,590	3,100	1,750	2,660	740	394	246	148	96	70
23	1,600	1,250	5,430	5,210	2,780	2,580	715	370	240	146	100	*70
24	6,820	1,150	3,890	6,570	3,120	4,940	690	359	252	148	104	69
25	4,020	1,210	3,040	5,990	3,150	4,400	671	352	234	148	112	70
26	2,520	2,840	2,700	4,990	3,480	3,540	653	338	*220	139	119	72
27	1,830	3,170	3,000	4,550	3,160	2,960	635	330	220	137	114	72
28	1,490	4,040	3,050	3,950	2,720	2,580	658	323	258	134	106	74
29	1,270	4,790	4,270	3,550	2,390	2,260	626	327	563	130	98	74
30	1,090	5,120	4,820	5,380	-	2,220	800	323	599	128	92	74
31	965	-	3,710	9,760	-	2,110	-	309	-	125	88	-
Total	49,604	74,830	153,030	126,860	120,130	83,940	31,133	14,645	8,564	5,660	3,392	2,566
Mean	1,600	2,494	4,936	4,092	4,142	2,708	1,038	472	285	183	109	85.5
Cfsm	4.79	7.47	14.8	12.3	12.4	8.11	3.11	1.41	0.853	0.548	0.326	0.256
In.	5.52	8.33	17.04	14.13	13.38	9.35	3.47	1.63	0.95	0.63	0.38	0.29
Ac-ft	98,390	148,400	303,500	251,600	238,300	166,500	61,750	29,050	16,990	11,230	6,730	5,090

Calendar year 1951: Max 18,100 Min 57 Mean 2,056 Cfsm 6.16 In. 83.57 Ac-ft 1,489,000
Water year 1951-52: Max 18,100 Min 69 Mean 1,842 Cfsm 5.51 In. 75.10 Ac-ft 1,338,000

Peak discharge (base, 13,000 cfs).--Dec. 5 (4 a.m.) 22,300 cfs (19.12 ft); Feb. 3 (9:30 p.m.) 17,600 cfs (16.67 ft).
* Discharge measurement made on this day.

Lake Creek at Triangle Lake, Oreg.

Location.--Lat 44°09'40", long. 123°34'10", in SW¼ sec. 20, T. 16 S., R. 7 W., on right bank 500 ft downstream from outlet of Triangle Lake.

Drainage area.--50 sq mi, approximately.

Records available.--August 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 672.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--21 years, 207 cfs.

Extremes.--Maximum discharge during year, 2,220 cfs Feb. 4 (gage height, 6.37 ft); minimum, 6.9 cfs Sept. 30 (gage height, 0.53 ft).

1931-52: Maximum discharge, 4,180 cfs Feb. 18, 1949, from rating curve extended above 2,400 cfs by logarithmic plotting; maximum gage height, 8.68 ft Feb. 18, 1949 (backwater from debris); minimum discharge, 2.7 cfs Aug. 1, 1944; minimum daily, 5.5 cfs Sept. 30 to Oct. 3, 1939.

Remarks.--Records good. No diversion above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 4 to Feb. 4)

0.5	5.9	2.0	185
.7	13	2.5	316
1.0	32	3.0	485
1.2	52	4.0	950
1.5	91	6.0	2,210

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	105	705	517	1,570	398	263	105	38	87	12	10
2	54	*99	790	375	1,870	356	257	105	37	93	12	9.9
3	104	88	800	296	1,900	343	252	101	36	74	12	9.9
4	116	84	981	282	2,120	362	234	91	35	60	11	9.1
5	102	80	1,820	268	1,640	378	219	85	34	50	10	9.1
6	80	76	1,760	276	1,200	359	209	83	*34	44	9.5	9.1
7	67	72	1,180	271	845	337	202	80	33	38	9.5	9.5
8	54	68	*825	250	682	310	190	77	32	36	9.5	10
9	44	67	549	265	545	293	178	74	30	34	9.5	12
10	38	84	405	545	455	307	167	72	30	28	9.9	12
11	39	204	316	745	409	328	157	72	30	24	9.9	13
12	45	553	265	596	388	331	149	69	30	21	9.9	13
13	54	760	229	448	349	337	149	68	30	20	9.1	12
14	60	691	202	381	319	*346	155	68	33	17	9.1	12
15	73	561	178	356	310	359	151	67	36	16	9.1	11
16	84	434	170	307	313	365	137	64	37	15	9.9	11
17	84	337	161	257	307	352	132	63	36	*13	9.9	10
18	80	276	229	226	293	337	*121	59	34	12	9.9	9.9
19	78	239	434	204	296	334	119	57	32	11	9.9	9.5
20	88	216	459	244	284	319	116	57	30	10	10	9.1
21	116	204	385	287	265	325	110	57	30	9.9	10	8.5
22	167	190	474	313	260	334	105	54	30	10	10	8.5
23	322	172	596	448	271	331	101	53	29	11	10	8.1
24	505	159	513	642	322	385	97	51	29	11	11	8.1
25	485	155	395	725	388	455	94	48	28	12	11	8.1
26	368	207	331	*696	493	434	90	43	28	12	11	7.5
27	263	328	340	624	561	385	87	42	28	13	11	7.5
28	199	402	388	557	529	349	85	41	30	13	11	7.2
29	159	478	497	485	459	322	83	40	46	13	*11	7.2
30	135	570	696	565	-	299	94	39	73	12	11	7.2
31	117	-	710	1,000	-	284	-	38	-	12	11	-
Total	4,201	7,959	17,783	13,451	19,643	10,754	4,503	2,023	1,018	831.9	319.6	289.0
Mean	136	265	574	434	677	347	150	65.3	33.9	26.8	10.3	9.63
Cfsm	2.72	5.30	11.5	8.68	13.5	6.94	3.00	1.31	0.678	0.536	0.206	0.193
In.	3.12	5.92	13.23	10.00	14.61	8.00	3.35	1.50	0.76	0.62	0.24	0.21
Ac-ft	8,330	15,790	35,270	26,680	38,960	21,330	8,930	4,010	2,020	1,650	634	573

Calendar year 1951: Max 1,820 Min 8.1 Mean 243 Cfsm 4.86 In. 66.01 Ac-ft 176,000
Water year 1951-52: Max 2,120 Min 7.2 Mean 226 Cfsm 4.52 In. 61.56 Ac-ft 164,200

Peak discharge (base, 1,200 cfs).--Dec. 5 (11 p.m.) 2,100 cfs (6.20 ft); Feb. 4 (10 a.m.) 2,220 cfs (6.37 ft).

* Discharge measurement made on this day.

South Umpqua River at Tiller, Oreg.

Location.--Lat 42°55'50", long. 122°56'50", in NE¼ sec. 33, T. 30 S., R. 2 W., on right bank 0.3 mile upstream from Elk Creek, 0.4 mile downstream from Salt Creek, and 0.4 mile east of Tiller.

Drainage area.--454 sq mi.

Records available.--November 1910 to November 1911, October 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 991.8 ft above mean sea level, datum of 1929 (from river-profile survey). Nov. 9, 1910, to Nov. 30, 1911, staff gage at site 0.2 mile downstream at different datum. Oct. 1 to Nov. 26, 1939, staff gage at present site and datum.

Average discharge.--13 years, 1,003 cfs.

Extremes.--Maximum discharge during year, 13,600 cfs Mar. 24 (gage height, 12.85 ft, referred to outside gage); minimum, 46 cfs Sept. 28-30.
1910-11, 1939-52: Maximum discharge, 37,400 cfs Oct. 29, 1950 (gage height, 22.35 ft, referred to outside gage), from rating curve extended above 12,000 cfs on basis of slope-area determination of peak flow; minimum observed, 20 cfs Sept. 3, 4, 1911.

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

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	40	4.0	1,400
1.4	114	7.0	4,200
2.0	285	10.0	8,380
2.5	485	12.0	11,970
3.0	750		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a90	250	a5,500	2,120	7,450	1,600	2,580	1,390	792	906	126	61
2	a200	223	a4,600	1,680	8,690	1,380	2,430	1,190	734	728	121	60
3	a340	205	a4,200	1,410	5,540	1,270	2,360	1,060	734	629	124	58
4	a240	199	a5,500	1,280	5,090	1,260	2,400	936	744	555	128	58
5	a150	187	a6,000	1,160	4,160	1,190	3,030	876	786	490	138	93
6	a110	171	a4,000	1,090	3,270	1,120	a3,600	882	804	436	128	85
7	a90	160	a3,000	995	2,780	1,070	a3,800	1,010	734	400	114	70
8	a75	153	a2,300	912	2,560	1,030	a3,200	2,110	700	368	110	69
9	*67	146	a1,800	858	2,440	1,140	a2,700	1,750	695	348	108	91
10	61	211	a1,500	1,140	2,280	2,180	a2,500	1,530	624	320	110	112
11	84	1,050	a1,300	1,060	2,360	1,910	a2,300	1,530	565	296	104	89
12	348	4,930	a1,500	918	2,180	1,640	a2,200	1,460	525	278	99	78
13	229	4,450	a1,400	828	1,780	*1,440	a2,700	1,480	*458	254	95	72
14	179	4,540	a1,300	828	1,620	1,280	a2,600	1,400	550	238	93	70
15	956	2,540	a1,200	750	2,300	1,160	a2,200	1,230	580	223	91	67
16	392	1,620	a1,300	673	4,930	1,130	a2,000	1,190	476	*214	89	63
17	238	1,180	*1,380	607	3,230	1,090	a2,300	1,320	436	202	87	63
18	176	943	2,100	580	2,430	1,140	a2,600	1,410	440	193	87	61
19	166	834	2,540	580	1,970	1,140	2,470	1,490	440	187	85	60
20	319	780	1,720	656	1,690	1,050	1,940	1,480	440	179	84	56
21	864	695	1,470	640	1,430	1,030	1,620	1,270	432	171	82	54
22	1,130	590	6,860	618	1,310	1,030	*1,580	1,140	396	166	76	53
23	3,460	510	8,120	634	1,340	1,680	1,610	1,160	490	160	76	51
24	2,490	449	6,150	969	1,480	10,700	1,800	1,250	612	156	74	50
25	1,360	412	3,500	1,290	1,680	6,860	2,020	1,260	580	150	74	50
26	852	404	3,710	1,400	1,880	5,090	2,040	1,210	515	146	74	50
27	585	400	7,460	1,800	2,090	4,280	1,930	1,220	505	140	70	48
28	458	a900	6,680	*1,900	2,090	3,990	1,920	1,260	912	136	70	46
29	388	a1,700	6,060	2,270	1,850	3,220	1,580	1,120	1,260	131	*67	46
30	332	3,610	4,340	3,880	-	2,770	1,410	982	1,210	128	65	46
31	288	-	2,890	5,180	-	3,060	-	912	-	126	63	-
Total	16,714	34,442	111,380	40,706	83,900	69,930	69,420	39,508	19,169	9,054	2,912	1,930
Mean	539	1,148	3,593	1,313	2,893	2,256	2,314	1,274	639	292	93.9	64.3
Cfsm	1.19	2.53	7.91	2.89	6.37	4.97	5.10	2.81	1.41	0.643	0.207	0.142
In.	1.37	2.82	9.12	3.33	6.87	5.73	5.69	3.24	1.57	0.74	0.24	0.16
Ac-ft	33,150	68,310	220,900	80,740	166,400	138,700	137,700	78,360	38,020	17,960	5,780	3,830

Calendar year 1951: Max 10,800 Min 34 Mean 1,278 Cfsm 2.81 In. 38.20 Ac-ft 924,800
Water year 1951-52: Max 10,700 Min 46 Mean 1,364 Cfsm 3.00 In. 40.88 Ac-ft 989,800

Peak discharge (base, 7,000 cfs).--Dec. 23 (8 p.m.) 10,100 cfs (11.00 ft); Dec. 27 (10:30 a.m.) 7,910 cfs (9.71 ft); Feb. 1 (10:30 p.m.) 11,900 cfs (11.97 ft); Mar. 24 (7 a.m.) 13,600 cfs (12.85 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station near Brockway.

Cow Creek near Azalea, Oreg.

Location.--Lat 42°49'30", long. 123°10'40", in sec. 4, T. 32 S., R. 4 W., on right bank 4 miles northeast of Azalea.

Drainage area.--76 sq mi, approximately.

Records available.--April 1926 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,685 ft (by barometer). Prior to July 19, 1949, staff gage at same site and datum.

Average discharge.--22 years (1929-31, 1932-52), 99.3 cfs.

Extremes.--Maximum discharge during year, 2,860 cfs Feb. 1 (gage height, 8.20 ft); minimum, 10 cfs Oct. 8.
1926-52: Maximum discharge, 5,920 cfs Oct. 29, 1950 (gage height, 14.37 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination of peak flow; minimum observed, 4 cfs Sept. 9-19, 1929, Aug. 26-28, 1931, Aug. 21 to Sept. 6, 1934.

Remarks.--Records good. Diversions for irrigation of about 400 acres above station.

Revisions (water years).--W 984: 1933-36. W 1154: 1946(M), 1948(M).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	6	3.0	305
1.7	15	4.0	624
1.8	28	6.0	1,550
2.0	60	7.0	2,140
2.5	163		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	27	1,030	336	1,750	233	314	137	42	50	16	13
2	34	25	389	271	1,460	211	299	124	40	42	16	13
3	37	25	460	233	*812	202	290	115	42	37	16	13
4	20	25	640	208	664	202	305	107	40	36	15	14
5	15	27	524	194	554	186	367	101	40	34	18	18
6	14	27	296	181	460	176	398	101	40	32	18	15
7	13	25	205	163	395	163	389	135	42	31	16	15
8	12	25	163	149	361	151	324	222	38	30	14	15
9	12	25	135	168	336	153	283	149	34	28	15	19
10	12	48	119	333	320	208	268	130	36	27	15	20
11	16	104	121	222	342	192	262	119	36	27	14	16
12	38	339	137	176	302	184	250	107	37	24	14	14
13	23	184	137	158	259	171	274	103	*36	24	14	14
14	19	213	119	161	247	163	296	93	53	23	13	14
15	65	153	107	146	327	*156	241	*88	53	22	13	13
16	34	101	109	130	574	149	224	82	40	*22	13	13
17	23	78	111	121	392	149	224	78	37	22	13	13
18	18	64	208	115	324	168	253	74	36	22	13	12
19	19	65	238	115	277	171	247	71	36	20	12	12
20	23	89	166	166	259	158	202	67	34	20	13	12
21	32	65	146	141	205	166	181	64	37	20	13	12
22	*28	57	*470	130	219	189	*176	60	34	20	13	12
23	188	50	718	149	233	247	176	58	37	19	12	12
24	130	46	684	382	238	1,190	184	53	40	19	12	12
25	73	43	386	330	271	896	186	50	36	18	13	12
26	50	60	1,070	305	293	660	181	48	36	16	12	12
27	40	91	1,700	333	299	550	171	46	36	16	13	12
28	36	293	1,080	355	283	489	161	45	50	15	*13	12
29	31	166	1,200	423	259	414	141	43	86	14	13	13
30	30	544	740	684	-	361	151	42	69	14	14	12
31	28	-	454	841	-	345	-	40	-	14	13	-
Total	1,136	3,084	14,062	7,829	12,715	9,053	7,418	2,752	1,253	758	432	409
Mean	36.6	103	454	253	438	292	247	88.8	41.8	24.5	13.9	13.6
Cfsm	0.482	1.36	5.97	3.33	5.76	3.84	3.25	1.17	0.550	0.332	0.183	0.179
In.	0.56	1.51	6.88	3.83	6.22	4.43	3.63	1.35	0.61	0.37	0.21	0.20
Ac-ft	2,250	6,120	27,890	15,530	25,220	17,960	14,710	5,460	2,490	1,500	857	811

Calendar year 1951: Max 1,700 Min 7.8 Mean 148 Cfsm 1.95 In. 26.47 Ac-ft 107,300
Water year 1951-52: Max 1,750 Min 12 Mean 166 Cfsm 2.18 In. 29.80 Ac-ft 120,800

Peak discharge (base, 800 cfs).--Dec. 1 (7 a.m.) 1,910 cfs (6.62 ft); Dec. 4 (7 p.m.) 891 cfs (4.67 ft); Dec. 23 (11 p.m.) 1,140 cfs (5.20 ft); Dec. 26 (9 p.m.) 2,390 cfs (7.42 ft); Dec. 29 (3:30 p.m.) 1,580 cfs (6.06 ft); Feb. 1 (9 p.m.) 2,860 cfs (8.20 ft); Feb. 16 (1 a.m.) 816 cfs (4.49 ft); Mar. 24 (8 a.m.) 1,540 cfs (5.98 ft).
* Discharge measurement made on this day.

South Umpqua River near Brockway, Oreg.

Location.--Lat 43°08'00", long. 123°23'50", in SW¼ sec. 15, T. 28 S., R. 6 W., on downstream side of right pier of Winston Bridge on U. S. Highway 99, 2½ miles northeast of Brockway, and 4 miles downstream from Lookingglass Creek.

Drainage area.--1,640 sq mi, approximately.

Records available.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 461.84 ft above mean sea level, datum of 1929 (Oregon State Highway benchmark). Prior to June 23, 1949, staff, chain, and wire-weight gages at several sites within 400 ft of present site at various datums.

Average discharge.--18 years (1906-11, 1923-26, 1942-52), 2,675.

Extremes.--Maximum discharge during year, 38,500 cfs Feb. 2 (gage height, 19.09 ft); minimum, 101 cfs Sept. 4.

1905-12, 1923-26, 1942-52: Maximum discharge, 102,000 cfs (revised) Oct. 29, 1950 (gage height, 32.4 ft), from rating curve extended above 76,000 cfs on basis of slope-conveyance study; minimum observed, 36 cfs Aug. 12, 13, 1926.

Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum. Flood in February 1890 reached a stage 1.9 ft higher, according to local resident who lived nearby at the time of both floods.

Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede figures published in the water-supply papers indicated.

Water-Supply Paper	Water year	Date	Discharge (cfs)	Gage height (feet)
1184.....	1946	Dec. 29, 1945	67,700	28.2
1137E, 1184.	1948	Jan. 7, 1948	71,400	29.0
1137E, 1218.	1951	Oct. 29, 1950	102,000	32.4

Remarks.--Records good. Many small diversions above station for irrigation. No regulation.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1951, superseding those published in Water-Supply Paper 1218, are given herewith:

1950	
Nov. 16.....	30,400
17.....	22,100
18.....	36,400
19.....	27,000
20.....	14,100
21.....	10,300

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
November 1950.....	238,340	36,400	1,470	7,945	4.84	5.41	472,700
Calendar year 1950.....	-	90,200	81	4,382	2.67	36.29	3,173,000
Water year 1950-51.....	-	90,200	63	4,258	2.60	35.24	3,083,000

Revised peak discharge.--Oct. 29 (9 p.m.) 102,000 cfs (32.4 ft); Nov. 16 (12 m.) 43,900 cfs (20.57 ft); Nov. 18 (6:30 p.m.) 45,700 cfs (21.06 ft); Dec. 4 (6 a.m.) 41,800 cfs (20.02 ft); Dec. 7 (12 m.) 25,000 cfs (15.18 ft); Jan. 18 (1 a.m.) 54,200 cfs (23.18 ft); Jan. 21 (11 p.m.) 33,100 cfs (17.58 ft); Jan. 24 (5 a.m.) 34,700 cfs (18.03 ft); Feb. 5 (9 a.m.) 32,300 cfs (17.34 ft); Feb. 12 (5 a.m.) 16,300 cfs (12.59 ft).

South Umpqua River near Brockway, Oreg.--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

3.1	95	7.0	2,800
3.5	170	9.0	6,400
4.0	325	13.0	17,600
5.0	800	18.0	34,600
6.0	1,600		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	610	18,700	9,080	21,600	4,900	6,260	2,530	1,250	1,830	191	113
2	191	544	13,400	6,680	33,900	4,200	5,580	2,270	1,130	1,390	186	112
3	512	494	10,500	5,500	20,700	3,720	5,400	*2,010	1,070	1,140	188	107
4	800	458	16,500	5,180	16,100	3,700	5,080	1,830	1,050	982	178	104
5	504	441	22,500	4,820	13,400	3,560	5,700	1,680	1,040	870	170	112
6	337	425	13,500	5,220	10,400	3,320	6,600	1,630	1,090	764	170	133
7	253	401	8,300	5,100	8,550	3,150	6,680	1,750	1,090	692	180	163
8	213	373	5,860	4,620	7,300	2,910	5,840	2,830	1,020	630	163	145
9	191	361	4,500	4,020	6,580	2,830	4,760	3,350	982	580	152	145
10	173	405	3,590	10,900	6,000	3,990	4,170	2,780	968	530	154	158
11	180	1,380	3,220	10,300	5,820	4,920	3,970	2,510	919	481	154	208
12	259	10,300	3,540	7,300	5,820	4,520	3,780	2,410	*884	454	147	202
13	620	12,400	3,880	5,660	4,960	*4,170	3,760	2,320	807	433	141	173
14	499	9,600	3,440	6,040	4,360	3,810	4,580	2,270	788	401	135	161
15	849	6,740	2,930	5,680	4,540	3,490	4,110	2,080	1,020	*377	131	152
16	1,360	4,270	2,630	4,640	11,800	3,190	3,510	1,890	912	349	133	147
17	734	3,040	*3,020	3,810	11,000	3,020	3,300	1,880	770	333	131	141
18	522	2,330	3,270	3,360	8,500	3,540	3,640	1,980	710	311	133	131
19	421	1,900	7,180	3,190	6,950	4,420	4,150	2,070	692	296	137	127
20	389	1,790	5,640	5,060	6,300	4,520	3,750	2,130	675	293	131	124
21	746	1,690	4,500	5,740	5,540	4,560	3,120	1,980	698	282	129	120
22	*1,200	1,470	*11,700	5,300	4,940	4,600	2,840	1,760	686	272	127	117
23	3,980	1,280	23,600	5,400	5,140	4,920	2,790	1,640	655	259	125	113
24	8,820	1,140	27,900	8,820	5,660	20,000	2,860	1,680	770	256	124	110
25	4,270	1,020	14,000	10,800	6,220	22,700	3,110	1,750	877	247	124	107
26	2,410	1,080	12,300	9,180	6,700	16,300	3,220	1,720	842	237	125	106
27	1,610	2,000	27,300	9,650	6,640	12,700	3,120	1,640	776	234	124	104
28	1,200	5,260	25,400	*9,300	6,260	10,600	3,040	1,680	877	225	*122	106
29	954	5,860	27,200	9,550	5,580	8,750	2,830	1,630	1,880	216	120	106
30	794	14,900	24,700	12,000	-	7,120	2,480	1,450	2,520	202	118	106
31	680	-	13,600	18,600	-	6,800	-	1,340	-	196	115	-
Total	35,796	93,962	368,300	220,500	267,260	194,930	124,030	62,450	29,448	15,762	4,458	3,953
Mean	1,155	3,132	11,880	7,113	9,216	6,288	4,134	2,015	982	508	144	132
Cfsm	0.704	1.91	7.24	4.34	5.62	3.83	2.52	1.23	0.599	0.310	0.088	0.080
In.	0.81	2.13	8.35	5.00	6.06	4.42	2.81	1.42	0.67	0.36	0.10	0.09
Ac-ft	71,000	186,400	730,500	437,400	530,100	386,600	246,000	123,900	58,410	31,260	8,840	7,840

Calendar year 1951: Max 34,900 Min 63 Mean 3,800 Cfsm 2.32 In. 31.44 Ac-ft 2,751,000
Water year 1951-52: Max 33,900 Min 104 Mean 3,882 Cfsm 2.37 In. 32.22 Ac-ft 2,818,000

Peak discharge (base, 15,000 cfs).--Dec. 1 (3:30 p.m.) 22,200 cfs (14.36 ft); Dec. 5 (11 a.m.) 25,000 cfs (15.18 ft); Dec. 24 (2 a.m.) 34,400 cfs (17.95 ft); Dec. 30 (12:30 a.m.) 31,700 cfs (17.14 ft); Feb. 2 (8 a.m.) 38,500 cfs (19.09 ft); Mar. 24 (4:30 p.m.) 29,800 cfs (16.59 ft).
* Discharge measurement made on this day.

Lake Creek at Diamond Lake, near Fort Klamath, Oreg.

Location.--Lat 43°11'10", long. 122°09'50", in SW¼ sec. 30, T. 27 S., R. 6 E., on right bank 260 ft downstream from outlet of Diamond Lake and 35 miles north of Fort Klamath.

Drainage area.--57 sq mi, approximately.

Records available.--May 1922 to September 1925 (incomplete), October 1926 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 5,180 ft (from river-profile map). Prior to May 26, 1931, staff gage at site 300 ft downstream at different datum. May 26, 1931, to Oct. 6, 1933, staff gage at present site and datum.

Average discharge.--25 years (1926-29, 1930-52), 52.8 cfs.

Extremes.--Maximum discharge during year, 156 cfs Dec. 5 (gage height, 1.71 ft); minimum, 6 cfs May 23; minimum daily, 39 cfs Sept. 23, 24, 29, 30.
1922-25, 1926-52: Maximum discharge observed, 336 cfs Jan. 1, 1943 (gage height, 2.8 ft), from rating curve extended above 120 cfs; no flow Aug. 25-27, 1931.

Remarks.--Records fair. Flow regulated by gates and fish racks at lake outlet, and at times affected by collection of moss on racks. No diversion above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris June 7 to July 4)

1.0	30
1.3	70
1.7	165

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	89	104	107	*98	89	*78	81	109	111	53	44
2	100	87	104	104	102	87	80	81	109	109	53	44
3	102	85	111	102	102	87	81	83	109	107	53	44
4	100	83	134	102	102	87	81	83	102	104	56	44
5	100	85	145	100	102	87	80	85	104	87	54	48
6	98	83	121	98	102	85	80	87	104	80	54	46
7	96	80	116	98	102	85	80	89	112	78	53	46
8	93	80	114	98	100	85	80	93	131	76	51	46
9	93	80	114	96	100	83	81	93	*134	74	51	48
10	89	83	109	102	100	83	81	93	136	76	50	48
11	89	89	107	102	98	83	81	96	136	72	50	48
12	89	93	a102	102	98	83	81	98	134	70	49	46
13	89	93	a98	102	98	81	81	102	131	67	49	46
14	89	93	a96	102	98	81	80	98	128	67	49	46
15	93	93	a95	102	96	81	80	104	128	65	a48	45
16	91	93	a96	102	96	83	80	107	126	65	a48	45
17	91	91	a95	102	96	85	78	109	126	64	a48	44
18	87	89	a100	100	96	85	78	107	124	62	a47	44
19	87	85	a105	100	96	87	78	96	121	60	a47	45
20	89	83	a100	100	96	87	78	96	121	60	a47	45
21	89	83	a100	100	93	89	76	89	118	60	a47	46
22	89	83	a105	102	93	89	74	91	118	60	a46	45
23	96	81	a105	100	93	89	74	89	118	59	a46	39
24	98	81	a105	a100	93	89	74	87	118	56	a46	39
25	96	81	102	a100	96	89	74	93	118	56	a45	40
26	96	85	102	a98	93	89	74	93	116	56	a45	40
27	93	87	104	98	91	89	76	85	114	54	a45	*40
28	91	93	107	96	91	87	76	104	116	54	a45	40
29	*89	96	111	91	89	83	80	107	111	*56	44	39
30	89	100	114	91	-	81	81	91	111	54	44	39
31	89	-	111	93	-	80	-	98	-	53	44	-
Total	2,876	2,607	3,332	3,090	2,810	2,648	2,356	2,908	3,583	2,172	1,507	1,319
Mean	92.8	86.9	107	99.7	96.9	85.4	78.5	93.8	119	70.1	48.6	44.0
Cfsm	1.63	1.52	1.88	1.75	1.70	1.50	1.38	1.65	2.09	1.23	0.853	0.772
In.	1.88	1.70	2.17	2.02	1.83	1.73	1.54	1.90	2.34	1.42	0.98	0.86
Ac-ft	5,700	5,170	6,610	6,130	5,570	5,250	4,670	5,770	7,110	4,310	2,990	2,620

Calendar year 1951: Max 145 Min 31 Mean 85.0 Cfsm 1.49 In. 20.25 Ac-ft 61,560
Water year 1951-52: Max 145 Min 39 Mean 85.3 Cfsm 1.50 In. 20.37 Ac-ft 61,900

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and records for North Umpqua River below Lake Creek and Clearwater River above Trap Creek.

North Umpqua River below Lake Creek, Oreg.

Location.--Lat 43°19', long. 122°11', in NW¼ sec. 13, T. 26 S., R. 5 E., on right bank 600 ft downstream from Lake Creek and 30 miles southwest of Crescent.

Drainage area.--175 sq mi.

Records available.--October 1927 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 4,090 ft (from river-profile map).

Average discharge.--24 years (1927-45, 1946-52), 389 cfs.

Extremes.--Maximum discharge during year, 1,080 cfs May 28, 29 (gage height, 2.33 ft); minimum, 363 cfs Mar. 22.
1927-52: Maximum discharge, 1,190 cfs June 9, 1933 (gage height, 2.34 ft), from rating curve extended above 700 cfs; minimum, 206 cfs Dec. 9, 1931.

Remarks.--Records good. Flow slightly regulated by Diamond Lake.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 25 to July 4)

1.0	351
1.5	565
2.0	895
2.2	1,080

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	484	462	470	430	*446	402	422	696	931	642	488	438
2	520	462	450	410	450	402	426	676	895	632	484	438
3	510	462	450	426	446	402	426	659	895	626	484	438
4	492	462	446	450	446	402	430	648	886	632	484	446
5	484	458	450	446	442	402	438	637	913	615	479	446
6	479	454	450	434	434	398	450	642	958	585	479	442
7	474	450	422	430	430	394	466	664	931	580	474	438
8	474	450	442	430	426	394	470	696	949	575	470	442
9	470	450	442	430	426	394	466	696	*949	570	470	450
10	466	470	450	430	422	398	466	716	913	570	470	442
11	474	479	450	434	422	394	470	742	861	565	470	438
12	479	484	446	426	418	394	470	795	818	560	466	434
13	470	466	442	426	414	390	484	870	772	555	466	430
14	488	466	438	434	418	390	488	886	750	545	466	426
15	497	462	434	434	422	386	484	870	716	540	462	426
16	474	458	434	426	422	386	488	878	696	535	462	426
17	466	454	434	406	418	386	497	913	690	525	462	426
18	466	450	438	422	418	390	520	922	690	520	458	426
19	470	450	442	430	422	394	540	949	690	515	454	426
20	484	446	*442	426	422	394	550	949	696	510	454	422
21	474	446	438	426	410	390	560	931	690	510	454	422
22	484	442	450	430	422	390	575	904	683	506	454	422
23	520	438	442	430	418	398	585	922	728	502	454	418
24	497	434	434	434	414	450	610	949	722	492	454	418
25	484	438	422	430	410	446	648	994	690	492	450	418
26	479	446	446	430	406	442	683	985	676	488	446	*418
27	474	450	454	422	406	434	709	994	676	488	446	418
28	470	454	450	422	406	430	728	1,040	676	488	442	418
29	*470	454	446	422	406	426	716	1,040	664	*488	442	414
30	470	462	446	426	-	426	722	985	654	488	442	414
31	466	-	442	430	-	*426	-	958	-	488	442	-
Total	14,909	13,659	13,742	13,282	12,262	12,550	15,987	26,206	23,458	16,827	14,328	12,880
Mean	481	455	443	428	423	405	533	845	782	543	462	429
Cfsm	2.75	2.60	2.53	2.45	2.42	2.31	3.05	4.83	4.47	3.10	2.64	2.45
In.	3.17	2.90	2.92	2.82	2.61	2.67	3.40	5.57	4.99	3.58	3.04	2.74
Ac-ft	29,570	27,090	27,260	26,340	24,329	24,890	31,710	51,980	46,530	33,380	28,420	25,550

Calendar year 1951: Max 750 Min 410 Mean 515 Cfsm 2.94 In. 39.96 Ac-ft 372,900
Water year 1951-52: Max 1,040 Min 386 Mean 519 Cfsm 2.97 In. 40.41 Ac-ft 377,000

* Discharge measurement made on this day.

North Umpqua River above Clearwater River, Oreg.

Location.--Lat 43°17', long. 122°24', in NE¼ sec. 25, T. 26 S., R. 3 E., on right bank 2 miles upstream from Clearwater River.

Drainage area.--258 sq mi.

Records available.--September 1948 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,457.51 ft above mean sea level (levels by California Oregon Power Co.).

Extremes.--Maximum discharge during year, 1,690 cfs May 29 (gage height, 3.69 ft); minimum, 562 cfs Sept. 23, 24, 30.
1948-52: Maximum discharge, 2,590 cfs Dec. 7, 1950 (gage height, 4.57 ft), from rating curve extended above 1,100 cfs by logarithmic plotting; minimum daily, 470 cfs Nov. 22, 1949, Jan. 3, 1950.

Remarks.--Records good. No diversion above station. Flow slightly regulated by Diamond Lake.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 23		Mar. 24 to Sept. 30	
2.3	520	2.3	510
2.7	845	3.0	1,080
3.2	1,290	3.7	1,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	672	624	1,270	786	993	704	888	1,370	1,460	1,060	724	622
2	760	616	1,050	736	*1,130	696	888	1,300	1,430	1,040	724	622
3	752	608	975	736	1,060	696	888	1,240	1,420	1,030	724	615
4	664	608	948	752	1,090	688	922	1,190	1,430	1,020	724	630
5	640	*600	896	736	1,050	680	1,060	1,170	1,480	1,010	716	645
6	632	600	854	720	957	672	1,220	1,160	1,510	956	708	622
7	624	592	760	704	913	664	1,320	1,190	1,480	930	700	622
8	616	584	777	696	870	656	1,240	1,300	1,480	914	700	630
9	608	584	752	696	862	672	1,150	1,290	1,460	905	700	652
10	600	632	760	696	845	696	1,130	1,300	1,400	896	700	630
11	632	720	760	688	854	680	1,130	1,370	*1,320	880	684	615
12	648	896	760	672	836	672	1,100	1,420	1,250	862	668	615
13	616	820	760	672	811	664	1,140	1,560	1,190	846	668	608
14	672	845	744	680	802	656	1,180	1,550	1,160	837	668	600
15	736	760	728	672	828	648	1,130	1,480	1,110	828	668	600
16	640	712	728	664	862	640	1,100	1,480	1,090	820	660	592
17	624	688	720	632	836	640	1,130	1,550	1,090	804	660	592
18	616	680	752	648	820	648	1,280	1,600	1,100	804	660	592
19	624	672	*744	664	802	640	1,360	1,660	1,110	804	660	585
20	696	672	728	656	777	632	1,270	1,640	1,120	796	652	585
21	680	664	736	656	744	624	1,200	1,580	1,100	788	652	585
22	744	656	913	664	744	616	1,210	1,550	1,090	788	645	585
23	922	640	888	656	736	656	1,260	1,560	1,190	780	645	578
24	794	632	820	656	720	1,020	1,320	1,590	1,190	772	652	570
25	744	632	768	648	712	1,080	1,450	1,630	1,130	756	652	*570
26	696	672	794	648	704	*1,070	1,540	1,630	1,090	756	645	570
27	672	744	870	648	704	1,040	1,550	1,650	1,100	748	638	570
28	664	879	930	640	712	1,050	1,580	1,680	1,110	748	630	570
29	656	896	904	648	712	1,010	1,480	1,650	1,130	748	630	570
30	640	1,130	854	712	-	964	*1,430	1,580	1,090	*740	630	562
31	632	-	828	820	-	939	-	1,530	-	748	622	-
Total	20,916	21,058	25,771	21,302	24,486	23,413	36,546	45,450	37,310	26,414	20,809	18,004
Mean	675	702	831	687	844	755	1,218	1,466	1,244	852	671	600
Cfsm	2.62	2.72	3.22	2.66	3.27	2.93	4.72	5.68	4.82	3.30	2.60	2.33
In.	3.01	3.04	3.71	3.07	3.53	3.37	5.27	6.55	5.38	3.81	3.00	2.60
Ac-ft	41,490	41,770	51,120	42,250	48,570	46,440	72,490	90,150	74,000	52,390	41,270	35,710

Calendar year 1951: Max 2,000 Min 544 Mean 869 Cfsm 3.37 In. 45.73 Ac-ft 629,500
Water year 1951-52: Max 1,680 Min 562 Mean 878 Cfsm 3.40 In. 46.34 Ac-ft 637,600

* Discharge measurement made on this day.

Clearwater River above Trap Creek, Oreg.

Location.--Lat 43°15', long. 122°17', in SE¼ sec. 1, T. 27 S., R. 4 E., on right bank 450 ft upstream from Trap Creek and 40 miles east of Glide.

Drainage area.--41.6 sq mi.

Records available.--October 1927 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 3,760 ft (from river-profile map). Prior to Sept. 10, 1939, water-stage recorder at site 25 ft downstream at different datum.

Average discharge.--23 years (1928-45, 1946-52), 155 cfs.

Extremes.--Maximum discharge during year, 366 cfs May 27, 28, 29 (gage height, 1.92 ft); minimum, 176 cfs Sept. 17.
1927-52: Maximum discharge, 487 cfs Oct. 29, 1950 (gage height, 2.28 ft), from rating curve extended above 290 cfs by logarithmic plotting; maximum gage height, 2.40 ft Jan. 7, 1948 (backwater from log); minimum discharge, 91 cfs 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.

Revisions.--W 1124: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 26		Apr. 27 to Sept. 30	
1.0	163	1.1	174
1.3	222	1.5	256
1.7	315	2.0	390

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	a185	256	192	196	184	194	*296	319	243	204	183
2	204	a185	231	192	196	184	194	285	316	241	202	183
3	196	a180	222	192	194	184	194	275	316	245	200	183
4	186	a180	218	192	194	184	194	270	316	247	200	183
5	184	*182	211	190	192	184	200	263	327	245	198	187
6	182	182	207	190	192	184	209	263	332	236	198	183
7	182	180	204	190	190	184	222	268	319	234	198	183
8	180	180	202	188	190	184	226	278	319	234	198	183
9	180	182	198	190	190	184	229	270	316	241	196	187
10	178	192	198	190	190	184	229	273	*301	243	196	183
11	184	196	198	190	192	182	231	283	285	236	196	183
12	186	207	196	188	190	182	231	290	273	230	196	183
13	184	196	196	188	188	182	235	322	261	225	194	183
14	194	200	196	190	190	182	240	319	261	225	194	181
15	202	192	196	188	192	182	237	309	252	221	192	181
16	186	188	196	186	192	182	235	309	247	216	192	183
17	184	188	194	186	192	182	240	322	252	214	192	181
18	a185	188	196	186	190	180	251	332	258	212	190	181
19	a185	188	194	186	192	180	260	346	263	208	190	181
20	a200	190	*192	186	190	178	258	349	263	208	190	181
21	a190	188	194	184	188	178	260	335	261	208	188	179
22	a200	186	200	184	188	178	260	329	256	206	188	179
23	a230	186	196	182	188	182	262	332	280	204	187	178
24	a205	186	194	184	186	198	272	343	278	204	187	178
25	a195	188	194	182	186	194	283	349	261	204	185	178
26	a185	192	196	182	186	*194	295	349	254	204	185	*178
27	a185	194	198	182	184	194	301	357	256	204	185	178
28	a185	200	196	182	184	196	303	363	263	204	185	178
29	a185	207	196	182	184	196	293	357	261	*204	183	178
30	a185	235	194	184	-	198	301	343	249	206	183	178
31	a185	-	192	*186	-	194	-	335	-	206	183	-
Total	5,880	5,723	6,251	5,794	5,506	5,754	7,339	9,714	8,415	6,858	5,955	5,438
Mean	190	191	202	187	190	186	245	313	280	221	192	181
Cfsm	4.57	4.59	4.86	4.50	4.57	4.47	5.89	7.52	6.73	5.31	4.62	4.35
In.	5.26	5.12	5.59	5.18	4.92	5.14	6.56	8.68	7.52	6.13	5.32	4.86
Ac-ft	11,660	11,350	12,400	11,490	10,920	11,410	14,560	19,270	16,690	13,600	11,810	10,790

Calendar year 1951: Max 302 Min 178 Mean 216 Cfsm 5.19 In. 70.39 Ac-ft 156,200
Water year 1951-52: Max 363 Min 178 Mean 215 Cfsm 5.17 In. 70.28 Ac-ft 156,000

Peak discharge (base, 220 cfs).--Oct. 23 (time unknown) 249 cfs (1.42 ft); Dec. 1 (6 a.m.) 281 cfs (1.56 ft); May 27, 28, 29 (several hours each day) 366 cfs (1.92 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for Clearwater River at mouth and North Umpqua River below Lake Creek.

Clearwater River at mouth, Oreg.

Location.--Lat 43°15'50", long. 122°25'00", in SE¼ sec. 35, T. 26 S., R. 3 E., on left bank a quarter of a mile upstream from mouth and 3 miles northeast of Big Camas ranger station.

Drainage area.--75 sq mi, approximately.

Records available.--October 1947 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,437.5 ft above mean sea level (levels by California Oregon Power Co.). Prior to Oct. 13, 1948, staff gage at same site and datum.

Average discharge.--5 years, 350 cfs.

Extremes.--Maximum discharge during year, 760 cfs Apr. 28 (gage height, 3.96 ft); minimum, 265 cfs Sept. 17.
1947-52: Maximum discharge, 1,340 cfs Jan. 7, 1948 (gage height, 4.96 ft); minimum, 224 cfs Jan. 3, 1950.

Remarks.--Records good. No diversion or artificial regulation. Large springs above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Aug. 15 to Sept. 30)

2.5	250
3.0	385
3.5	555
4.0	780

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	275	527	352	415	337	415	671	548	391	300	275
2	308	272	460	346	457	334	412	*627	534	86	298	275
3	300	272	436	343	426	334	409	603	527	388	298	272
4	282	272	426	337	426	331	422	587	527	391	295	278
5	278	272	406	334	422	325	474	544	530	382	295	280
6	275	272	379	331	406	325	530	538	544	373	292	275
7	275	270	361	325	394	320	579	541	527	364	292	272
8	275	270	355	322	391	320	559	587	516	364	290	278
9	272	272	349	320	385	320	534	575	513	367	290	285
10	272	290	346	320	382	328	527	579	*492	364	290	278
11	282	305	349	318	388	322	524	599	471	361	288	275
12	285	340	352	315	379	320	520	611	443	352	288	272
13	280	320	352	312	367	318	538	666	426	346	288	270
14	290	346	346	318	364	318	548	662	426	343	288	270
15	312	320	343	315	364	315	534	635	406	340	284	270
16	288	310	340	310	376	312	524	627	400	331	285	268
17	282	302	334	308	373	312	534	644	397	328	285	268
18	282	300	343	308	367	315	591	666	403	322	282	268
19	282	300	*334	308	364	310	635	695	403	320	282	268
20	305	300	331	308	358	305	603	690	406	318	282	268
21	295	298	331	308	349	302	583	653	403	318	282	268
22	302	292	376	308	346	302	583	627	397	315	282	268
23	346	290	373	308	346	315	591	619	440	315	280	268
24	308	288	352	308	340	457	623	635	440	310	280	268
25	292	290	343	305	337	468	666	644	415	308	280	*268
26	285	298	349	305	337	464	700	635	400	305	280	268
27	280	308	379	305	340	*457	725	640	406	305	280	268
28	278	346	400	305	340	471	745	653	412	305	278	268
29	278	349	397	312	340	454	695	631	418	302	278	268
30	*275	432	379	*337	-	436	690	603	403	*305	275	268
31	275	-	364	361	-	429	-	579	-	302	275	-
Total	8,921	9,071	11,512	9,912	10,879	10,976	17,013	19,246	13,573	10,523	8,862	8,145
Mean	288	302	371	320	375	354	567	621	452	339	286	272
Cfsm	3.84	4.03	4.95	4.27	5.00	4.72	7.56	8.28	6.03	4.52	3.81	3.63
In.	4.42	4.50	5.71	4.92	5.39	5.44	8.44	9.54	6.73	5.22	4.39	4.04
Ac-ft	17,690	17,990	22,830	19,660	21,580	21,770	33,740	38,170	26,920	20,870	17,580	16,160

Calendar year 1951: Max 825 Min 270 Mean 376 Cfsm 5.01 In. 68.08 Ac-ft 272,300
Water year 1951-52: Max 745 Min 268 Mean 379 Cfsm 5.05 In. 68.73 Ac-ft 275,000

* Discharge measurement made on this day.

Fish Creek at Big Camas ranger station, Oreg.

Location.--Lat 43°14', long. 122°26', in SE¼ sec. 10, T. 27 S., R. 3 E., on right bank half a mile upstream from Camas Creek and three-quarters of a mile east of Big Camas ranger station.

Drainage area.--67 sq mi, approximately.

Records available.--October 1947 to September 1952 (include flow of Fish Creek power canal completed in June 1952).

Gage.--Water-stage recorder. Datum of gage is 2,860.44 ft above mean sea level, datum of 1929 (surveys by California Oregon Power Co.). Prior to July 9, 1951, water-stage recorder and July 10 to Aug. 10, 1951, staff gage, at site 1,000 ft upstream at datum 11.80 ft higher. Aug. 11 to Nov. 3, 1951, staff gage at site 200 ft downstream at different datum.

Average discharge.--5 years, 263 cfs.

Extremes.--Maximum discharge during year, 1,100 cfs Dec. 1 (gage height, 3.13 ft); minimum daily, 46 cfs Oct. 10.
1947-52: Maximum discharge, 4,270 cfs Jan. 7, 1948 (gage height, 7.62 ft), from rating curve extended above 900 cfs on basis of contracted-opening determination at gage height 5.97 ft (present site and datum); minimum, 39 cfs Nov. 3-8, 1949.

Remarks.--Records good except those for periods of staff-gage record or of no gage-height record, which are fair. All records presented herein include flow in Fish Creek power canal which diverts water about 2 miles above station for power generation at Fish Creek powerplant; diversion discharged to North Umpqua River just below Toketee Falls.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a70	95	880	234	*485	167	341	*700	600	451	129	74
2	a105	93	555	209	595	161	341	*600	595	418	*144	74
3	95	91	445	192	520	161	318	535	622	421	126	71
4	87	*89	390	183	540	153	332	475	650	431	131	74
5	65	82	332	173	465	150	440	440	716	416	130	80
6	58	79	289	164	400	147	617	440	732	373	123	74
7	a55	75	237	155	359	141	710	485	666	355	120	72
8	52	72	212	150	328	136	606	585	666	342	115	74
9	48	72	189	144	310	139	520	560	661	337	106	90
10	a46	133	186	141	297	139	475	575	*580	325	121	78
11	73	253	189	133	301	133	470	628	505	302	110	73
12	95	445	186	128	293	131	465	656	435	279	108	70
13	69	310	186	123	272	126	520	760	390	280	105	70
14	a130	332	176	126	256	126	580	700	390	268	101	70
15	180	253	167	119	256	123	525	628	368	243	99	69
16	100	202	164	116	293	121	475	639	368	216	96	69
17	85	180	155	131	276	119	505	710	386	206	95	69
18	73	164	180	116	256	119	634	796	422	194	93	66
19	91	158	164	107	237	116	683	850	438	185	92	66
20	134	158	155	109	223	109	617	826	437	182	89	66
21	a105	147	*161	105	206	105	545	727	415	177	87	64
22	158	136	280	107	199	103	530	688	398	171	87	63
23	570	128	260	105	189	121	560	716	548	166	86	61
24	250	116	225	109	180	359	606	796	550	163	85	58
25	186	123	202	107	176	425	a650	814	483	158	86	*62
26	150	164	226	107	173	*435	a700	790	443	155	84	61
27	132	199	328	105	170	430	a750	832	475	152	82	61
28	a130	400	364	103	167	455	a800	886	517	148	80	61
29	128	395	341	107	167	435	a800	802	533	145	78	60
30	112	700	305	155	-	395	a750	716	500	143	76	59
31	104	-	268	260	-	368	-	656	-	*141	75	-
Total	3,736	5,844	8,395	4,323	8,589	6,348	16,865	21,011	15,489	7,943	3,137	2,059
Mean	121	195	271	139	296	205	562	678	516	256	101	69.6
Cfsm	1.81	2.91	4.04	2.07	4.42	3.06	8.39	10.1	7.70	3.82	1.51	1.04
In.	2.07	3.24	4.66	2.40	4.77	3.52	9.36	11.66	8.60	4.41	1.74	1.14
Ac-ft	7,410	11,590	16,650	8,570	17,040	12,590	33,450	41,670	30,720	15,750	6,220	4,080

Calendar year 1951: Max 1,340 Min 46 Mean 250 Cfsm 3.73 In. 50.60 Ac-ft 180,900
Water year 1951-52: Max 886 Min 46 Mean 283 Cfsm 4.22 In. 57.57 Ac-ft 205,700

Peak discharge (base, 900 cfs).--Dec. 1 (5:30 a.m.) 1,100 cfs (3.13 ft); May 27 (10 p.m.) 947 cfs (2.91 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage when available and records for Clearwater River at mouth.

North Umpqua River above Copeland Creek, Oreg.

Location.--Lat 43°18', long. 122°32', in NE¼ sec. 23, T. 26 S., R. 2 E., on right bank half a mile upstream from Copeland Creek and 40 miles east of Roseburg.

Drainage area.--471 sq mi.

Records available.--September 1949 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from river-profile map).

Extremes.--Maximum discharge during year, 4,200 cfs May 19 (gage height, 6.60 ft); minimum daily, 918 cfs Sept. 2.
1949-52: Maximum discharge, 12,200 cfs Oct. 29, 1950 (gage height, 11.30 ft), from rating curve extended above 3,200 cfs on basis of slope-area determination at gage height 11.30 ft; minimum daily, 768 cfs Oct. 2, 3, 1949.

Remarks.--Records good. No diversion above station. Regulation by powerplants upstream; slightly regulated by Diamond Lake.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 5)

Oct. 1 to Apr. 5		Apr. 6 to Sept. 5		Sept. 6-30	
2.8	910	3.2	900	3.0	900
4.0	1,770	4.0	1,480	3.5	1,250
5.7	3,370	5.0	2,370		
		6.2	3,720		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,180	1,170	3,300	1,480	2,930	1,440	2,180	3,030	2,820	2,080	1,190	924
2	1,310	1,160	2,710	1,670	*3,320	1,290	2,130	2,750	2,830	1,970	1,160	918
3	1,300	958	2,550	1,590	2,970	1,510	2,080	2,550	2,840	1,950	1,100	923
4	1,120	970	2,300	1,480	2,910	1,450	2,110	2,340	2,860	1,900	1,150	954
5	1,050	1,150	2,380	1,400	2,730	1,450	2,510	2,250	2,960	1,910	1,110	1,100
6	988	1,060	1,930	1,190	2,390	1,390	3,080	2,270	3,090	1,860	1,130	1,040
7	1,020	1,040	1,750	1,590	2,150	1,370	3,520	2,360	2,910	1,740	1,090	1,020
8	1,040	1,090	1,600	1,420	2,030	1,130	3,140	2,820	2,900	1,680	1,050	1,040
9	988	1,110	1,360	1,450	1,990	1,180	2,790	2,700	2,900	1,660	1,090	1,180
10	994	1,030	1,560	1,420	1,820	1,590	2,690	2,700	2,680	1,640	1,080	1,070
11	1,050	1,260	1,590	1,410	2,000	1,440	2,660	2,890	*2,470	1,580	1,100	974
12	1,170	2,410	1,640	1,030	1,870	1,440	2,560	2,980	2,250	1,550	974	1,050
13	1,040	2,000	1,640	1,020	1,780	1,370	2,750	3,370	2,100	1,500	1,040	981
14	1,140	2,120	1,590	1,470	1,730	1,530	2,930	3,310	2,110	1,460	1,000	1,010
15	1,440	1,710	1,380	1,260	1,890	1,240	2,690	3,060	2,020	1,460	988	1,030
16	1,160	1,630	1,310	1,250	2,000	970	2,570	3,060	1,940	1,480	1,040	960
17	1,120	1,400	1,610	1,300	1,800	1,390	2,620	3,290	1,940	1,350	1,040	960
18	1,040	1,250	1,640	1,300	1,770	1,330	3,100	3,500	2,010	1,300	1,020	930
19	1,110	1,420	1,640	940	1,630	1,360	3,370	3,700	2,030	1,300	995	1,030
20	1,290	1,400	1,530	1,090	1,610	1,330	2,830	3,640	2,050	1,220	974	1,060
21	1,340	1,370	*1,490	1,250	1,590	1,310	2,830	3,350	2,000	1,230	967	924
22	1,430	1,080	2,310	1,230	1,540	1,000	2,770	3,180	1,940	1,240	967	924
23	2,320	1,340	2,120	1,260	1,480	1,140	2,880	3,230	2,250	1,300	954	*988
24	1,780	1,090	1,860	1,200	1,230	3,280	3,090	3,410	2,340	1,200	954	924
25	1,470	1,180	1,540	1,300	1,600	*3,190	3,370	3,440	2,140	1,160	954	960
26	1,360	1,390	1,790	1,240	1,550	2,960	3,520	3,440	2,040	1,270	1,000	942
27	1,190	1,440	2,380	1,140	1,490	2,810	3,520	3,540	2,040	1,260	967	930
28	1,090	2,210	2,530	1,340	1,560	2,790	3,710	3,660	2,190	1,230	967	988
29	1,250	1,950	2,330	1,330	1,560	2,620	3,240	3,470	2,270	1,200	942	948
30	*1,190	2,880	2,070	*1,870	-	2,410	*3,040	3,200	2,270	*1,140	930	930
31	1,180	-	1,870	2,320	-	2,340	-	3,090	-	1,230	936	-
Total	38,150	43,268	59,300	42,240	56,920	53,050	86,280	95,580	71,190	46,050	31,859	29,612
Mean	1,231	1,442	1,913	1,363	1,963	1,711	2,876	3,083	2,373	1,485	1,028	987
Cfsm	2.61	3.06	4.06	2.89	4.17	3.63	6.11	6.55	5.04	3.15	2.18	2.10
In.	3.01	3.42	4.68	3.34	4.49	4.19	6.81	7.55	5.62	3.64	2.52	2.34
Ac-ft	75,670	85,820	117,600	83,780	112,900	105,200	171,100	189,600	141,200	91,340	63,190	58,730

Calendar year 1951: Max 5,460 Min 868 Mean 1,711 Cfsm 3.63 In. 49.33 Ac-ft 1,239,000
Water year 1951-52: Max 3,710 Min 918 Mean 1,786 Cfsm 3.79 In. 51.61 Ac-ft 1,296,000

* Discharge measurement made on this day.

Umpqua River near Elkton, Oreg.

Location.--Lat 43°35', long. 123°33', in sec. 8, T. 23 S., R. 7 W., on right bank 4 miles south of Elkton.

Drainage area.--3,680 sq mi, approximately.

Records available.--October 1905 to September 1952 (imcomplete prior to November 1908).

Gage.--Staff gage read twice daily. Datum of gage is 91.33 ft above mean sea level, datum of 1929. Prior to Jan. 1, 1910, at datum 1.48 ft higher and Jan. 1, 1910, to Sept. 30, 1929, at datum 0.96 ft higher.

Average discharge.--47 years, 7,229 cfs.

Extremes.--Maximum discharge observed during year, 72,500 cfs Feb. 2 (gage height, 22.30 ft); minimum, 1,050 cfs Oct. 1.
1905-52: Maximum discharge, 208,000 cfs Oct. 30, 1950 (gage height, 44.2 ft); minimum observed, 640 cfs July 18, 1926 (gage height, 0.71 ft).
Maximum stage known, 45.5 ft sometime in 1861.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some diversions for irrigation from streams in South Umpqua River basin, but low flow probably only slightly affected. Powerplants on North Umpqua River ordinarily do not affect discharge at this station.

Revisions (water years).--W 1184: 1927(M), 1938(M), 1943(M), 1946(M).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second
(Backwater from moss Oct. 1 to Nov. 11, July 10 to Sept. 30)

1.4	1,150	10.0	20,200
2.0	1,780	15.0	38,800
4.0	4,540	22.0	71,000
6.0	8,500		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,160	2,590	42,100	20,700	40,500	11,400	16,900	7,230	a5,000	8,260	1,680	1,250
2	1,590	2,360	35,300	15,400	66,600	9,220	15,300	7,710	*4,860	6,420	1,660	1,240
3	2,240	2,190	28,000	13,100	50,200	8,520	14,100	7,070	4,940	5,140	1,650	1,230
4	3,640	2,060	38,000	12,200	41,700	8,430	13,000	6,320	4,910	4,620	1,630	1,240
5	3,050	1,920	*45,300	11,900	30,700	8,500	13,500	5,880	5,040	4,360	1,620	1,250
6	2,290	1,880	38,200	12,200	22,100	8,240	16,600	5,300	5,020	4,010	1,600	1,270
7	1,740	2,040	21,800	12,400	20,200	7,580	17,100	a6,000	5,120	3,640	1,580	1,280
8	1,480	1,860	15,600	11,500	17,300	6,980	16,600	a7,000	5,050	3,370	1,560	1,290
9	1,380	1,790	12,300	10,200	15,700	6,500	13,400	a8,500	4,880	3,240	1,530	1,320
10	1,330	1,970	9,300	16,700	14,400	6,730	12,100	a10,000	4,810	3,030	1,490	1,450
11	1,310	2,700	8,950	27,800	13,200	*12,800	11,200	a8,500	4,680	2,900	1,470	1,690
12	1,410	11,500	9,050	18,200	13,200	12,400	10,500	a8,000	4,490	2,820	1,450	1,580
13	1,930	33,100	10,300	15,000	12,400	10,700	9,820	7,730	4,240	2,730	1,440	1,430
14	2,340	25,000	9,200	12,100	10,600	9,510	12,300	7,670	4,190	*2,620	1,430	1,360
15	2,800	17,600	8,310	14,500	10,200	8,550	*12,500	a7,000	4,090	2,470	1,410	1,330
16	4,680	13,900	7,170	11,600	14,600	7,690	10,500	a6,500	3,980	2,320	1,410	1,300
17	3,400	9,330	7,090	9,800	21,800	7,210	9,410	a6,500	3,870	2,190	1,390	1,290
18	2,550	7,260	9,250	8,750	19,200	7,800	9,220	a7,000	3,760	2,110	1,390	1,270
19	2,240	6,020	18,900	7,600	16,600	10,600	10,300	7,470	3,620	2,060	1,370	1,260
20	2,140	5,500	16,500	8,620	15,000	12,000	a11,000	7,580	3,540	1,990	1,370	1,250
21	2,670	5,230	11,500	13,900	13,700	10,900	a9,500	a7,000	3,560	1,930	1,350	1,230
22	4,350	4,840	12,500	14,100	11,800	10,200	a8,500	a6,500	3,600	1,900	1,350	1,220
23	11,300	4,380	47,100	14,400	12,100	9,770	a8,000	a6,500	3,720	1,870	1,340	1,200
24	21,600	3,920	56,600	*17,000	12,700	20,200	a8,000	a6,500	4,000	1,850	1,330	1,190
25	13,600	3,770	31,500	21,400	13,200	52,500	8,900	6,670	4,360	1,810	1,310	1,170
26	8,210	3,650	25,700	20,000	14,600	36,500	9,560	6,580	4,190	1,780	*1,290	1,180
27	5,640	4,010	34,300	17,500	14,700	27,500	9,820	6,500	4,080	1,760	1,290	1,180
28	4,250	7,850	45,300	15,100	14,200	24,000	9,540	6,440	4,300	1,750	1,270	1,170
29	3,600	18,000	47,500	15,200	13,200	21,100	9,380	6,380	7,280	1,740	1,270	1,180
30	*3,260	33,100	52,000	20,400	-	17,400	8,010	a6,000	11,100	1,710	1,250	1,190
31	2,860	-	31,900	35,900	-	15,600	-	a5,500	-	1,700	1,250	-
Total	126,040	241,320	786,520	475,170	586,400	427,030	344,560	215,330	140,280	90,100	44,430	38,490
Mean	4,066	8,044	25,370	15,330	20,220	13,780	11,490	6,946	4,676	2,906	1,433	1,283
Cfsm	1.10	2.19	6.89	4.17	5.49	3.74	3.12	1.89	1.27	0.790	0.389	0.349
In.	1.27	2.44	7.95	4.80	5.93	4.32	3.48	2.18	1.42	0.91	0.45	0.39
Ac-ft	250,000	478,700	‡1,560	942,500	‡1,163	847,000	683,400	427,100	278,200	178,700	88,130	76,340

Calendar year 1951: Max 89,200 Min 1,000 Mean 9,813 Cfsm 2.67 In. 36.21 Ac-ft 7,105,000
Water year 1951-52: Max 66,600 Min 1,160 Mean 9,606 Cfsm 2.61 In. 35.54 Ac-ft 6,973,000

Peak discharge (base, 52,000 cfs).--Dec. 24 (9 a.m.) 64,900 cfs (20.76 ft); Dec. 30 (about 5 a.m.) 58,500 cfs (19.4 ft); Feb. 2 (5 p.m.) 72,500 cfs (22.30 ft); Mar. 25 (8 a.m.) 57,100 cfs (19.10 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

a No gage-height record; discharge estimated on basis of records for South Umpqua River near Brockway and North Umpqua River above Copeland Creek.

Daniels Creek near Eastside, Oreg.

Location.--Lat 43°20'45", long. 124°05'25", near center sec. 2, T. 26 S., R. 12 W., on left bank at downstream side of highway bridge, 0.1 mile downstream from Morgan Creek and 5½ miles southeast of Eastside.

Drainage area.--14.5 sq mi.

Records available.--July 1950 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 6.32 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 455 cfs Nov. 30 (gage height, 9.22 ft); minimum, 1.6 cfs several days in September.
1950-52: Maximum discharge, 1,170 cfs Oct. 28, 1950 (gage height, 9.96 ft); minimum, 1.6 cfs Sept. 22, 1950, Sept. 21, 1951, and several days in September 1952.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Diversions for irrigation above station of about 30 acres. No regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23, Nov. 29 to Dec. 1, Dec. 3, Jan. 10, 11, Apr. 29 to May 11, Aug. 20 to Sept. 30)

1.9	1.0	6.0	114
2.1	3.0	8.0	212
2.5	8.5	8.8	280
3.0	18	9.0	400
4.5	56		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	15	223	127	180	52	100	25	9.1	8.4	3.1	2.0
2	29	14	165	105	182	47	95	21	8.8	6.7	3.4	1.8
3	27	13	237	95	180	63	100	20	8.6	5.8	3.2	1.7
4	*12	13	221	132	175	87	100	19	8.4	5.4	2.9	2.0
5	7.8	12	207	124	146	102	90	18	8.2	5.0	2.9	2.6
6	6.2	12	181	128	119	79	80	18	8.0	4.7	2.9	2.6
7	5.6	11	150	126	99	63	75	20	7.4	4.2	2.7	2.3
8	5.0	11	110	133	82	55	70	20	7.3	4.0	2.8	2.3
9	4.5	11	80	143	68	59	65	19	7.4	*3.8	3.2	6.6
10	4.3	28	65	312	59	116	60	17	7.8	3.8	3.5	4.8
11	23	84	55	254	65	110	55	16	7.9	4.0	3.2	3.2
12	20	132	50	226	65	124	55	15	*8.0	4.3	3.2	2.9
13	12	90	43	176	56	211	55	16	8.5	4.1	3.2	2.7
14	20	60	38	194	56	*168	50	16	7.4	*4.2	3.2	2.3
15	26	45	36	205	61	121	44	15	7.0	4.2	3.6	2.2
16	17	37	36	182	85	90	42	14	6.6	4.0	3.5	2.0
17	12	32	34	146	86	60	40	13	6.1	3.8	3.2	2.0
18	14	28	*78	123	92	90	42	13	6.0	3.7	2.9	*2.0
19	26	29	121	123	117	130	46	13	6.0	3.6	2.7	2.0
20	33	34	107	172	130	120	38	14	6.8	3.4	*2.5	1.9
21	28	49	89	160	108	90	34	13	6.7	3.2	2.4	2.0
22	37	40	179	180	101	75	30	12	6.2	3.1	2.4	1.9
23	*249	34	198	178	145	80	28	12	6.7	3.4	2.6	1.9
24	*157	30	184	229	120	300	26	11	6.2	3.2	2.7	2.2
25	74	30	130	184	104	270	25	11	6.1	3.0	2.9	2.3
26	40	52	146	152	94	210	24	11	5.6	3.0	2.7	2.3
27	31	74	218	121	77	180	23	10	6.1	3.1	2.5	2.0
28	26	106	184	100	65	150	22	10	8.5	3.0	2.3	1.9
29	22	199	193	*86	58	120	*19	10	21	2.9	2.2	1.8
30	19	339	186	112	-	100	25	9.7	12	3.1	2.0	1.8
31	17	-	155	118	-	110	-	9.6	-	3.0	2.0	-
Total	1,029.4	1,864	4,099	4,846	2,975	3,632	1,558	481.3	236.4	125.1	88.5	72.0
Mean	33.2	55.5	132	156	103	117	51.9	14.9	7.88	4.04	2.85	2.40
Cfsm	2.29	3.83	9.10	10.8	7.10	8.07	3.58	1.03	0.543	0.279	0.197	0.166
In.	2.64	4.27	10.51	12.43	7.63	9.32	4.00	1.18	0.61	0.32	0.23	0.18
Ac-ft	2,040	3,300	8,130	9,610	5,900	7,200	3,090	915	469	248	176	143

Calendar year 1951: Max 731 Min 1.7 Mean 61.0 Cfsm 4.21 In. 57.06 Ac-ft 44,130
Water year 1951-52: Max 339 Min 1.7 Mean 56.8 Cfsm 3.92 In. 53.32 Ac-ft 41,220

Peak discharge (base, 300 cfs).--Oct. 23 (11 a.m.) 414 cfs (9.13 ft); Nov. 30 (1 to 3 a.m.) 455 cfs (9.22 ft); Dec. 3 (3 p.m.) 315 cfs (8.88 ft); Jan. 10 (4 a.m.) 360 cfs (9.00 ft); Mar. 25 (time unknown) 388 cfs (9.07 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 7-12, Mar. 16 to Apr. 28; discharge estimated on basis of recorded range in stage, weather records, and records for South Fork Coquille River at Powers.

South Fork Coquille River at Powers, Oreg.

Location.--Lat 42°53'40", long. 124°04'10", in SE¼ sec. 12, T. 31 S., R. 12 W., on left bank half a mile northeast of bridge at Powers and three-quarters of a mile upstream from Woodward Creek.

Drainage area.--169 sq mi.

Records available.--September 1916 to September 1926, October 1928 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 197.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 17, 1938, staff or wire-weight gages at various sites within 1 mile of present site at different datums.

Average discharge.--33 years (1916-26, 1929-52), 739 cfs.

Extremes.--Maximum discharge during year, 12,000 cfs Nov. 30 (gage height, 12.04 ft); minimum, 16 cfs Sept. 26, 27, 29, 30.
1916-26, 1928-52: Maximum discharge, 30,500 cfs Dec. 28, 1945 (gage height, 20.57 ft), from rating curve extended above 14,000 cfs on basis of contracted-opening determination at gage height 18.14 ft; minimum, 12 cfs Sept. 22-25, 27-30, 1939.

Remarks.--Records good. No regulation. Small diversion for irrigation above station.

Revisions (water years).--W 1184: 1946(M).

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.1	15	3.0	515
1.3	31	4.5	1,650
1.6	70	7.0	4,250
2.0	149	10.0	8,550
2.5	300		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	293	265	6,910	1,630	8,150	960	1,330	747	134	286	43	22
2	1,370	234	3,500	1,240	6,970	796	1,420	545	127	218	43	22
3	968	215	5,690	1,020	4,700	922	1,450	440	119	187	41	18
4	440	203	5,870	1,150	3,950	1,170	1,390	383	113	162	39	20
5	254	184	5,520	1,150	2,940	1,040	1,700	347	111	147	38	21
6	182	172	3,180	1,170	2,230	922	1,800	347	109	131	36	21
7	140	162	2,100	1,070	1,780	838	1,450	403	107	121	34	21
8	115	149	1,500	975	1,500	740	1,150	593	101	113	34	21
9	97	149	1,130	1,840	1,310	733	982	510	101	105	35	28
10	85	617	901	4,530	1,160	1,380	938	450	105	99	34	35
11	254	3,170	803	2,760	1,310	1,430	915	411	115	93	34	32
12	455	4,790	782	1,810	1,270	1,330	845	375	*117	89	34	28
13	300	3,210	747	1,320	1,040	1,210	880	351	131	85	33	26
14	268	2,130	642	1,560	975	*1,030	859	339	129	*82	33	26
15	782	1,520	557	1,400	1,140	845	719	304	125	77	33	22
16	445	1,090	521	1,100	1,840	733	656	290	109	72	33	21
17	318	803	510	852	1,580	698	684	272	103	68	31	21
18	262	629	*1,260	712	1,330	990	803	262	97	66	31	20
19	399	691	1,860	789	1,230	1,190	887	248	91	64	30	21
20	440	754	1,360	1,610	1,150	1,130	712	230	91	60	30	20
21	623	922	1,100	1,290	945	1,040	575	218	93	58	30	19
22	593	740	2,390	1,290	894	908	515	200	89	56	29	20
23	*3,740	611	4,660	1,620	1,220	952	485	187	87	55	28	19
24	4,180	515	4,130	3,700	1,160	2,890	495	179	87	52	28	18
25	2,260	605	2,390	2,660	1,220	3,100	480	172	89	51	29	18
26	1,250	1,410	3,410	2,550	1,340	2,820	450	162	87	50	*29	18
27	789	1,750	3,620	2,350	1,360	2,480	430	152	91	48	28	18
28	557	2,560	3,110	1,990	1,300	2,270	415	147	142	47	27	18
29	435	4,080	4,640	*1,920	1,150	1,780	*371	142	635	43	26	18
30	367	8,170	3,830	4,240	-	1,440	670	136	415	45	26	18
31	304	-	2,340	4,910	-	1,500	-	136	-	43	24	-
Total	22,965	42,500	80,963	58,208	58,144	41,267	26,456	9,678	4,050	2,873	1,003	650
Mean	741	1,417	2,612	1,878	2,005	1,331	882	312	135	92.7	32.4	21.7
Cfsm	4.38	9.35	15.5	11.1	11.9	7.88	5.22	1.85	0.799	0.549	0.192	0.128
In.	5.05	9.35	17.82	12.81	12.80	9.08	5.82	2.13	0.89	0.63	0.22	0.14
Ac-ft	45,550	84,300	160,600	115,500	115,300	81,850	52,470	19,200	8,030	5,700	1,990	1,290

Calendar year 1951: Max 12,700 Min 18 Mean 994 Cfsm 5.88 In. 79.83 Ac-ft 719,500
Water year 1951-52: Max 8,150 Min 18 Mean 953 Cfsm 5.64 In. 76.74 Ac-ft 691,800

Peak discharge (base, 8,000 cfs).--Nov. 30 (1 a.m.) 12,000 cfs (12.04 ft); Feb. 1 (6 a.m.) 9,620 cfs (10.66 ft).

* Discharge measurement made on this day.

Rogue River above Bybee Creek, Oreg.

Location.--Lat 42°56', long. 122°26', in NE¼ sec. 26, T. 30 S., R. 3 E., on left bank 700 ft upstream from Bybee Creek, 2 miles northeast of Union Creek, and at mile 186.1 (Geological Survey river-profile survey).

Drainage area.--155 sq mi.

Records available.--January 1930 to September 1952 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 3,465 ft (from river-profile map). Prior to Nov. 23, 1934, water-stage recorder at site 200 ft downstream at different datum.

Average discharge.--22 years, 498 cfs.

Extremes.--Maximum discharge during year, 1,980 cfs May 27 (gage height, 4.71 ft); minimum, 356 cfs Jan. 17.
1930-52: Maximum discharge, 4,430 cfs Nov. 29, 1942, Dec. 28, 1945 (gage height, 7.84 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum daily, 180 cfs Jan. 7, 1937.

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

Revisions (water years).--W 984: 1933(M). W 1044: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.6	380
2.0	530
4.0	1,550
5.0	2,180

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	494	436	1,620	478	669	440	602	1,180	1,470	920	510	436
2	615	426	1,060	486	782	436	592	1,080	1,450	890	502	432
3	579	422	870	*b520	664	440	*584	1,010	1,470	890	510	*432
4	440	436	772	b480	628	436	610	960	1,510	895	510	440
5	408	415	714	454	638	432	714	935	1,590	860	498	474
6	394	412	646	458	602	426	855	965	1,650	818	486	436
7	387	408	592	440	579	418	980	1,030	1,560	795	478	432
8	384	401	574	436	558	415	950	1,170	1,560	*782	478	440
9	380	398	542	432	546	426	870	1,110	1,540	764	478	482
10	380	510	538	440	538	432	845	*1,140	1,360	741	482	443
11	440	518	542	440	538	422	850	1,260	1,210	728	478	436
12	506	790	538	422	530	422	850	1,290	1,080	700	474	429
13	426	646	530	415	*510	408	915	1,470	1,020	678	470	426
14	462	*710	518	422	510	408	935	1,390	1,020	664	470	422
15	700	606	510	422	530	404	885	1,270	960	646	466	422
16	474	542	506	408	554	404	865	1,330	950	628	462	422
17	432	514	490	398	538	404	910	1,450	985	606	462	418
18	418	502	510	b410	522	404	1,070	1,560	1,020	597	458	415
19	458	498	498	408	510	404	1,140	1,630	1,020	584	458	415
20	550	506	474	401	498	394	1,040	1,600	1,020	579	454	415
21	542	490	478	394	478	387	975	1,500	980	566	450	412
22	597	474	554	b400	474	387	1,000	1,460	940	558	450	412
23	860	462	554	401	b470	404	1,060	1,550	1,110	550	450	412
24	678	454	506	408	458	633	1,140	1,690	1,080	542	450	412
25	574	454	482	404	458	682	1,260	1,740	985	534	454	412
26	510	542	502	404	450	660	1,350	1,720	930	530	446	408
27	486	566	606	398	443	660	1,350	1,800	980	522	443	408
28	486	860	579	398	443	692	1,390	1,870	1,060	518	443	408
29	478	804	562	401	443	678	1,200	1,730	1,030	514	440	408
30	462	1,170	530	432	-	651	1,160	1,600	965	514	440	408
31	446	-	502	530	-	633	-	1,570	-	522	436	-
Total	15,446	16,372	18,899	13,340	15,561	14,842	28,947	43,060	35,505	20,635	14,486	12,767
Mean	498	546	610	430	537	479	965	1,389	1,184	666	467	426
Cfsm	3.21	3.52	3.94	2.77	3.46	3.09	6.23	8.96	7.64	4.30	3.01	2.75
In.	3.71	3.93	4.53	3.20	3.73	3.56	6.95	10.33	8.52	4.95	3.48	3.06
Ac-ft	30,640	32,470	37,490	26,460	30,860	29,440	57,420	85,410	70,420	40,930	28,730	25,320

Calendar year 1951: Max 1,620 Min 371 Mean 629 Cfsm 4.06 In. 55.06 Ac-ft 455,100
Water year 1951-52: Max 1,870 Min 380 Mean 683 Cfsm 4.41 In. 59.95 Ac-ft 495,600

Peak discharge (base, 1,600 cfs).--Dec. 1 (8 a.m.) 1,830 cfs (4.47 ft); May 27 (12 p.m.) 1,980 cfs (4.71 ft).

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

Rogue River above Prospect, Oreg.

Location.--Lat 42°47', long. 122°30', in NE¼ sec. 19, T. 32 S., R. 3 E., on left bank 1½ miles upstream from intake of diversion of California Oregon Power Co., 2 miles northwest of Prospect, 3 miles upstream from Mill Creek, and at mile 169.7 (Geological Survey river-profile survey).

Drainage area.--332 sq mi.

Records available.--January 1908 to February 1912 (incomplete), October 1923 to September 1952. Published as "near Prospect" 1924-25 and as North Fork Rogue River "at or near Prospect" 1908-09, 1911-12.

Gage.--Water-stage recorder. Altitude of gage is 2,620 ft (from river-profile map). Prior to Feb. 17, 1912, staff gage at several sites within a few hundred feet upstream at various datums.

Average discharge.--30 years (1910-11, 1923-52), 760 cfs.

Extremes.--Maximum discharge during year, 4,360 cfs Dec. 1 (gage height, 5.01 ft); minimum, 512 cfs Oct. 9-11.

1908-12, 1923-52: Maximum discharge, 11,900 cfs Dec. 28, 1945 (gage height, 8.4 ft, from floodmark), from rating curve extended above 4,900 cfs; minimum observed, 200 cfs Nov. 20, 1931 (gage height, 1.07 ft).

Flood of Nov. 22 or 23, 1909, may have exceeded 11,900 cfs.

Revisions.--Figures of maximum discharge for water years 1925 and 1927 have been revised to 6,480 cfs Dec. 30, 1924 (gage height, 6.20 ft) and 8,130 cfs Feb. 20, 1927 (gage height, 6.97 ft), superseding figures published in Water-Supply Papers 614 and 654, respectively.

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

Cooperation.--Water-stage recorder graph furnished by California Oregon Power Co.

Revisions.--Revised figure of discharge, in cubic feet per second, for one day in the water year 1925, superseding figure published in Water-Supply Paper 614, is given herewith:

Apr. 10, 1925..... 1,220

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
April 1925.....	1,900	746	1,160	3.49	3.89	69,300
Water year 1924-25.....	5,060	291	820	2.47	33.53	593,000
Calendar year 1925.....	4,840	362	761	2.29	31.08	550,000

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from log Jan. 31 to Sept. 30)

1.7	485	3.0	1,510
2.0	655	5.0	4,340

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	655	613	3,590	910	1,470	741	1,190	2,010	2,140	1,280	688	578
2	798	601	2,190	776	2,200	727	1,170	1,800	2,090	1,240	681	573
3	838	595	1,690	*822	1,600	734	*1,130	1,650	2,100	1,240	694	*573
4	619	601	1,520	854	1,390	727	1,200	1,520	2,140	1,240	707	578
5	562	584	1,360	776	1,340	714	1,520	1,480	2,270	1,200	668	655
6	540	573	1,180	762	1,210	700	1,910	1,530	2,380	1,150	655	590
7	529	556	1,040	727	1,110	688	2,140	1,710	2,230	1,100	643	584
8	524	551	968	707	1,070	674	2,010	2,150	2,220	*1,060	643	584
9	518	546	902	681	1,030	694	1,740	1,970	2,230	1,050	643	643
10	512	681	878	681	986	741	1,640	*1,960	1,950	1,040	649	607
11	573	798	894	674	995	720	1,680	2,130	1,710	1,010	637	584
12	727	1,510	894	643	977	714	1,660	2,190	1,510	977	625	573
13	601	1,290	894	643	*918	694	1,790	2,470	1,400	942	619	568
14	578	*1,430	870	655	894	688	1,900	2,360	1,390	910	619	562
15	1,040	1,150	838	655	950	681	1,710	2,100	1,320	894	613	562
16	674	942	830	631	1,240	674	1,650	2,150	1,280	870	613	562
17	595	838	790	595	1,090	668	1,730	2,430	1,310	830	607	562
18	568	790	830	631	1,000	668	2,140	2,580	1,360	806	607	556
19	613	769	790	631	942	662	2,330	2,720	1,350	790	607	551
20	700	769	762	631	886	637	1,970	2,620	1,370	783	595	551
21	776	755	762	607	830	625	1,780	2,410	1,320	769	595	551
22	854	720	1,000	613	806	619	1,810	2,300	1,260	755	595	551
23	1,470	694	1,290	607	806	649	1,930	2,430	1,460	741	590	551
24	1,150	674	1,230	607	769	1,150	2,140	2,660	1,470	734	590	551
25	934	668	1,030	601	755	1,360	2,410	2,800	1,340	727	595	551
26	790	776	1,010	607	748	1,350	2,610	2,800	1,260	720	590	551
27	720	846	1,410	607	734	1,350	2,570	*2,850	1,290	707	590	556
28	700	1,700	1,420	601	727	1,440	2,610	2,940	1,470	700	584	551
29	681	1,420	1,320	607	734	1,390	2,150	2,690	1,430	694	584	551
30	655	2,240	1,150	668	-	1,320	2,020	2,400	1,360	681	584	551
31	631	-	1,020	965	-	1,300	-	2,340	-	707	578	-
Total	22,125	26,680	36,352	21,175	30,207	26,499	56,240	70,150	49,410	28,347	19,288	17,111
Mean	714	889	1,173	683	1,042	855	1,875	2,263	1,647	914	622	570
Cfsm	2.15	2.68	3.53	2.06	3.14	2.58	5.65	6.82	4.96	2.75	1.87	1.72
In.	2.48	2.99	4.07	2.37	3.38	2.97	6.30	7.86	5.53	3.18	2.16	1.92
Ac-ft	43,880	52,920	72,100	42,000	59,910	52,560	111,600	139,100	98,000	56,230	38,260	33,940

Calendar year 1951: Max 3,590 Min 490 Mean 1,005 Cfsm 3.03 In. 41.12 Ac-ft 727,900
Water year 1951-52: Max 3,590 Min 512 Mean 1,103 Cfsm 3.32 In. 45.21 Ac-ft 800,500

Peak discharge (base, 2,700 cfs).--Dec. 1 (9 a.m.) 4,360 cfs (5.01 ft); Apr. 28 (7 a.m.) 2,730 cfs (4.13 ft); May 28 (3 a.m.) 3,120 cfs (4.40 ft).

* Discharge measurement made on this day.

South Fork Rogue River near Prospect, Oreg.

Location.--Lat 42°42', long. 122°23', in NE¼ sec. 18, T. 33 S., R. 4 E., on right bank 500 ft downstream from diversion dam and intake of South Fork power canal, an eighth of a mile downstream from Imnaha Creek, and 6 miles southeast of Prospect. Records include flow of South Fork power canal.

Drainage area.--79 sq mi, approximately.

Records available.--April 1924 to September 1931, October 1949 to September 1952. Equivalent records for period October 1931 to September 1949 may be obtained from combined flow of South Fork Rogue River above Imnaha Creek near Prospect and Imnaha Creek near Prospect.

Gage.--Water-stage recorder. Altitude of gage is 3,350 ft (from river-profile map). Apr. 26, 1924, to Sept. 30, 1931, water-stage recorder at site about an eighth of a mile downstream at different datum.

Average discharge.--10 years (1924-31, 1949-52), 167 cfs.

Extremes.--Maximum discharge during year, 785 cfs May 28; minimum daily, 85 cfs Oct. 10. 1924-31, 1949-52: Maximum discharge, 1,700 cfs Dec. 19, 1929 (gage height, 4.58 ft, site and datum then in use), from rating curve extended above 350 cfs by logarithmic plotting; maximum gage height, 4.99 ft Nov. 28, 1927, site and datum then in use (backwater from logs); minimum discharge, about 35 cfs in September 1931 during period of no gage-height record.

Remarks.--Records good. All records presented herein include flow in South Fork power canal (completed in March 1932), which diverts 500 ft above station and returns water to Rogue River above South Fork Rogue River; practically no storage above diversion dam.

Cooperation.--Electrical-output record on power canal furnished by The California Oregon Power Co.

Revisions (water years).--W 1184: 1930(M).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	112	244	257	234	183	263	589	539	311	173	127
2	157	108	225	244	317	177	266	531	531	302	173	127
3	166	104	218	231	286	176	268	495	539	302	173	125
4	112	106	212	*223	299	172	*280	447	543	300	165	*125
5	100	108	209	213	280	169	321	427	566	293	164	139
6	92	102	193	207	267	164	376	451	584	278	162	129
7	91	98	183	198	252	164	433	527	550	*270	160	125
8	88	96	175	188	244	159	450	*677	547	263	160	121
9	86	101	166	184	241	164	438	618	535	258	158	151
10	85	124	163	183	225	167	429	598	469	251	159	138
11	100	167	166	173	223	161	430	633	423	242	154	129
12	128	358	162	170	213	160	430	598	383	236	154	125
13	104	260	157	167	207	158	448	610	362	227	151	124
14	99	443	154	166	*207	155	445	589	367	220	150	121
15	207	*290	149	163	232	155	430	552	368	214	147	118
16	139	233	148	156	283	152	424	565	352	209	146	117
17	115	201	145	154	265	149	436	622	341	205	145	117
18	105	180	150	148	249	150	490	650	356	201	142	115
19	107	171	145	149	244	149	540	677	350	198	141	114
20	117	163	142	151	237	144	498	682	358	196	141	113
21	133	159	141	146	227	141	487	610	357	193	139	113
22	154	150	265	144	221	140	501	598	336	188	138	113
23	264	144	348	144	217	140	521	622	404	187	136	111
24	225	139	342	141	207	230	578	670	435	182	137	112
25	178	137	290	139	207	255	638	682	364	181	135	110
26	153	142	271	138	201	267	656	678	325	178	133	109
27	137	144	345	134	195	272	666	703	340	177	133	109
28	132	194	368	134	191	280	706	726	389	175	132	110
29	123	181	346	130	188	277	625	675	358	173	130	108
30	119	205	313	140	-	274	607	630	335	172	129	107
31	116	-	283	177	-	271	-	602	-	171	127	-
Total	4,044	5,120	6,818	5,292	6,859	5,775	14,080	18,734	12,706	6,953	4,587	3,602
Mean	130	171	220	171	237	186	469	604	424	224	148	120
Cfsm	1.65	2.16	2.78	2.16	3.00	2.35	5.94	7.65	5.37	2.84	1.87	1.52
In.	1.90	2.41	3.21	2.49	3.23	2.72	6.63	8.82	5.98	3.27	2.16	1.70
Ac-ft	8,020	10,160	13,520	10,500	13,600	11,450	27,930	37,160	25,200	13,790	9,100	7,140

Calendar year 1951: Max 685 Min 84 Mean 221 Cfsm 2.80 In. 38.01 Ac-ft 160,200
Water year 1951-52: Max 726 Min 85 Mean 258 Cfsm 3.27 In. 44.52 Ac-ft 187,600

Peak discharge (base, 600 cfs).--Apr. 28 (5 a.m.) 760 cfs; May 28 (12:30 a.m.) 785 cfs.
* Discharge measurement made on this day.

Middle Fork Rogue River near Prospect, Oreg.

Location.--Lat 42°44', long. 122°24', in NE¼NE¼ sec. 1, T. 33 S., R. 3 E., on right bank 850 ft downstream from diversion dam and intake of Middle Fork power canal and 4½ miles southeast of Prospect. Records include flow of Middle Fork power canal.

Drainage area.--57 sq mi, approximately.

Records available.--May 1925 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,619 ft above mean sea level (levels by The California Oregon Power Co.). Prior to Nov. 10, 1949, water-stage recorder and staff gage at various sites and datums within 150 ft of present gage.

Average discharge.--27 years, 181 cfs.

Extremes.--Maximum discharge during year, 548 cfs May 27 (no flow in canal); minimum daily, 143 cfs Oct. 9, 10.
1925-52: Maximum discharge, 2,760 cfs Nov. 29, 1942, from river rating curve extended from 1,100 to 2,730 cfs; minimum daily, 72 cfs Aug. 24 to Sept. 5, 1931.

Remarks.--Records fair. All records presented herein include flow in Middle Fork power canal (completed in November 1931), which diverts 850 ft above station for hydroelectric power and returns water to Rogue River above South Fork Rogue River.

Cooperation.--Water-stage recorder graph for canal furnished by The California Oregon Power Co.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	165	165	324	241	339	183	283	347	300	300	154	160
2	231	163	267	230	396	178	283	332	300	300	154	160
3	232	161	254	222	349	175	278	312	315	330	154	160
4	166	166	258	*222	347	170	*297	292	350	350	154	*186
5	155	161	241	222	332	168	319	282	395	340	156	174
6	151	158	222	215	308	168	374	292	420	320	166	164
7	148	159	216	200	286	166	417	326	365	*305	171	164
8	146	157	205	189	269	164	409	385	365	305	172	170
9	143	154	196	184	257	170	374	*345	340	315	175	187
10	143	184	190	186	245	183	359	340	310	310	175	169
11	167	203	196	184	241	172	338	355	280	295	176	167
12	179	285	192	178	230	172	333	360	260	280	176	167
13	159	247	186	174	222	168	343	365	250	250	177	165
14	276	297	178	178	*226	169	338	355	240	230	175	165
15	265	*249	178	180	266	167	313	330	230	220	172	164
16	182	230	179	178	311	163	303	338	220	202	169	162
17	170	207	176	175	275	161	313	376	230	180	169	161
18	163	196	187	174	257	161	358	391	260	175	166	162
19	172	191	184	173	242	160	392	408	285	171	168	163
20	182	187	179	173	234	157	342	415	290	167	167	163
21	179	179	179	172	224	154	327	365	260	167	164	162
22	221	174	291	173	219	152	327	365	255	163	164	161
23	348	170	337	171	213	163	337	385	355	159	164	164
24	281	166	327	169	207	247	366	420	300	155	161	166
25	220	165	281	165	204	267	408	442	290	155	161	164
26	198	176	261	160	194	272	443	442	295	155	163	164
27	189	181	326	158	192	294	460	*475	320	151	164	163
28	185	233	336	157	189	304	492	502	340	153	162	163
29	179	216	341	161	189	309	402	442	330	154	162	162
30	173	263	312	181	-	309	377	365	320	168	162	153
31	169	-	273	228	-	303	-	340	-	161	162	-
Total	5,937	5,843	7,472	5,773	7,463	6,149	10,705	11,489	9,070	7,086	5,135	4,955
Mean	192	195	241	186	257	198	357	371	302	229	166	165
Cfsm	3.37	3.42	4.23	3.26	4.51	3.47	6.26	6.51	5.30	4.02	2.91	2.89
In.	3.87	3.81	4.88	3.77	4.87	4.01	6.98	7.50	5.92	4.62	3.35	3.23
Ac-ft	11,780	11,590	14,820	11,460	14,800	12,200	21,230	22,790	17,990	14,050	10,190	9,830

Calendar year 1951: Max 880 Min 139 Mean 236 Cfsm 4.14 In. 56.13 Ac-ft 170,600
Water year 1951-52: Max 502 Min 143 Mean 238 Cfsm 4.18 In. 56.81 Ac-ft 172,700

Peak discharge (base, 500 cfs).--Oct. 23 (11 a.m.) 535 cfs; Apr. 28 (3 a.m.) 531 cfs; May 27 (11 p.m.) 548 cfs.
* Discharge measurement made on this day.

Red Blanket Creek near Prospect, Oreg.

Location.--Lat 42°47', long. 122°26', in NE¼ sec. 23, T. 32 S., R. 3 E., on right bank 3 miles northeast of Prospect.

Drainage area.--40 sq mi, approximately.

Records available.--May 1925 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 2,780 ft (from river-profile map). Prior to Sept. 7, 1949, staff gages at various sites within 2½ miles of present site at different datums.

Average discharge.--27 years, 109 cfs.

Extremes.--Maximum discharge during year, 369 cfs Oct. 23 (gage height, 3.74 ft); minimum, 76 cfs Oct. 9, 10.
1925-52: Maximum discharge observed, 1,880 cfs Nov. 29, 1942 (gage height, 5.1 ft, site and datum then in use, from floodmark), from rating curve extended above 350 cfs; minimum observed, 34 cfs Sept. 3, 4, 25, Oct. 9, 16, 1931.

Remarks.--Records good. One diversion above station for irrigation below station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 30		Dec. 1 to Sept. 30	
2.6	69	2.7	80
2.9	124	3.0	136
3.3	227	4.0	465
4.0	470		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	97	250	139	235	118	157	241	271	208	120	95
2	136	95	190	129	280	115	157	223	274	205	118	95
3	138	93	170	124	229	113	157	205	280	214	118	*95
4	97	93	165	118	223	109	*170	190	289	223	118	118
5	88	89	152	*113	208	108	a190	182	307	214	113	108
6	82	88	139	113	190	108	a220	190	328	202	113	99
7	80	84	124	109	173	106	a250	220	310	196	111	97
8	80	84	120	106	165	104	a240	265	314	*196	109	99
9	78	82	113	106	159	108	a220	*238	314	a195	109	108
10	78	113	111	104	157	113	217	232	274	193	109	99
11	100	131	113	102	154	108	214	244	244	184	108	95
12	104	180	115	99	149	108	214	253	223	179	106	95
13	89	160	115	95	141	104	226	265	205	173	106	92
14	104	162	111	97	136	104	226	256	205	168	106	90
15	154	*145	108	95	*159	102	211	238	184	162	106	90
16	109	136	106	90	184	100	202	241	182	157	108	90
17	95	129	102	89	179	100	211	262	196	154	104	89
18	91	124	111	89	157	99	244	277	205	149	104	88
19	97	113	106	89	146	99	262	292	205	144	104	88
20	106	111	102	89	141	95	238	289	211	141	104	88
21	109	106	106	88	131	92	220	271	202	136	104	88
22	129	102	149	88	129	92	223	265	196	134	104	88
23	218	100	184	86	127	99	229	280	229	131	102	88
24	170	89	168	89	120	134	253	301	217	129	102	88
25	140	98	146	89	120	146	271	307	205	127	102	86
26	124	111	141	89	118	152	286	307	196	124	102	86
27	117	115	184	88	118	154	289	320	214	122	100	86
28	115	170	190	88	118	165	304	*334	241	120	99	86
29	111	154	184	89	118	168	268	317	226	118	99	86
30	102	200	165	108	-	168	253	295	214	129	99	84
31	100	-	149	146	-	168	-	286	-	124	99	-
Total	3,436	3,554	4,389	3,143	4,664	3,659	6,822	8,086	7,161	5,051	3,304	2,784
Mean	111	118	142	101	161	118	227	261	239	163	107	92.8
Cfsm	2.78	2.95	3.55	2.52	4.02	2.95	5.68	6.52	5.98	4.08	2.68	2.32
In.	3.19	3.30	4.08	2.92	4.34	3.40	6.34	7.52	6.66	4.70	3.07	2.59
Ac-ft	6,820	7,050	8,710	6,230	9,250	7,260	13,530	16,040	14,200	10,020	6,550	5,520

Calendar year 1951: Max 394 Min 69 Mean 143 Cfsm 3.58 In. 48.38 Ac-ft 103,300
Water year 1951-52: Max 334 Min 78 Mean 153 Cfsm 3.82 In. 52.11 Ac-ft 111,200

Peak discharge (base, 300 cfs).--Oct. 23 (12 m.) 369 cfs (3.74 ft); Feb. 1 (11 p.m.) 317 cfs (3.62 ft); Apr. 28 (6 a.m.) 320 cfs (3.63 ft); May 28 (12 p.m.) 356 cfs (3.73 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Middle and South Forks Rogue River near Prospect.

Red Blanket power canal near Prospect, Oreg.

Location.--Lat 42°45', long. 122°27', in SE¼ sec. 27, T. 32 S., R 3 E., on right bank 600 ft downstream from headgate and diversion dam and 2 miles east of Prospect.

Records available.--November 1931 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,612 ft above mean sea level (levels by California Oregon Power Co.).

Average discharge.--20 years (1932-52), 70.2 cfs.

Extremes.--1931-52: Maximum daily discharge, 106 cfs July 7-13, 1932; no flow for part of each day Sept. 24, 25, 1932.

Remarks.--Records good. This canal, completed in October 1931, diverts water from Red Blanket Creek into Main power canal to supplement flow of Rogue River above Prospect diversion dam.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	95	93	88	97	95	90	5.5	4.5	100	102	100
2	101	95	92	88	97	96	90	5.2	25	100	102	98
3	94	93	92	92	96	96	*90	5.0	49	100	102	*97
4	90	93	88	96	96	96	90	5.0	80	100	102	97
5	90	92	84	*95	96	96	90	5.0	86	100	102	101
6	86	90	85	95	96	96	90	5.5	88	100	102	100
7	81	86	86	95	96	96	41	5.5	88	100	102	99
8	79	85	96	95	95	96	6.4	*5.2	88	*100	102	97
9	77	85	96	95	95	96	6.4	5.2	88	100	102	97
10	76	94	95	95	95	95	6.2	5.0	87	100	101	98
11	90	98	95	95	95	95	6.2	4.9	87	100	101	97
12	97	102	95	95	95	95	6.1	5.2	86	100	101	97
13	89	97	95	94	95	95	6.1	5.0	86	100	101	96
14	88	92	95	92	95	95	6.1	4.9	86	100	101	94
15	94	92	95	92	*96	95	6.1	4.9	86	99	101	92
16	93	*95	95	92	96	95	6.0	4.9	86	92	101	90
17	93	98	95	94	97	96	6.0	4.9	86	82	101	90
18	92	96	95	95	97	96	6.0	4.9	86	92	101	90
19	95	97	95	95	97	96	6.0	4.9	86	99	101	89
20	95	97	99	95	96	96	5.8	4.8	87	99	101	89
21	96	97	100	95	96	96	5.8	4.8	87	99	101	89
22	97	96	100	95	96	96	5.8	4.8	87	99	101	89
23	94	97	95	95	97	96	5.8	4.8	87	99	101	89
24	88	96	90	95	96	96	5.8	4.8	87	98	101	88
25	92	96	90	96	96	96	5.6	4.8	87	98	101	88
26	94	97	90	96	96	96	5.5	4.8	87	99	101	88
27	95	97	90	96	96	97	5.5	4.9	97	99	100	88
28	95	95	89	96	96	95	5.5	4.8	104	100	101	86
29	95	90	90	97	96	91	5.5	4.6	104	101	101	86
30	95	92	89	97	-	90	5.5	4.6	101	101	101	86
31	95	-	88	97	-	90	-	4.6	-	102	101	-
Total	2,832	2,825	2,872	2,928	2,783	2,951	716.7	153.7	2,473.5	3,058	3,139	2,785
Mean	91.4	94.2	92.6	94.5	96.0	95.2	23.9	4.96	82.4	98.6	101	92.8
Ac-ft	5,620	5,600	5,700	5,810	5,520	5,850	1,420	305	4,910	6,070	6,230	5,520

Calendar year 1951: Max 102 Min 4.9 Mean 81.5 Ac-ft 59,010
Water year 1951-52: Max 104 Min 4.5 Mean 80.6 Ac-ft 58,560

* Discharge measurement made on this day.

Main power canal below all feeders, near Prospect, Oreg.

Location.--Lat 42°45', long. 122°28', in SW¼ sec. 28, T. 32 S., R. 3 E., on left bank 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.

Records available.--November 1931 to September 1952 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,599.0 ft above mean sea level, datum of 1929.

Average discharge.--20 years (1932-52), 263 cfs.

Extremes.--1931-52: Maximum daily discharge, 423 cfs June 23-28, 1936; no flow at times.

Remarks.--Records 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.

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	308	335	193	299	294	303	254	0	157	266	329	329
2	280	331	193	310	252	303	254	0	173	265	329	332
3	253	327	194	335	247	305	*256	0	206	265	327	335
4	300	331	191	*340	246	307	248	0	238	265	329	*346
5	321	331	187	340	243	318	246	0	244	265	329	354
6	316	324	185	339	241	332	246	0	247	264	342	346
7	308	319	185	340	243	331	109	0	247	265	351	346
8	305	313	250	340	246	329	0	0	247	*265	352	346
9	300	266	305	340	246	331	0	0	246	265	351	342
10	299	224	305	342	246	327	0	*0	246	265	351	344
11	315	230	305	342	246	315	0	0	172	262	349	342
12	299	223	303	349	246	335	0	2.4	194	265	347	344
13	315	266	302	357	*246	335	0	9.6	247	265	346	344
14	307	276	295	354	244	334	0	10	248	264	347	344
15	248	274	292	352	247	332	0	10	137	264	346	340
16	294	*276	292	349	247	331	0	57	194	256	346	340
17	313	276	292	346	247	335	0	125	247	244	339	340
18	310	274	297	346	246	342	0	130	247	254	337	337
19	315	270	292	344	244	340	0	138	247	262	337	337
20	307	262	291	344	244	335	0	138	248	260	340	337
21	294	286	292	342	244	340	0	138	248	262	339	335
22	292	337	310	339	244	346	0	138	250	260	339	337
23	252	349	311	334	244	347	0	138	252	260	337	337
24	238	352	308	334	244	265	0	144	253	259	335	337
25	259	362	307	334	268	231	0	149	247	262	334	337
26	259	327	305	334	303	246	0	149	254	268	335	337
27	294	321	308	331	305	262	0	151	268	236	335	337
28	324	213	307	329	303	256	0	140	276	280	337	337
29	316	190	307	329	303	253	0	156	272	307	334	335
30	329	190	303	324	-	254	0	155	268	326	334	288
31	339	-	302	315	-	254	-	155	-	332	331	-
Total	9,209	8,655	8,509	10,453	7,419	9,574	1,613	2,232.0	7,020	8,298	10,514	10,142
Mean	297	288	274	337	256	309	53.8	72.0	234	268	339	338
Ac-ft	18,270	17,170	16,880	20,730	14,720	18,990	3,200	4,430	13,920	16,460	20,850	20,120

Calendar year 1951: Max 362 Min 2 Mean 255 Ac-ft 184,500
Water year 1951-52: Max 357 Min 0 Mean 256 Ac-ft 185,700

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

Rogue River below South Fork Rogue River, near Prospect, Oreg.

Location.--Lat 42°42', long. 122°36', in NW¼ sec. 16, T. 33 S., R. 2 E., on right bank at downstream side of highway bridge, 6 miles southwest of Prospect, and at mile 160.4 (Geological Survey river-profile survey).

Drainage area.--643 sq mi.

Records available.--April 1929 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,708 ft (from river-profile map).

Average discharge.-- 23 years, 1,699 cfs.

Extremes.--Maximum discharge during year, 6,200 cfs Dec. 1 (gage height, 5.45 ft); minimum, 788 cfs Oct. 8; minimum daily, 1,170 cfs Oct. 9, 10.
1929-52: Maximum discharge, 19,800 cfs Dec. 28, 1945 (gage height, 12.2 ft), from rating curve extended above 5,000 cfs on basis of slope-area determination at gage height 8.6 ft; minimum since intake was lowered Aug. 18, 1934, 493 cfs Sept. 1, 1934 (prior to Aug. 18, 1934, minimum discharge not determined).

Remarks.--Records good. Small diversions above station for irrigation: Considerable diurnal fluctuation caused by powerplant 4 miles above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.1	1,160
2.0	1,920
4.0	4,130
5.0	5,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1,420	1,420	5,180	2,400	3,890	2,030	2,960	4,020	4,130	*2,860	1,700	1,410
2	1,690	1,390	3,690	2,180	5,080	1,970	2,950	3,710	4,050	2,760	1,690	1,390
3	1,840	1,380	3,270	2,140	3,930	1,970	2,880	3,470	4,090	2,770	1,670	1,390
4	1,420	1,400	3,170	2,120	3,540	1,930	2,960	3,270	4,160	2,790	1,710	1,420
5	1,270	1,370	2,970	*2,020	3,330	1,890	*3,380	3,200	4,390	2,740	1,650	*1,570
6	1,220	1,350	2,550	1,960	3,080	1,860	3,950	3,290	4,580	2,620	1,600	1,440
7	1,220	1,340	2,250	1,900	2,870	1,830	4,310	3,580	4,350	2,530	1,630	1,420
8	1,180	1,280	2,140	1,850	2,730	1,800	4,170	4,430	4,320	2,500	1,600	1,410
9	1,170	1,310	1,990	1,800	2,620	1,840	3,790	4,030	4,340	2,480	1,580	1,550
10	1,170	1,540	1,930	1,830	2,540	2,010	3,600	3,940	3,930	2,430	1,590	1,490
11	1,260	1,860	1,930	1,780	2,580	1,930	3,600	4,130	3,550	2,360	1,560	1,450
12	1,550	3,150	1,920	1,730	2,510	1,920	3,550	*4,250	3,260	2,300	1,540	1,420
13	1,380	2,720	1,920	1,680	2,380	1,860	3,710	4,530	3,090	2,230	1,540	1,410
14	1,340	*3,090	1,880	1,700	2,350	1,840	3,850	4,400	3,100	2,180	1,530	1,390
15	2,110	2,500	1,810	1,700	*2,610	1,830	3,570	4,050	2,980	2,140	1,500	1,370
16	1,570	2,120	1,830	1,630	3,470	1,810	3,430	4,090	2,890	2,090	1,500	1,380
17	1,380	1,920	1,760	1,560	3,050	1,770	3,540	4,470	2,940	2,020	1,500	1,370
18	1,340	1,830	1,920	1,580	2,770	1,800	4,030	4,650	3,050	1,990	1,500	1,360
19	1,380	1,760	1,850	1,600	2,600	1,770	4,400	4,860	3,020	1,940	1,490	1,360
20	1,480	1,750	1,780	1,600	2,450	1,730	3,930	4,820	3,070	1,910	1,480	1,350
21	1,640	1,720	1,760	1,560	2,310	1,700	3,690	4,440	2,990	1,890	1,470	1,340
22	1,760	1,640	2,460	1,570	2,250	1,690	3,690	4,290	2,890	1,870	1,470	1,340
23	2,860	1,590	3,270	1,560	2,250	1,780	3,790	4,470	3,260	1,830	1,460	1,330
24	2,450	1,540	3,300	1,580	2,150	2,840	4,090	4,750	3,290	1,820	1,460	1,320
25	2,010	1,530	2,730	1,600	2,210	3,210	4,460	4,960	2,990	1,790	1,460	1,320
26	1,780	1,650	2,550	1,590	2,070	3,200	4,720	4,870	2,650	1,780	1,450	1,330
27	1,660	1,740	3,390	1,620	2,060	3,230	4,710	4,990	2,940	1,750	1,450	1,330
28	1,590	2,890	3,570	1,600	2,050	3,310	4,920	*5,180	3,260	1,710	1,430	1,320
29	1,540	2,610	3,570	1,650	2,050	3,230	4,270	4,920	3,160	1,710	1,430	1,320
30	1,500	3,510	3,120	1,830	-	3,120	4,030	4,520	3,010	1,700	1,430	1,300
31	1,460	-	2,720	2,610	-	3,120	-	4,420	-	1,730	1,410	-
Total	48,640	56,900	80,180	55,530	79,780	67,820	114,930	133,000	103,930	67,220	47,480	41,600
Mean	1,569	1,897	2,586	1,791	2,751	2,188	3,831	4,290	3,464	2,168	1,532	1,387
Cfsm	2.44	2.95	4.02	2.79	4.28	3.40	5.96	6.67	5.39	3.37	2.38	2.16
In.	2.81	3.29	4.64	3.21	4.61	3.92	6.65	7.69	6.01	3.89	2.75	2.41
Ac-ft	96,480	112,900	159,000	110,100	158,200	134,500	228,000	263,800	206,100	133,300	94,180	82,510

Calendar year 1951: Max 6,830 Min 1,160 Mean 2,255 Cfsm 3.51 In. 47.60 Ac-ft 1,632,000
Water year 1951-52: Max 5,180 Min 1,170 Mean 2,451 Cfsm 3.81 In. 51.88 Ac-ft 1,779,000

Peak discharge (base, 5,300 cfs).--Dec. 1 (11 a.m.) 6,200 cfs (5.45 ft); Feb. 2 (3:30 a.m.) 5,720 cfs (5.15 ft); May 28 (7 a.m.) 5,700 cfs (5.13 ft).
* Discharge measurement made on this day.

South Fork Big Butte Creek near Butte Falls, Oreg.

Location.--Lat 42°32', long. 122°33', in SW¼ sec. 11, T. 35 S., R. 2 E., on right bank just downstream from Ginger Creek and 1 mile east of Butte Falls.

Drainage area.--135 sq mi.

Records available.--September 1910 to October 1911, August to October 1915, October 1917 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 2,360 ft (from river-profile map). Sept. 20, 1910, to Sept. 30, 1922, staff gage at site 300 ft upstream at different datum. Aug. 23, 1922, to Mar. 31, 1925, water-stage recorder at site 1 mile downstream at different datum.

Average discharge.--36 years (1910-11, 1917-52), 161 cfs.

Extremes.--Maximum discharge during year, 1,130 cfs Feb. 2 (gage height, 2.62 ft); minimum, 82 cfs Sept. 2 (gage height, 0.65 ft).
1910-11, 1915, 1917-52: Maximum discharge, 2,470 cfs Feb. 20, 1927 (gage height, 4.05 ft), from rating curve extended above 1,600 cfs; minimum, 39 cfs Oct. 14, 1931 (gage height, 0.32 ft).

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Diversions for irrigation of about 1,000 acres above station and since 1927 for Medford municipal supply. No regulation.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.6	72
1.0	172
1.5	387
2.0	695
2.5	1,040

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a90	95	224	433	816	310	451	324	188	149	110	87
2	127	93	220	360	1,030	296	445	296	182	136	112	85
3	130	95	243	320	781	291	*428	277	175	127	115	87
4	117	95	305	300	656	286	451	264	166	125	110	87
5	105	95	300	286	565	269	505	247	158	120	105	87
6	95	98	235	269	499	256	547	256	169	117	100	85
7	93	98	195	252	439	243	578	305	166	117	98	87
8	91	95	182	235	399	232	553	422	160	122	*95	89
9	93	93	163	220	360	252	505	371	155	120	95	103
10	95	143	158	220	339	339	481	334	155	115	98	*100
11	100	225	*158	213	339	320	451	315	158	115	98	a98
12	117	445	155	198	324	310	433	305	158	112	98	a95
13	117	355	152	195	300	291	433	*300	155	115	98	a94
14	a130	393	146	195	300	277	439	296	198	112	98	a92
15	a150	282	143	188	376	269	399	282	216	*115	95	a90
16	120	209	155	179	802	256	376	264	188	115	95	a90
17	*107	*175	146	169	630	247	371	264	166	115	93	89
18	110	160	179	172	523	264	382	256	*155	112	93	89
19	103	149	166	169	445	247	393	256	149	110	93	89
20	100	143	146	175	404	235	371	256	158	110	93	89
21	105	138	138	166	350	228	345	243	166	110	93	89
22	110	127	252	160	324	228	334	232	160	107	93	89
23	214	120	559	149	324	264	329	224	175	107	*91	89
24	195	115	695	158	305	630	329	220	172	105	91	89
25	175	112	547	160	305	721	339	220	155	105	91	89
26	125	*122	481	158	315	702	350	213	146	105	89	89
27	115	130	714	158	315	662	345	205	155	a105	91	89
28	110	198	747	160	*320	636	366	202	175	a105	91	89
29	103	182	788	*185	320	598	339	198	175	a105	89	89
30	98	172	676	273	-	529	324	192	166	103	87	89
31	98	-	529	511	-	493	-	192	-	105	87	-
Total	3,638	4,952	9,897	6,986	13,205	11,181	12,392	8,231	5,020	3,543	2,985	2,702
Mean	117	165	319	225	455	361	413	266	167	114	96.3	90.1
Ac-ft	7,220	9,820	19,630	13,860	26,190	22,180	24,580	16,330	9,960	7,030	5,920	5,360

Calendar year 1951: Max 956 Min 85 Mean 218 Ac-ft 158,000
Water year 1951-52: Max 1,030 Min 85 Mean 232 Ac-ft 168,100

Peak discharge (base, 450 cfs).--Nov. 12 (5 to 8 p.m.) 481 cfs (1.66 ft); Dec. 24 (1 a.m.) 823 cfs (2.19 ft); Dec. 29 (5 to 6 p.m.) 900 cfs (2.30 ft); Feb. 2 (6 a.m.) 1,130 cfs (2.62 ft); Feb. 16 (6 a.m.) 872 cfs (2.26 ft); Mar. 25 (12 m. to 4 p.m.) 734 cfs (2.06 ft); Apr. 7 (7 a.m. to 2 p.m.) 584 cfs (1.83 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Big Butte Creek near McLeod.

Big Butte Creek near McLeod, Oreg.

Location.--Lat 42°39'25", long. 122°41'20", in NW¼ sec. 3, T. 34 S., R. 1 E., on right bank 50 ft downstream from highway bridge, 1 mile upstream from mouth, and 1 mile south of McLeod.

Drainage area.--249 sq mi.

Records available.--October 1945 to September 1952.

Gage.--Staff gage read twice daily. Datum of gage is 1,526.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--7 years, 327 cfs.

Extremes.--Maximum discharge during year, 3,060 cfs Feb. 1 (gage height, 7.6 ft, from floodmark); minimum, 77 cfs Aug. 23, 24.
1945-52: Maximum discharge, 4,680 cfs Jan. 7, 1948 (gage height, 9.4 ft, from floodmark), from rating curve extended above 2,700 cfs by logarithmic plotting; minimum observed, 70 cfs Sept. 23, 1947.

Remarks.--Records fair. Slight regulation by fish hatchery 600 ft above station. Several diversions in vicinity of Butte Falls, the two largest being the city of Medford diversion and Eagle Point Irrigation District canal.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.4	67	5.0	1,470
1.7	123	7.0	2,620
2.0	198	8.0	3,380
3.0	550		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*109	171	750	831	2,380	662	876	449	201	*171	99	80
2	171	158	614	686	2,350	606	876	410	198	156	95	80
3	216	146	750	622	1,730	606	849	365	187	151	97	80
4	176	146	795	590	1,420	610	867	344	179	154	99	81
5	166	146	840	546	1,230	554	*876	320	176	141	93	*83
6	164	168	570	506	1,040	526	970	344	182	137	87	81
7	156	176	449	486	916	486	1,020	407	182	132	87	80
8	151	174	400	452	826	478	944	626	171	132	87	81
9	156	176	337	421	750	463	876	510	166	125	85	99
10	158	244	323	494	702	566	808	446	171	121	85	141
11	201	618	326	452	710	618	786	428	171	119	85	97
12	171	849	306	386	658	630	730	*404	171	119	83	93
13	166	678	309	386	638	562	710	400	179	119	83	87
14	174	808	292	432	630	538	710	382	216	119	81	87
15	295	542	278	396	885	506	682	351	222	119	81	85
16	204	*396	281	351	1,900	494	638	337	176	119	81	83
17	184	340	292	323	1,420	463	622	330	166	119	80	83
18	171	302	470	330	*1,130	558	606	323	161	115	80	83
19	171	267	466	330	980	518	606	316	156	115	80	83
20	198	267	407	400	898	494	574	320	154	115	80	80
21	187	244	365	365	795	478	526	302	156	111	78	83
22	201	228	750	348	746	456	502	281	156	105	78	83
23	470	219	1,570	354	813	590	486	270	176	103	77	83
24	393	216	*1,550	546	742	1,570	482	260	182	101	78	80
25	288	207	1,100	490	706	1,500	494	254	166	99	80	83
26	228	247	1,070	502	710	1,400	498	247	158	99	80	83
27	198	234	1,960	448	702	1,310	486	241	182	99	80	83
28	195	550	1,860	463	698	1,270	510	238	216	99	80	80
29	179	390	2,420	534	694	1,140	463	228	210	97	80	80
30	171	534	1,460	840	-	1,020	449	222	190	95	80	80
31	171	-	1,040	1,820	-	993	-	210	-	97	80	-
Total	6,239	9,841	24,400	15,931	29,799	22,665	20,522	10,565	5,377	3,703	2,599	2,565
Mean	201	328	787	514	1,028	731	684	341	179	119	83.8	85.5
Ac-ft	12,370	19,520	48,400	31,600	59,110	44,960	40,700	20,960	10,670	7,340	5,160	5,090

Calendar year 1951: Max 2,420 Min 80 Mean 391 Ac-ft 282,800
Water year 1951-52: Max 2,420 Min 77 Mean 421 Ac-ft 305,900

* Discharge measurement made on this day.

23.02

Elk Creek near Trail, Oreg.

Location.--Lat 42°40', long. 122°45', in SE¼ sec. 30, T. 33 S., R. 1 E., on right bank 0.7 mile upstream from mouth and 3½ miles northeast of Trail.

Drainage area.--133 sq mi.

Records available.--October 1945 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,468.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 5, 1946, staff gages at various sites within half a mile of present site at different datums. July 5, 1946, to June 22, 1950, staff gage at present site and datum.

Average discharge.--7 years, 234 cfs.

Extremes.--Maximum discharge during year, 5,300 cfs Feb. 1 (gage height, 9.36 ft); minimum not determined.
1945-52: Maximum discharge, 9,880 cfs Dec. 28, 1945 (gage height, 13.2 ft, from floodmark, present site and datum); minimum observed, 0.9 cfs Aug. 29, 1946.

Remarks.--Records good except those for periods of shifting control or no gage-height record, which are poor. No regulation. Several small diversions above station for irrigation.

Rating table, water year 1951-52, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.2	3.0	1.5	135
.3	6.0	2.0	250
.5	15	3.0	580
.7	29	5.0	1,580
1.0	59	8.0	3,930

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	28	2,150	516	3,460	512	584	232	92	*82	a10	a3.3
2	9.7	25	945	386	3,340	420	576	205	85	68	10	a3.3
3	27	24	1,000	320	1,740	371	556	182	76	57	10	a4.5
4	18	23	1,340	277	1,390	353	612	159	75	51	11	a6.0
5	12	21	1,160	*242	1,240	314	*814	147	73	46	11	*4.0
6	10	20	642	220	1,020	288	900	157	72	43	12	3.6
7	7.5	19	412	195	876	266	845	173	63	40	10	3.9
8	6.4	*19	305	179	836	253	656	482	60	37	*9.4	4.5
9	5.3	19	240	173	791	314	520	350	59	36	9.2	6.8
10	3.7	36	200	248	728	580	472	288	59	31	8.8	a10
11	7.1	314	238	242	796	500	472	264	58	28	7.6	a8.5
12	46	829	389	208	724	426	448	*242	59	27	7.6	a7.0
13	30	583	416	184	556	368	479	240	56	27	7.6	a5.5
14	23	851	326	193	479	335	524	218	68	23	7.6	a5.0
15	72	445	253	175	762	299	420	193	68	22	6.8	a4.5
16	35	*259	220	153	1,850	291	371	184	55	a21	6.8	a4.2
17	17	174	212	135	1,080	297	392	188	49	a20	6.0	a4.0
18	12	132	416	131	*760	329	472	193	48	a19	5.4	a3.8
19	13	107	572	131	584	323	479	193	45	a18	5.4	a3.6
20	16	98	374	151	476	288	371	179	42	a17	5.4	a3.5
21	59	86	297	151	395	285	317	164	44	a16	5.1	a3.4
22	76	75	937	147	359	308	311	151	40	16	4.5	a3.3
23	568	68	1,870	149	372	495	314	145	54	a15	3.9	a3.2
24	365	63	*1,850	299	402	2,540	341	143	51	a14	3.9	a3.1
25	174	59	925	479	476	1,910	368	143	47	a14	a3.7	a3.1
26	98	64	773	500	613	1,430	371	133	45	a13	a3.7	a3.0
27	70	80	2,080	596	742	1,210	347	126	50	a13	a3.7	a2.9
28	54	700	1,740	624	719	1,110	329	119	88	a12	a3.5	a2.8
29	45	459	1,960	796	620	863	269	111	111	a12	a3.5	a2.8
30	39	1,300	1,290	1,240	-	706	250	106	104	a11	a3.5	a2.7
31	33	-	768	2,190	-	683	-	100	-	a11	a3.3	-
Total	1,955.6	6,980	26,300	11,630	28,186	18,667	14,180	5,910	1,896	860	209.9	129.8
Mean	63.1	233	848	375	972	602	473	191	63.2	27.7	6.77	4.33
Ac-ft	3,880	13,840	52,170	23,070	55,910	37,030	28,130	11,720	3,760	1,710	416	257

Calendar year 1951: Max 2,940 Min 1.2 Mean 293 Ac-ft 212,000
Water year 1951-52: Max 3,460 Min 2.7 Mean 319 Ac-ft 231,900

32.66

Peak discharge (base, 2,700 cfs).--Dec. 1 (7:30 a.m.) 3,200 cfs (7.19 ft); Dec. 23 (11:30 p.m.) 2,890 cfs (6.82 ft); Feb. 1 (9:30 p.m.) 5,300 cfs (9.36 ft); Mar. 24 (8:30 a.m.) 3,010 cfs (6.98 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Big Butte Creek near McLeod, South Fork Big Butte Creek near Butte Falls, and South Umpqua River at Tiller.
Note.--Shifting-control method used Oct. 1 to Nov. 29, Feb. 23-26, Aug. 2-24, Sept. 5-9.

Rogue River at Dodge Bridge, near Eagle Point, Oreg.

Location.--Lat 42°31'30", long. 122°50'30", in SE¼ sec. 17, T 35 S., R. 1 W., on right bank at Dodge Bridge 0.6 mile downstream from Reese Creek, 4½ miles northwest of Eagle Point, and at mile 134.9 (Geological Survey river-profile survey).

Drainage area.--1,210 sq mi, approximately.

Records available.--October 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,273.66 ft above mean sea level, datum of 1929. Prior to Dec. 21, 1938, staff gage at same site and datum.

Average discharge.--14 years, 2,520 cfs.

Extremes.--Maximum discharge during year, 17,400 cfs Feb. 1 (gage height, 7.15 ft); minimum, 1,130 cfs Sept. 15; minimum daily, 1,320 cfs Sept. 30.
1938-52: Maximum discharge, 41,900 cfs Dec. 28, 1945 (gage height, 11.52 ft), from rating curve extended above 30,000 cfs; minimum, 611 cfs Aug. 6, 14, 29, Sept. 9, 1940 (gage height, 0.99 ft); minimum daily, 830 cfs 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 powerplant about 30 miles upstream.

Revisions (water years).--W 1094: 1942(M), 1943, 1945(M), 1946.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.4	1,240
2.0	2,120
4.0	6,420
7.0	16,700

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,540	1,620	9,880	4,520	12,900	3,530	4,810	4,890	4,590	3,250	1,760	1,410
2	1,910	1,580	6,160	3,840	13,500	3,330	4,760	4,560	4,480	3,090	1,720	1,410
3	2,340	1,510	6,390	3,530	9,320	3,230	4,630	4,230	4,450	3,030	1,720	1,410
4	1,770	1,550	6,640	3,430	7,600	3,190	4,650	3,950	4,540	3,050	1,770	1,410
5	1,510	1,540	6,000	*3,190	6,760	3,030	5,320	3,820	4,650	3,010	1,710	1,620
6	1,430	1,510	4,480	3,030	5,900	2,880	6,060	3,930	4,890	2,860	1,680	1,470
7	1,400	1,500	3,610	2,880	5,320	2,760	6,420	4,300	4,670	2,730	1,650	1,470
8	1,340	1,440	3,210	2,760	4,960	2,710	6,080	5,730	4,630	2,690	1,650	*1,450
9	1,340	1,510	2,880	2,710	4,720	2,760	5,490	5,180	4,650	2,670	1,620	1,620
10	1,340	1,760	2,690	3,490	4,500	3,530	5,180	4,870	4,340	2,610	1,640	1,680
11	1,440	2,820	2,690	3,050	4,610	3,390	5,110	4,980	3,930	2,540	1,610	1,510
12	1,820	5,400	2,860	2,750	4,500	3,330	5,000	5,030	3,670	2,480	1,590	1,480
13	1,820	4,430	2,900	2,560	4,060	3,130	5,140	5,250	3,450	2,350	1,570	1,450
14	1,540	5,230	2,710	2,730	3,930	2,960	5,470	*5,140	3,470	2,340	1,550	1,440
15	2,610	3,970	2,580	2,610	4,810	2,840	4,980	4,780	3,410	2,250	1,550	1,410
16	2,010	3,130	2,520	2,440	9,710	2,760	4,760	4,720	3,270	2,190	1,550	1,400
17	1,650	2,670	2,460	2,230	6,730	2,750	4,760	5,030	3,190	2,160	1,550	1,380
18	1,570	2,410	2,970	2,250	5,490	3,050	5,200	5,180	3,310	*2,100	1,540	1,380
19	1,610	2,250	3,490	2,260	4,830	3,130	5,680	5,420	3,310	2,080	1,520	1,400
20	1,660	*2,170	2,940	2,480	4,500	3,030	5,140	5,420	3,350	2,010	1,520	1,370
21	2,010	2,120	2,710	2,350	4,010	2,900	4,760	5,050	3,310	1,980	1,510	1,370
22	2,070	2,010	4,370	2,370	3,950	2,840	4,670	4,870	3,170	1,940	1,510	1,370
23	4,070	1,930	8,180	2,500	4,280	3,390	4,780	4,890	3,430	1,910	1,500	1,340
24	3,840	1,860	8,620	3,410	3,970	8,870	5,030	5,180	3,650	1,880	1,510	1,340
25	2,780	1,830	5,610	3,490	*3,840	7,840	5,370	5,400	3,330	1,850	1,510	1,340
26	2,260	1,940	5,050	3,550	3,900	6,840	5,710	5,320	3,150	1,830	1,500	1,340
27	2,010	2,140	9,850	3,570	3,990	6,320	5,710	5,370	3,210	1,800	1,480	1,340
28	1,880	4,760	8,910	3,530	3,880	6,160	5,850	5,590	3,690	1,760	1,470	1,340
29	1,800	3,860	10,400	3,860	3,730	5,680	5,230	5,370	3,610	1,740	1,470	1,330
30	1,720	6,260	7,690	5,110	-	5,250	4,850	4,980	3,490	1,740	1,430	1,320
31	1,650	-	5,490	8,680	-	5,180	-	4,870	-	1,780	1,440	-
Total	59,520	78,710	156,940	101,140	164,180	122,590	156,600	153,300	114,290	71,680	48,800	42,600
Mean	1,920	2,624	5,063	3,263	5,661	3,955	5,220	4,945	3,810	2,312	1,574	1,420
Ac-ft	118,100	156,100	311,300	200,600	325,600	243,200	310,600	304,100	226,700	142,200	96,790	84,500

Calendar year 1951: Max 15,200 Min 1,230 Mean 3,215 Ac-ft 2,328,000
Water year 1951-52: Max 13,500 Min 1,320 Mean 3,471 Ac-ft 2,520,000

Peak discharge (base, 9,000 cfs).--Dec. 1 (8:30 a.m.) 12,100 cfs (5.78 ft); Dec. 23 (12 p.m.) 12,100 cfs (5.79 ft); Dec. 27 (11 a.m.) 11,200 cfs (5.54 ft); Dec. 29 (5 p.m.) 12,500 cfs (5.92 ft); Feb. 1 (10 p.m.) 17,400 cfs (7.15 ft); Feb. 16 (3:30 a.m.) 12,500 cfs (5.92 ft); Mar. 24 (9:30 a.m.) 9,650 cfs (5.06 ft).
* Discharge measurement made on this day.

South Fork Little Butte Creek near Lake Creek, Oreg.

Location.--Lat 42°24'30", long. 122°36'00", in SE¼ sec. 29, T. 36 S., R. 2 E., on left bank a quarter of a mile upstream from intake of Rogue River Valley Canal and 1½ miles southeast of Lake Creek Post Office.

Drainage area.--138 sq mi.

Records available.--April 1921 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,720 ft (by barometer). Prior to June 17, 1921, staff gage at same site and datum.

Average discharge.--31 years, 103 cfs.

Extremes.--Maximum discharge during year, 1,570 cfs Mar. 24 (gage height, 4.41 ft), from rating curve extended above 840 cfs by logarithmic plotting; minimum, 16 cfs Oct. 9.
1921-52: Maximum discharge, 3,920 cfs Jan. 7, 1948 (gage height, 6.48 ft), from rating curve extended above 840 cfs by logarithmic plotting; minimum, 2 cfs Aug. 10, 1931 (gage height, 0.97 ft).

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

Revisions (water years).--W 934: 1925(M).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	26	232	227	395	191	470	436	230	74	34	25
2	28	26	223	183	467	171	460	395	210	68	28	24
3	29	28	223	164	340	168	450	362	198	63	27	25
4	23	29	304	160	291	160	500	331	182	59	28	26
5	20	29	227	138	255	145	579	318	170	54	28	26
6	19	28	164	125	227	135	623	318	182	50	28	26
7	18	28	118	115	207	128	640	395	163	45	27	26
8	17	28	105	105	191	122	606	490	146	43	28	27
9	16	28	85	96	179	142	552	430	138	45	26	*34
10	17	54	*82	102	168	195	525	410	132	43	26	32
11	23	100	79	96	171	168	525	395	129	*40	23	30
12	*30	288	79	82	*156	153	520	*395	126	43	*24	27
13	25	185	79	79	*138	135	535	395	114	43	23	26
14	26	385	69	85	145	128	535	380	135	40	22	26
15	49	*239	67	79	263	128	480	354	a145	39	23	24
16	30	142	76	71	677	135	465	340	a110	39	25	23
17	26	102	76	67	405	125	470	344	*92	39	26	22
18	25	85	105	67	322	156	510	340	86	39	25	22
19	25	76	108	60	291	153	535	349	84	36	25	20
20	25	76	90	67	268	149	485	354	81	35	25	20
21	30	69	82	64	239	*153	465	331	95	32	25	20
22	40	58	274	64	227	145	*460	313	76	32	25	21
23	76	53	683	99	247	232	460	313	89	34	24	*21
24	65	50	588	164	247	1,260	475	313	81	32	26	21
25	41	50	340	128	247	1,050	495	313	74	32	25	a21
26	34	*53	370	122	264	947	500	304	72	32	28	a21
27	32	58	890	115	255	832	510	295	84	31	27	a21
28	29	108	*643	118	235	760	520	295	98	30	27	a21
29	29	82	522	149	211	667	465	277	92	30	27	21
30	28	82	395	171	-	579	450	259	84	31	26	21
31	28	-	300	260	-	515	-	246	-	31	28	-
Total	925	2,645	7,678	3,622	7,728	10,127	15,265	10,789	3,698	1,284	807	720
Mean	29.8	88.2	248	117	266	327	509	348	123	41.4	26.0	24.0
Ac-ft	1,830	5,250	15,230	7,180	15,330	20,090	30,280	21,400	7,330	2,550	1,600	1,430

Calendar year 1951: Max 957 Min 12 Mean 134 Ac-ft 98,860
Water year 1951-52: Max 1,260 Min 16 Mean 178 Ac-ft 129,500

17.56

Peak discharge (base, 500 cfs).--Dec. 23 (11 p.m.) 1,090 cfs (3.77 ft); Dec. 27 (8 a.m.) 1,170 cfs (3.88 ft); Feb. 1 (8 p.m.) 648 cfs (3.07 ft); Feb. 16 (1 a.m.) 1,290 cfs (4.06 ft); Mar. 24 (4 p.m.) 1,570 cfs (4.41 ft); Apr. 7 (10 p.m.) 672 cfs (3.05 ft); Apr. 19 (1 a.m.) 572 cfs (2.87 ft); May 8 (8 a.m.) 520 cfs (2.77 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for South Fork Big Butte Creek near Butte Falls.

North Fork Little Butte Creek at Fish Lake, near Lake Creek, Oreg.

Location.--Lat 42°23', long. 122°21', in SE¼ sec. 4, T 37 S., R. 4 E., on right bank half a mile downstream from outlet of Fish Lake and 14 miles east of Lake Creek Post Office.

Drainage area.--18 sq mi, approximately.

Records available.--October 1914 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 4,571.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 21, 1914, to July 20, 1915, staff gage just above wasteway in temporary dam at different datum. June 11, 1916, to July 9, 1918, staff gage and July 10, 1918, to Oct. 28, 1932, water-stage recorder, at site a quarter of a mile upstream at different datums.

Average discharge.--36 years (1916-52), 34.4 cfs.

Extremes.--Maximum discharge during year, 126 cfs Aug. 6; minimum, 3.5 cfs Oct. 3-14.
1914-52: Maximum discharge, about 940 cfs June 5, 1917, computed from rate of change in contents of reservoir after break in dam occurred (occurred during period of no gage-height record); no flow at times.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Flow regulated by Fish Lake. 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.

Revisions (water years).--W 654: Drainage area. W 1218: 1917(M).

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	9.5	18	22	a23	24	28	46	77	63	115	102
2	8	9.5	18	22	a23	24	29	47	75	63	115	104
3	a3.5	10	18	22	a23	24	29	47	75	63	113	104
4	a3.5	10	18	22	23	24	30	47	75	61	109	106
5	a3.5	11	18	22	23	24	30	47	74	60	106	92
6	a3.5	11	18	22	23	24	31	47	71	58	119	77
7	a3.5	11	18	22	23	24	31	47	66	85	121	77
8	a3.5	11	19	22	23	24	32	49	67	*94	*119	*77
9	a3.5	*11	18	21	23	24	32	49	66	88	119	61
10	a3.5	12	19	21	23	24	33	49	66	109	117	44
11	a3.5	13	18	22	23	25	33	49	64	98	121	46
12	a3.5	14	19	22	23	24	33	54	64	98	117	33
13	a3.5	14	19	22	23	25	34	94	63	100	106	30
14	*3.5	15	a19	22	23	25	33	119	64	100	117	30
15	4	15	a19	22	23	25	34	102	66	64	117	29
16	4	15	a19	22	24	24	35	81	66	61	115	29
17	4	15	a19	22	23	24	37	75	66	96	106	35
18	4.5	15	a19	22	23	24	38	74	64	106	98	54
19	6	16	a19	22	24	25	38	77	66	109	100	*66
20	6.5	16	19	22	24	24	38	85	64	106	113	83
21	7	16	19	22	24	25	38	100	63	106	109	71
22	a7	16	20	22	24	24	38	94	64	115	102	67
23	7	a16	21	22	24	26	40	86	63	113	94	71
24	7	a16	20	22	24	27	41	86	63	92	98	72
25	7	16	20	23	24	27	42	85	61	79	92	72
26	7	16	21	23	24	28	44	79	63	117	85	74
27	7	18	21	22	24	29	46	79	61	115	75	72
28	7.5	18	22	23	24	29	46	77	61	115	*72	72
29	8	18	22	22	24	29	46	75	61	115	75	71
30	8	18	22	23	-	30	47	77	61	115	81	71
31	8	-	22	23	-	29	-	77	-	115	100	-
Total	194.5	422.0	601	685	679	788	1,086	2,200	1,980	2,879	3,246	1,992
Mean	6.27	14.1	19.4	22.1	23.4	25.4	36.2	71.0	66.0	92.9	105	66.4
Ac-ft	386	837	1,190	1,360	1,350	1,560	2,150	4,360	3,930	5,710	6,440	3,950

Calendar year 1951: Max 150 Min 3.5 Mean 51.7 Ac-ft 37,390
Water year 1951-52: Max 121 Min 3.5 Mean 45.8 Ac-ft 33,220

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

North Fork Little Butte Creek near Lake Creek, Oreg.

Location.--Lat 42°24'10", long. 122°32'20", in SW¼ sec. 25, T. 36 S., R. 2 E., on right bank a quarter of a mile upstream from Hanley South Canal diversion and 4½ miles east of Lake Creek Post Office.

Drainage area.--38 sq mi, approximately.

Records available.--September 1911 to March 1913, May 1922 to September 1928 (incomplete), and October 1931 to September 1952 in reports of Geological Survey. September 1911 to March 1913 and May 1922 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Datum of gage is 2,125.01 ft above mean sea level, datum of 1929. Sept. 10, 1911, to Mar. 31, 1913, staff gages near present site at different datums.

Average discharge.--26 years (1911-12, 1922-23, 1928-52), 70.1 cfs.

Extremes.--Maximum discharge during year, 438 cfs Mar. 24 (gage height, 2.76 ft), from rating curve extended above 150 cfs; minimum, 23 cfs Oct. 8, 9 (gage height, 1.63 ft). 1911-13, 1922-28, 1931-52: Maximum discharge, 680 cfs Dec. 30, 1924 (gage height, 3.30 ft), from rating curve extended above 170 cfs; minimum, 11 cfs (computed on basis of records for station at Fish Lake, near Lake Creek) Oct. 29 to Nov. 8, 1931.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Flow regulated by Fish Lake. Diversions for irrigation of about 100 acres above station; some water diverted into Fish Lake from Fourmile Lake, in Klamath River basin, since September 1923.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
1.6	21	2.2	125	1.8	50	2.2	140
1.8	39	2.4	210	2.0	86	2.4	222
2.0	72	2.7	390				

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	31	59	74	137	86	105	108	125	103	158	131
2	53	31	61	70	133	84	105	105	122	103	155	134
3	29	31	62	64	104	84	100	108	122	100	155	134
4	25	32	72	64	95	84	100	105	119	100	151	134
5	24	32	66	61	88	79	105	103	119	100	144	128
6	24	32	59	61	84	79	108	108	119	100	155	110
7	24	32	52	59	79	77	108	119	113	*116	155	105
8	23	32	50	57	79	a75	105	144	110	128	151	108
9	23	32	49	55	a76	a80	100	125	110	122	151	*103
10	24	42	*49	57	a74	a90	a100	122	110	147	147	78
11	28	49	49	55	*74	a100	a100	125	113	140	147	80
12	*27	90	49	53	*72	a90	a100	*128	*113	140	151	63
13	25	72	49	53	68	a80	a100	158	113	137	*137	58
14	29	104	a50	53	70	a75	a100	177	119	137	158	56
15	35	*61	a50	53	98	a75	a98	151	113	105	158	56
16	27	50	a52	52	153	a80	a98	137	110	93	158	56
17	26	47	a55	52	116	a75	a98	125	*108	131	151	58
18	26	45	a80	52	107	a80	a100	125	108	144	140	80
19	27	45	a60	52	98	a90	a100	128	108	147	144	86
20	28	45	a55	53	95	a90	a98	134	108	147	155	108
21	28	43	a55	53	90	*90	a96	144	110	137	147	103
22	31	42	a80	52	88	81	*93	144	108	140	137	96
23	55	42	a150	57	93	113	96	137	110	151	125	*98
24	37	42	a140	81	93	341	98	137	108	140	125	100
25	32	42	a120	68	98	213	100	134	105	104	125	100
26	30	*43	a150	66	101	177	103	128	105	155	113	100
27	30	43	a180	64	98	151	105	122	108	151	110	100
28	30	52	*122	66	95	134	110	125	110	151	105	98
29	31	46	113	70	90	125	108	125	108	151	105	98
30	31	45	98	79	-	116	108	125	105	155	110	98
31	31	-	86	107	-	110	-	125	-	158	128	-
Total	946	1,375	2,402	1,913	2,746	3,304	3,045	3,981	3,359	4,033	4,351	2,857
Mean	30.5	45.8	77.5	61.7	94.7	107	102	128	112	130	140	95.2
Ac-ft	1,880	2,730	4,760	3,790	5,450	6,550	6,040	7,900	6,660	8,000	8,630	5,670

Calendar year 1951: Max 200 Min 23 Mean 86.7 Ac-ft 62,780
Water year 1951-52: Max 341 Min 23 Mean 93.7 Ac-ft 68,060

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for South Fork Big Butte Creek near Butte Falls and South Fork Little Butte Creek near Lake Creek.

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 SE¼ 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 North and South Canals and Eagle Point Canal are partly estimated.

Records for these canals, published as a group, are available from April 1929 to September 1952; 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 1951 to September 1952

Month	Hanley South Canal a/	Hanley North Canal b/	Rogue River Valley Canal below junction of intakes c/	Eagle Point Canal d/
October	-	-	-	-
November	-	-	-	-
December	-	-	-	-
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	-	-	-	-
May	-	-	6,780	-
June	-	-	7,180	-
July	-	-	7,830	-
August	361	615	8,280	1,020
September	319	592	5,300	887
Water year 1951-52	-	-	-	-

a/ Diversion began Apr. 22; daily discharge records July 7 to Sept. 30 in files of State engineer.
b/ Diversion began Apr. 28; daily discharge records July 7 to Sept. 30 in files of State engineer.
c/ Canal gates closed sometime after Oct. 15 and were opened Apr. 14; daily discharge records Oct. 1-12 and Apr. 21 to Sept. 30 in files of State engineer.
d/ Canal gates closed sometime after Oct. 5 and were opened Apr. 10; daily discharge records July 7 to Sept. 30 in files of State engineer.

Emigrant Creek near Ashland, Oreg.

Location.--Lat 42°09'50", long. 122°36'20", in NE¼ sec. 20, T. 39 S., R. 2 E., on right bank 1,100 ft downstream from Emigrant Gap Reservoir Dam and 6 miles southeast of Ashland.

Drainage area.--64.3 sq mi.

Records available.--January 1920 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,053.73 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to Oct. 1, 1926, water-stage recorders or staff gage at sites within 800 ft of present site at different datums.

Average discharge.--14 years (1924-28, 1929-30, 1933-35, 1940-47), 20.1 cfs.

Extremes.--Maximum discharge during year, 1,110 cfs Mar. 24 (gage height, 5.40 ft); no flow at times.
1920-52: Maximum discharge, 5,260 cfs Feb. 20, 1927, by computation of peak flow over dam; no flow at times.

Remarks.--Records fair except those for periods of no gage-height record and those below 1.0 cfs, which are poor. Flow regulated since December 1924 by Emigrant Gap Reservoir. Diversion 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 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Dec. 27 to Mar. 24; shifting-control method used Sept. 22-30)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
0.1	0.4	1.5	62	0.0	0	1.5	58
.3	1.8	2.0	127	.1	.3	2.0	120
.5	4.4	2.5	211	.3	1.5	2.5	200
.7	9.2	3.0	320	.5	4.0	3.0	310
1.0	22	4.0	630	.7	9.0	4.0	630
1.3	43	5.0	1,060	1.0	20	5.0	1,060
				1.3	39		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			-	219	138	8.5	180	34	0.7	0.6	33	12
2			-	211	161	.6	170	29	.6	.6	31	12
3			-	206	173	.6	166	28	.6	.6	30	12
4			-	200	179	.6	134	27	.6	.8	30	18
5			-	195	175	.6	200	14	.6	.9	30	*22
6			-	184	168	.8	246	1.4	.7	.9	29	20
7			-	175	*166	.8	252	1.6	.9	5.1	27	18
8			-	166	124	.8	224	42	.7	33	23	16
9			-	60	85	.8	186	*64	.8	33	21	6.9
10			-	21	86	.8	168	48	.8	33	15	2.3
11			-	20	88	.8	172	38	1.2	34	15	1.5
12			-	20	88	.8	171	34	1.2	34	34	a1.3
13			-	20	86	.8	156	33	1.2	34	33	a1.2
14			-	20	85	3.5	152	26	.7	34	*33	a1.0
15			-	89	85	12	132	20	.8	34	34	a.9
16			-	140	88	33	105	16	.9	35	34	.7
17			-	127	89	51	98	6.3	.7	*30	32	.8
18			-	116	88	84	102	1.5	.7	5.6	26	1.2
19			-	106	86	83	102	a1.0	.7	38	22	1.3
20			-	106	86	71	88	.9	.7	38	24	a1.0
21			-	97	88	70	78	.9	.8	38	27	a.5
22			-	88	85	78	74	1.0	.6	38	27	*.3
23			-	81	85	88	67	1.0	.6	46	27	.4
24			-	89	a85	*854	62	.9	.6	55	20	.4
25			-	101	a85	*690	58	.9	.6	36	13	.3
26			-	105	a85	498	58	.9	.6	34	13	.3
27			54	106	a80	375	54	.8	.6	34	13	.3
28			206	108	a50	308	52	.7	.6	33	12	.2
29			213	108	a30	272	44	.7	.6	33	13	.1
30			220	115	-	230	37	.7	.6	33	13	.1
31			220	122	-	200	-	.7	-	33	12	-
Total			-	3,521	2,997	4,017.8	3,788	474.9	22.0	838.1	746	153.0
Mean			-	114	103	130	126	15.3	0.73	27.0	24.1	5.10
Ac-ft			-	6,980	5,940	7,970	7,510	942	44	1,660	1,480	303

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Bear Creek at Medford, or interpolated
Note.--Probably no flow most of time Oct. 1 to Dec. 27.

Wagner Creek near Talent, Oreg.

Location.--Lat 42°11'40", long. 122°46'40", in NE¼ sec. 11, T. 39 S., R. 1 W., on left bank about half a mile upstream from upper intake of West and Fredericks laterals of Talent Irrigation District and 3 miles south of Talent.

Drainage area.--13.6 sq mi.

Records available.--July to October 1913, April 1951 to September 1952 (irrigation seasons only).

Gage.--Staff gage and Cippoletti weir. Altitude of gage is 2,200 ft (by barometer). Prior to Nov. 1, 1913, staff gage at site 3,000 ft downstream at different datum.

Extremes.--Maximum discharge during season, 28 cfs about May 28 (gage height, 1.38 ft, from floodmark); minimum observed, 0.8 cfs Sept. 24, 25, 27.
1913, 1951-52: Maximum discharge, that of May 28, 1952; minimum observed, 0.1 cfs several days in August and September 1951.

Remarks.--Records good.

Rating table, Apr. 1 to Sept. 30, 1952 (gage height, in feet, and discharge, in cubic feet per second)

0.1	0.6	0.7	9.8
.2	1.6	1.0	17
.4	4.4	1.3	26

Discharge, in cubic feet per second, April to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							17	13	22	20	8.0	4.1
2							*17	13	21	19	7.6	4.1
3							16	12	20	18	6.4	4.4
4							18	12	21	17	6.7	5.0
5							20	11	21	17	*6.4	4.7
6							23	12	21	15	6.0	4.7
7							25	17	21	14	5.5	4.4
8							20	15	21	14	5.5	4.4
9							18	17	21	13	5.4	8.6
10							17	17	21	13	5.7	7.1
11							16	16	21	13	5.5	*5.2
12							16	16	21	3.8	5.7	5.4
13							16	16	20	7.4	5.5	5.2
14							14	15	22	4.7	5.2	4.4
15							13	16	22	7.4	5.2	4.4
16							13	17	20	11	5.2	4.0
17							13	17	19	11	5.4	1.0
18							15	18	19	11	5.4	1.0
19							14	*17	20	11	4.9	1.0
20							14	19	21	10	4.7	1.0
21							13	21	20	10	4.7	1.0
22							13	22	19	9.8	4.7	*1.0
23							16	22	20	9.0	4.9	.9
24							17	22	18	9.4	5.0	.8
25							16	21	20	9.0	5.0	.8
26							15	18	18	8.6	5.0	1.0
27							15	21	*21	8.6	4.9	1.0
28							15	26	21	7.8	4.4	1.0
29							14	22	21	7.8	4.4	1.0
30							15	23	18	7.3	4.4	1.0
31							-	22	-	8.6	4.4	-
Total							484	546	611	346.2	167.7	93.6
Mean							16.1	17.6	20.4	11.2	5.41	3.12
Ac-ft							960	1,080	1,210	687	333	186

Calendar year	: Max		Min	Mean	Ac-ft	
Water year	: Max		Min	Mean	Ac-ft	

* Discharge measurement made on this day.

Bear Creek at Medford, Oreg.

Location.--Lat 42°19'40", long. 122°52'00", in NW¼ sec. 30, T. 37 S., R. 1 W., on left bank just upstream from Main Street Bridge in Medford.

Drainage area.--279 sq mi.

Records available.--March 1915 to September 1952 (incomplete prior to April 1927).

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,343.47 ft above mean sea level, datum of 1929. Mar. 13, 1915, to June 30, 1918, staff gage and Sept. 20, 1918, to Oct. 19, 1943, water-stage recorder, at site 40 ft upstream at datum 0.42 ft higher. Oct. 20, 1943, to Dec. 30, 1947, water-stage recorder at site 40 ft upstream at present datum.

Average discharge.--31 years (1920-26, 1927-52), 86.3 cfs.

Extremes.--Maximum discharge during year, 2,190 cfs Mar. 24 (gage height, 3.68 ft); minimum, 8.2 cfs Oct. 10.
1915-52: Maximum discharge, 10,200 cfs Feb. 20, 1927 (gage height, 10.57 ft, present datum, site then in use), from rating curve extended above 1,600 cfs; practically no flow at times.

Remarks.--Records good except those below 15 cfs, which are fair, and those for period of no gage-height record, which are poor. Diversions above station for irrigation. Flow partly regulated since December 1924 by Emigrant Gap Reservoir.

Revisions (water years).--W 1044: 1944.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
0.2	4.0	1.5	325	0.2	8.0	1.5	335
.3	10	2.0	600	.3	16	2.0	600
.5	34	2.5	965	.5	38	2.5	965
.7	70	3.0	1,430	.7	72	3.0	1,430
1.0	145	3.4	1,850	1.0	148		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	21	156	405	913	281	420	187	110	102	20	20
2	31	20	167	375	901	203	425	177	102	90	18	21
3	44	21	117	348	588	186	415	174	98	68	51	20
4	33	21	226	334	516	173	405	161	81	61	57	30
5	25	21	239	317	462	170	492	154	86	42	37	52
6	20	19	151	301	426	*154	582	151	100	38	27	53
7	16	*19	123	285	395	148	594	190	108	33	20	50
8	14	19	112	269	*348	142	546	274	100	27	19	47
9	10	19	102	220	289	145	460	290	95	26	20	55
10	8.8	53	94	170	273	176	415	258	105	a25	21	*62
11	11	57	97	148	281	160	400	*240	128	a23	23	57
12	11	81	100	123	265	151	390	236	105	a22	22	53
13	11	64	97	123	249	142	400	254	*93	a21	19	48
14	18	77	83	269	249	139	405	226	134	a20	16	47
15	34	62	72	207	301	142	362	208	142	a19	18	47
16	19	44	70	253	1,170	164	322	190	110	a18	17	47
17	12	34	70	231	558	179	308	170	88	a17	22	37
18	11	30	72	220	410	234	312	158	77	*16	24	18
19	20	26	77	214	380	242	299	164	79	15	21	16
20	22	29	70	289	420	214	278	158	*84	16	18	17
21	25	30	64	*257	375	214	250	134	120	19	21	18
22	24	30	91	242	352	234	232	123	108	18	*21	18
23	66	28	518	273	356	253	215	115	115	18	24	19
24	64	29	448	420	375	1,780	212	115	115	32	26	*19
25	44	30	224	334	375	1,410	218	118	112	24	27	18
26	39	31	295	317	370	*1,010	212	118	98	18	22	17
27	26	36	1,190	305	361	852	212	108	79	19	23	17
28	25	55	885	305	338	705	212	100	128	17	21	18
29	25	55	885	338	325	621	190	98	120	18	17	18
30	24	53	691	444	-	528	184	100	118	16	17	23
31	21	-	504	570	-	455	-	105	-	19	20	-
Total	770.8	1,114	8,090	8,906	12,621	11,587	10,367	5,254	3,138	917	729	982
Mean	24.9	37.1	261	287	435	374	346	169	105	29.6	23.5	32.7
Ac-ft	1,530	2,210	16,050	17,660	25,030	22,980	20,560	10,420	6,220	1,820	1,450	1,950

Calendar year 1951: Max 2,050 Min 7.6 Mean 142 Ac-ft 102,600
Water year 1951-52: Max 1,780 Min 8.8 Mean 176 Ac-ft 127,900

Peak discharge (base, 400 cfs).--Dec. 23 (5 p.m.) 775 cfs (2.25 ft); Dec. 27 (9 to 10 a.m.) 1,560 cfs (3.13 ft); Jan. 24 (8 to 9 a.m.) 468 cfs (1.78 ft); Feb. 1 (9:30 p.m.) 1,490 cfs (3.06 ft); Feb. 16 (4 a.m.) 1,730 cfs (3.29 ft); Mar. 24 (9 to 11 p.m.) 2,190 cfs (3.68 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

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 SE¼ sec. 27, 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 1952; 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 1951 to September 1952

Month	Ashland lateral	East lateral	Talent lateral	Phoenix Canal	Bear Creek Canal
October	0	0	0	360	244
November	0	0	0	0	0
December	0	0	0	0	0
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	2.6	1,280	753	498	2.0
May	172	2,960	1,950	1,020	553
June	75	1,730	1,880	1,170	1,060
July	753	3,140	2,120	1,010	938
August	914	3,520	1,910	1,280	1,010
September	475	925	588	444	518
Water year 1951-52	2,390	13,560	9,200	5,780	4,320

Rogue River at Raygold, near Central Point, Oreg.

Location.--Lat 42°26'20", long. 122°59'10", in sec. 18, T. 36 S., R. 2 W., on right bank at downstream side of road bridge at Raygold, just downstream from dam and powerhouse of California Oregon Power Co., half a mile downstream from Bear Creek, 6 miles northwest of Central Point, and at mile 121.9 (Geological Survey river-profile survey).

Drainage area.--2,020 sq mi, approximately.

Records available.--August 1905 to September 1952. Prior to 1922, published as Rogue River near Tolo.

Gage.--Water-stage recorder. Datum of gage is 1,121.78 ft above mean sea level, datum of 1929. Prior to Sept. 19, 1914, staff gage at same site and datum.

Average discharge.--47 years, 2,814 cfs.

Extremes.--Maximum discharge during year, 28,900 cfs Feb. 2 (gage height, 11.43 ft); minimum, 1,060 cfs Sept. 16 (gage height, 0.69 ft); minimum daily, 1,420 cfs Oct. 10.

1905-52: Maximum discharge, 91,500 cfs Feb. 21, 1927 (gage height, 24.8 ft, from floodmark), from rating curve extended above 36,000 cfs; minimum not determined; minimum daily, 616 cfs Sept. 6, 1931.

Greatest flood known occurred during winter of 1861-62 and reached a stage of about 32 ft; flood of February 1890 reached a stage of about 27½ ft. (Information furnished by Corps of Engineers.)

Revisions.--Figures of maximum discharge for the water years 1910 and 1914 have been revised to 79,500 cfs Nov. 23, 1909 (gage height, 22.5 ft) and 23,500 cfs Jan. 22, 1914 (gage height, 10.0 ft), superseding figures published in Water-Supply Papers 414 and 394, respectively.

Remarks.--Records excellent. Many diversions above station for irrigation. Diurnal fluctuation caused by powerplant just above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water years 1906 and 1915, superseding those published in Water-Supply Papers 214 and 414, are given herein.

Date	Discharge	Date	Discharge	Date	Discharge
1906		1906-Con.		1915-Con.	
July 2	2,250	July 21	1,500	July 13	1,370
3	2,180	22	1,480	14	1,350
4	2,100	23	1,470	15	1,340
5	2,020	24	1,450	16	1,300
6	1,970	25	1,440	17	1,290
7	1,900	26	1,430	18	1,280
8	1,870	27	1,420	19	1,260
9	1,840	28	1,420	20	1,240
10	1,800	29	1,420	21	1,230
11	1,760	30	1,420	22	1,210
12	1,720	31	1,420	23	1,190
13	1,700	Aug. 1	1,420	24	1,190
14	1,670	2	1,420	25	1,180
15	1,650	3	1,420	26	1,180
16	1,640	4	1,420	27	1,170
17	1,610			28	1,130
18	1,580	1915		29	1,120
19	1,550	July 11	1,420	30	1,100
20	1,520	12	1,370	31	1,070

Month	Maximum	Minimum	Mean	Runoff in acre-feet
July 1906.....	2,300	1,420	1,690	104,000
August.....	1,420	1,230	1,360	83,600
Water year 1905-06..	27,800	1,230	2,740	1,980,000
Calendar year 1906..	27,800	1,230	2,880	2,070,000
July 1915.....	1,690	1,070	1,320	81,200
Water year 1914-15..	9,700	960	1,910	1,380,000
Calendar year 1915..	9,700	960	1,972	1,430,000

Rogue River at Raygold, near Central Point, Oreg--Continued

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	1,330
2.0	2,460
4.0	5,900
7.0	13,300
10.0	23,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,560	1,780	10,700	5,880	16,500	4,570	6,380	5,920	5,230	3,730	1,870	1,560
2	1,940	1,720	8,200	4,920	22,000	4,170	6,240	5,490	4,980	3,520	1,840	1,570
3	*2,500	1,660	6,910	4,420	12,600	4,000	6,070	5,130	4,900	3,380	1,850	1,550
4	1,980	1,680	8,180	4,210	9,840	4,020	6,050	4,790	4,920	3,300	2,030	1,560
5	1,630	1,670	8,040	*4,000	8,680	3,800	6,740	4,530	5,010	3,220	1,890	1,780
6	1,520	1,660	5,490	3,800	7,590	3,630	7,680	4,570	5,270	3,060	1,930	1,720
7	1,470	1,620	4,240	3,560	6,780	3,440	8,240	5,010	5,270	2,940	1,770	1,650
8	1,450	1,580	3,640	3,630	6,280	3,300	7,940	6,910	5,070	2,830	1,770	1,640
9	1,440	1,570	3,270	3,330	5,860	3,310	7,170	6,610	5,050	2,760	1,730	1,810
10	1,420	1,800	3,170	4,710	5,570	4,300	6,680	6,070	4,800	2,700	1,740	1,950
11	1,460	2,830	2,990	4,020	5,570	4,140	6,570	5,980	4,420	2,660	1,720	1,760
12	1,860	6,470	3,160	3,510	5,530	4,000	6,420	6,030	4,150	2,560	1,720	1,710
13	1,770	5,150	3,220	3,200	5,070	3,780	6,490	6,260	3,860	2,500	1,680	1,660
14	1,610	6,110	2,990	4,440	4,840	3,560	*6,950	6,280	3,920	2,430	1,660	1,630
15	2,650	4,770	2,860	3,690	5,670	3,410	6,400	5,840	4,080	2,380	1,660	1,610
16	2,290	3,520	2,770	3,360	17,500	3,360	5,980	5,590	3,730	2,370	1,660	1,580
17	1,830	2,920	2,790	2,990	10,300	3,310	5,900	5,800	3,580	2,260	1,640	1,580
18	1,680	2,630	2,940	2,880	7,760	3,900	6,320	5,960	3,630	*2,190	1,640	1,550
19	1,700	*2,460	3,930	2,870	6,740	4,300	6,950	6,210	3,680	2,160	1,640	1,520
20	1,740	2,380	3,230	3,460	6,420	4,030	6,510	6,300	3,590	2,130	1,640	1,580
21	2,130	2,330	2,930	3,440	5,820	3,800	5,920	5,920	3,710	2,090	1,640	1,510
22	2,130	2,200	4,370	3,390	5,430	3,730	5,730	5,630	3,580	2,060	1,650	1,510
23	3,860	2,100	10,600	3,660	5,900	4,000	5,750	5,550	3,680	2,000	1,650	1,490
24	4,790	2,040	13,000	5,730	5,650	13,700	5,940	5,770	4,100	1,980	1,660	1,490
25	3,080	2,000	7,210	5,330	*5,350	12,600	6,380	6,070	3,830	1,980	1,670	1,480
26	2,520	2,080	6,090	4,900	5,290	10,200	6,760	5,980	3,580	1,940	1,660	1,480
27	2,200	2,300	16,100	4,860	5,290	9,160	6,780	6,030	3,490	1,920	1,640	1,490
28	2,070	5,060	13,600	4,510	5,090	8,640	6,930	*6,070	4,140	1,860	1,620	1,490
29	1,980	4,300	14,700	4,900	4,880	7,880	6,470	6,110	4,170	1,840	1,620	1,480
30	1,900	6,240	11,500	6,280	-	7,190	5,900	5,650	4,070	1,850	1,590	1,500
31	1,840	-	7,390	11,200	-	6,890	-	5,450	-	1,870	1,560	-
Total	64,000	86,630	200,210	135,080	225,800	164,120	196,240	179,510	127,490	76,470	53,040	47,890
Mean	2,065	2,888	6,458	4,357	7,786	5,294	6,541	5,791	4,250	2,467	1,711	1,596
Ac-ft	126,900	171,800	397,100	267,900	447,900	325,500	389,200	356,100	252,900	151,700	105,200	94,990

Calendar year 1951: Max 24,000 Min 1,240 Mean 3,817 Ac-ft 2,763,000
Water year 1951-52: Max 22,000 Min 1,420 Mean 4,253 Ac-ft 3,087,000

Peak discharge (base, 11,000 cfs).--Dec. 1 (1:30 p.m.) 13,300 cfs (7.01 ft); Dec. 24 (4 a.m.) 17,800 cfs (8.40 ft); Dec. 27 (1 p.m.) 20,800 cfs (9.24 ft); Dec. 29 (8 p.m.) 19,400 cfs (8.85 ft); Feb. 2 (1 a.m.) 28,900 cfs (11.43 ft); Feb. 16 (7 a.m.) 25,400 cfs (10.51 ft); Mar. 24 (6:30 p.m.) 16,300 cfs (7.95 ft).

* Discharge measurement made on this day.

Rogue River at Grants Pass, Oreg.

Location.--Lat 42°25'50", long. 123°19'00", in NW¼ sec. 20, T. 36 S., R. 5 W., on right bank at city of Grants Pass filter plant, 0.6 mile upstream from U. S. Highway 99 bridge at Grants Pass, and at mile 98.0 (Geological Survey river-profile survey).

Drainage area.--2,420 sq mi, approximately.

Records available.--January 1939 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 888.28 ft above mean sea level, datum of 1929.

Average discharge.--13 years, 3,265 cfs.

Extremes.--Maximum discharge during year, 38,800 cfs Feb. 2 (gage height, 14.78 ft); minimum, 1,190 cfs Oct. 1; minimum daily, 1,300 cfs Sept. 26.
1939-52: Maximum discharge, 70,000 cfs Dec. 29, 1945 (gage height, 23.16 ft), from rating curve extended above 23,000 cfs; minimum, 560 cfs Aug. 8, 1940; minimum daily, 637 cfs Aug. 8, 1940.
Flood in winter of 1861-62 reached a stage of about 39 ft (information furnished by Corps of Engineers). Flood of February 1890 reached a stage of about 32 ft, and that of Feb. 21, 1927, about 28 ft, according to local resident.

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 above station. Flow regulated by dams at Savage Rapids and Raygold and slightly by Fish Lake and Emigrant Gap Reservoir.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 26				Dec. 27 to Sept. 30			
0.6	1,300	6.0	11,300	0.4	1,230	8.0	16,500
1.0	1,760	8.0	16,500	1.0	1,940	13.0	32,200
2.0	3,180			4.0	7,100		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,390	1,750	12,600	7,240	22,600	5,580	7,220	5,920	4,940	3,620	1,680	1,350
2	1,800	1,690	9,760	5,900	29,800	5,100	6,960	5,500	4,670	3,360	1,610	1,360
3	2,630	1,660	7,970	5,390	17,100	4,790	6,800	5,080	4,540	3,160	1,610	1,320
4	2,390	1,660	10,100	5,100	13,000	4,850	6,720	4,740	4,560	3,070	1,790	1,360
5	1,680	1,680	10,200	4,700	11,400	4,560	7,360	4,520	4,650	2,990	1,710	1,550
6	1,520	1,640	6,640	4,500	9,810	4,400	8,470	4,560	4,920	2,830	1,590	1,580
7	1,460	1,620	5,030	4,210	8,630	4,110	9,040	4,900	4,970	2,690	1,550	1,500
8	1,440	1,570	4,090	*4,060	7,840	3,940	8,780	6,960	4,740	2,560	1,520	1,490
9	1,410	1,560	3,620	3,940	7,220	3,910	7,900	6,780	4,740	2,440	1,490	*1,640
10	1,390	1,720	3,280	6,300	6,800	4,860	7,260	6,070	4,590	2,400	1,490	1,850
11	1,440	2,620	3,180	5,600	6,820	4,900	7,100	5,960	4,250	2,370	1,490	1,670
12	1,740	6,460	3,240	4,770	6,700	4,650	6,900	5,980	3,970	2,280	1,470	1,570
13	1,800	*5,750	3,370	4,080	6,030	4,490	6,960	6,130	3,700	2,190	1,420	1,530
14	1,660	6,140	3,230	5,130	5,730	4,160	7,520	6,260	3,740	2,140	1,430	1,490
15	2,270	5,330	2,960	4,850	6,400	4,010	6,920	5,840	4,040	2,100	1,420	1,460
16	2,500	3,790	2,860	4,210	20,700	3,910	*6,380	5,500	3,800	2,110	1,420	1,430
17	2,050	3,080	2,870	3,740	13,200	3,910	6,420	5,600	3,130	*2,020	1,420	1,370
18	1,710	2,750	2,940	3,530	9,720	4,580	6,540	5,750	3,330	1,930	1,420	1,350
19	1,660	2,540	4,380	3,530	8,210	5,150	7,160	6,030	3,400	1,860	1,420	1,340
20	1,710	2,450	3,620	4,380	7,690	4,970	6,840	6,150	3,330	1,840	1,420	1,350
21	1,930	2,390	3,210	4,450	6,880	4,670	6,000	5,840	3,500	1,800	1,410	1,350
22	2,060	2,250	4,200	4,310	6,320	4,580	5,770	5,480	3,330	1,740	1,430	1,340
23	3,090	2,130	11,200	4,540	6,940	4,610	5,770	5,350	3,380	1,730	1,430	1,320
24	5,620	2,060	16,200	7,160	6,720	13,900	5,920	5,560	3,870	1,710	1,430	1,320
25	3,320	2,020	8,930	7,500	6,400	15,400	6,260	5,860	3,630	1,700	1,430	1,310
26	2,630	2,060	7,530	6,700	*6,380	12,300	6,700	5,790	3,330	1,690	1,440	1,300
27	2,240	2,360	20,700	6,840	6,540	10,900	6,800	5,750	3,290	1,650	1,420	1,310
28	2,050	4,950	17,600	6,340	6,260	10,100	6,860	5,680	3,940	1,630	1,410	1,310
29	1,970	4,760	19,100	6,740	5,980	9,190	6,540	*5,980	4,010	1,580	1,380	1,310
30	1,840	7,030	15,600	8,550	-	8,280	5,860	5,410	3,960	1,580	1,360	*1,310
31	1,800	-	9,590	15,200	-	7,880	-	5,170	-	1,630	1,360	-
Total	64,200	89,470	239,800	173,490	283,820	192,640	207,730	176,300	120,250	68,400	45,870	42,740
Mean	2,071	2,982	7,735	5,596	9,787	6,214	6,924	5,687	4,008	2,206	1,480	1,425
Ac-ft	127,300	177,500	475,600	344,100	562,900	382,100	412,000	349,700	238,500	135,700	90,980	84,770

Calendar year 1951: Max 31,100 Min 1,020 Mean 4,237 Ac-ft 3,067,000
Water year 1951-52: Max 29,800 Min 1,300 Mean 4,658 Ac-ft 3,381,000

Peak discharge (base, 13,000 cfs).--Dec. 1 (2:30 p.m.) 15,600 cfs (7.66 ft); Dec. 24 (7 a.m.) 20,100 cfs (9.24 ft); Dec. 27 (3 p.m.) 26,500 cfs (11.30 ft); Dec. 29 (10 p.m.) 24,000 cfs (10.53 ft); Feb. 2 (3 a.m.) 38,800 cfs (14.78 ft); Feb. 16 (10 a.m.) 28,500 cfs (11.90 ft); Mar. 24 (11 p.m.) 18,700 cfs (8.77 ft).
* Discharge measurement made on this day.

Applegate River near Copper, Oreg.

Location.--Lat 42°03'30", long. 123°06'50", in SE¼ sec. 25, T. 40 S., R. 4 W., on right bank a quarter of a mile downstream from French Gulch, 1½ miles downstream from Squaw Creek, and 8 miles northeast of Copper store.

Drainage area.--220 sq mi.

Records available.--December 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,759.66 ft above mean sea level, datum of 1929.

Average discharge.--13 years (1939-52), 414 cfs.

Extremes.--Maximum discharge during year, 6,660 cfs Feb. 1 (gage height, 11.05 ft); minimum, 43 cfs Sept. 20 (gage height, 1.03 ft).
1938-52: Maximum discharge, 13,400 cfs Jan. 6, 1948 (gage height, 17.84 ft), from rating curve extended above 6,300 cfs by logarithmic plotting; minimum, 20 cfs Sept. 23-25, 1939.

Remarks.--Records good. About 11 cfs diverted for irrigation of 482 acres above station in Applegate River basin; Grand Applegate ditch diverts about 3.3 cfs around station on left bank. An average of about 8 cfs for irrigation is diverted into Thompson Creek basin. Several hundred acre-feet normally stored each winter in Squaw Lake for irrigation the following summer.

Revisions.--W 1064: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 30				Dec. 1 to Sept. 30			
1.1	48	3.0	485	1.0	40	3.0	480
1.5	100	4.0	1,020	1.5	107	4.0	920
2.0	192	6.0	2,490	2.0	198	9.0	4,820
2.5	320			2.5	315		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	93	3,310	790	4,070	607	914	1,640	1,010	400	132	62
2	272	89	1,470	675	4,060	587	876	1,360	1,000	378	123	61
3	147	83	1,290	*611	2,260	571	865	1,190	1,030	375	117	55
4	*92	82	1,190	567	1,810	551	956	1,050	1,070	378	112	52
5	80	79	980	531	1,600	519	1,220	998	1,110	354	117	63
6	72	75	724	498	1,420	512	1,500	1,100	1,050	324	105	62
7	67	73	603	459	1,270	484	1,700	1,250	956	303	107	62
8	62	72	523	420	1,150	462	1,540	1,310	986	285	102	62
9	57	71	459	431	1,080	462	1,360	1,180	950	282	97	69
10	52	286	424	504	1,030	480	1,280	1,240	795	265	96	*74
11	78	495	410	470	1,050	452	1,260	1,360	684	253	93	64
12	120	890	406	420	968	445	1,270	1,360	603	237	88	59
13	83	460	396	400	876	420	1,400	1,410	563	226	85	58
14	75	482	378	417	815	417	1,310	1,340	635	216	83	55
15	132	362	360	396	815	400	1,170	1,240	583	*210	80	53
16	102	272	351	363	1,240	386	1,120	1,280	555	200	77	51
17	79	226	330	333	1,080	386	*1,220	1,460	555	185	76	50
18	72	196	396	321	950	414	1,510	1,590	563	173	73	48
19	79	216	372	333	855	392	1,600	1,670	555	171	74	48
20	75	243	342	403	785	360	1,330	1,590	543	169	74	44
21	75	214	327	378	724	351	1,240	1,390	490	166	73	46
22	76	188	403	354	684	366	1,270	1,330	462	158	73	46
23	332	*172	992	366	651	382	1,340	1,420	512	151	71	46
24	289	164	950	555	619	746	1,470	1,520	452	145	70	46
25	199	178	729	551	*611	1,420	1,570	1,520	445	140	69	44
26	154	485	898	543	611	1,470	1,620	1,470	417	135	67	44
27	136	692	2,390	551	611	1,360	1,650	*1,570	420	130	69	44
28	125	1,530	1,880	559	615	1,360	1,620	1,540	459	123	66	46
29	118	1,100	1,780	611	615	1,280	1,380	1,350	466	120	67	46
30	106	2,260	1,440	1,040	-	1,120	1,840	1,210	410	113	66	48
31	99	-	1,010	1,680	-	992	-	1,130	-	123	64	-
Total	3,597	11,826	27,513	16,530	34,925	20,154	40,401	42,068	20,329	6,888	2,666	1,608
Mean	116	394	888	533	1,204	650	1,347	1,357	678	222	86.0	53.6
Ac-ft	7,130	23,460	54,570	32,790	69,270	39,970	80,130	83,440	40,320	13,660	5,290	3,190

Calendar year 1951: Max 5,410 Min 28 Mean 522 Ac-ft 378,200
Water year 1951-52: Max 4,070 Min 44 Mean 624 Ac-ft 453,200

Peak discharge (base, 1,700 cfs).--Nov. 28 (3 a.m.) 2,070 cfs (5.47 ft); Dec. 1 (5 a.m.) 5,060 cfs (9.27 ft); Dec. 27 (6:30 a.m.) 2,910 cfs (6.64 ft); Feb. 1 (8:30 p.m.) 6,660 cfs (11.05 ft); Apr. 30 (4:30 p.m.) 2,170 cfs (5.71 ft).
* Discharge measurement made on this day.

Applegate River near Ruch, Oreg.

Location.--Lat 42°10'40", long. 123°02'50", in sec. 15, T. 39 S., R. 3 W., on downstream side of left pier of Cameron Bridge, 1½ miles upstream from Little Applegate River and 4½ miles south of Ruch.

Drainage area.--297 sq mi.

Records available.--June 1911 to September 1914, September 1925 to September 1952. Published as "near Buncom" 1911-14.

Gage.--Water-stage recorder. Datum of gage is 1,475.09 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). June 18, 1911, to Sept. 30, 1914, staff gage at same site at datum 0.88 ft lower.

Average discharge.--29 years (1911-14, 1925-26, 1927-52), 370 cfs.

Extremes.--Maximum discharge during year, 7,850 cfs Feb. 1 (gage height, 8.27 ft); minimum, 46 cfs Sept. 27.
1911-14, 1925-52: Maximum discharge, 20,000 cfs Feb. 20, 1927 (gage height, 16.0 ft), from rating curve extended above 8,000 cfs; minimum, 7 cfs Sept. 2, 1929.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Diversions for irrigation of about 1,500 acres above station; Cameron (Comstock) ditch diverts some water around station for irrigation.

Revisions (water years).--W 1064: Drainage area. W 1094: 1946(M).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 1				Feb. 2 to Sept. 30			
0.1	60	2.0	830	-0.1	45	2.0	880
.3	98	3.0	1,700	0.0	60	4.0	2,760
.5	146	6.0	5,100	.3	115	6.0	5,100
1.0	308			.5	164	7.0	6,300
				1.0	330		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	100	3,440	818	4,840	656	887	1,650	1,010	388	124	63
2	254	*94	1,420	704	5,220	632	922	1,320	998	374	120	62
3	173	90	1,200	632	2,760	614	901	1,140	1,030	370	109	*57
4	110	82	1,120	570	2,230	587	958	998	*1,060	366	102	56
5	94	82	949	535	1,890	560	1,230	958	1,110	350	*111	60
6	84	74	710	510	1,630	550	1,530	1,040	1,060	319	104	62
7	76	73	570	470	1,450	530	1,770	1,190	966	a300	102	66
8	73	69	500	435	1,310	510	1,580	1,260	982	a290	100	66
9	65	*69	440	430	1,220	505	1,370	1,140	966	a280	94	68
10	64	254	397	560	1,150	520	1,270	1,190	782	a265	92	74
11	74	425	379	515	1,190	a500	1,250	*1,310	674	*245	89	*71
12	128	837	374	465	1,110	a480	1,260	1,320	592	232	83	66
13	94	460	370	440	998	a460	1,380	1,370	540	222	81	66
14	84	455	*348	465	915	a450	1,310	1,300	626	215	80	65
15	134	361	332	440	894	a430	*1,160	1,190	565	206	76	63
16	116	278	324	402	1,350	a410	1,120	1,220	535	*193	74	60
17	92	233	308	366	1,200	a430	*1,170	1,420	530	176	73	57
18	84	203	361	348	1,050	a450	1,490	1,600	545	167	71	60
19	86	213	352	352	*943	a420	1,650	1,680	530	161	71	63
20	84	246	316	475	873	*384	1,320	1,610	530	161	73	60
21	84	220	297	450	789	379	1,200	1,370	490	159	73	52
22	84	194	352	418	754	397	1,230	1,290	455	148	73	54
23	a250	179	882	426	704	415	1,310	1,400	495	141	71	54
24	308	168	907	662	662	748	1,460	1,510	450	138	70	52
25	216	170	692	698	*650	1,540	1,590	1,500	435	131	71	54
26	165	423	837	668	650	1,620	1,640	1,450	*420	126	73	52
27	141	555	2,730	686	656	1,450	1,660	1,550	420	124	76	51
28	136	1,470	2,080	704	662	1,460	1,660	1,570	445	122	73	52
29	128	949	2,090	770	668	1,360	1,380	1,340	465	115	70	54
30	116	2,050	1,640	1,300	-	1,180	1,840	1,190	406	111	66	54
31	105	-	1,060	2,110	-	1,050	-	1,130	-	115	65	-
Total	3,776	11,076	27,777	18,822	40,418	21,677	40,498	41,206	20,112	6,710	2,610	1,794
Mean	122	369	896	607	1,394	699	1,350	1,329	670	216	84.2	59.8
Ac-ft	7,490	21,970	55,090	37,330	80,170	43,000	80,330	81,730	39,890	13,310	5,180	3,560

Calendar year 1951: Max 6,000 Min 27 Mean 534 Ac-ft 386,400
Water year 1951-52: Max 5,220 Min 51 Mean 646 Ac-ft 469,000

Peak discharge (base, 1,800 cfs).--Nov. 28 (5:30 a.m.) 2,000 cfs (3.30 ft); Dec. 1 (7 a.m.) 5,020 cfs (5.93 ft); Dec. 27 (7 a.m.) 3,420 cfs (4.60 ft); Feb. 1 (9 p.m.) 7,850 cfs (8.27 ft); Apr. 7 (7 a.m.) 1,810 cfs (3.06 ft); Apr. 19 (2 a.m.) 1,810 cfs (3.06 ft); Apr. 30 (6 p.m.) 2,250 cfs (3.50 ft); May 19 (12 p.m.) 1,840 cfs (3.09 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for stations near Copper and near Applegate.

Applegate River near Applegate, Oreg.

Location.--Lat 42°14'30", long. 123°08'10", in NE¼ sec. 26, T. 38 S., R. 4 W., on left bank, 0.9 mile downstream from Keeler Creek and 2 miles southeast of Applegate.

Drainage area.--480 sq mi.

Records available.--October 1938 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,285.33 ft above mean sea level, datum of 1929. Prior to Dec. 23, 1938, staff gage at same site and datum.

Average discharge.--14 years, 487 cfs.

Extremes.--Maximum discharge during year, 11,100 cfs Feb. 1 (gage height, 10.11 ft), from rating curve extended above 5,600 cfs by logarithmic plotting; minimum, 23 cfs Sept. 4.
1938-52: Maximum discharge, 21,200 cfs Jan. 6, 1948 (gage height, 14.20 ft), from rating curve extended above 5,600 cfs by logarithmic plotting; minimum, 7 cfs Sept. 18, 1945, Aug. 28, 1951.

Remarks.--Records good. Many diversions above station for irrigation of about 4,000 acres in Applegate River basin. About 10 cfs 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 cfs, respectively, around station.

Revisions.--W 1064: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 2				Feb. 3 to Sept. 30			
0.9	33	3.0	750	0.8	30	3.0	720
1.2	69	4.0	1,560	1.1	62	4.0	1,500
1.5	119	6.0	3,900	1.5	130	5.0	2,500
2.0	255	8.1	7,030	2.0	249	6.0	3,800
2.5	465			2.5	445		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	119	3,910	1,160	5,860	843	1,260	1,910	1,180	455	97	34
2	220	110	1,810	970	6,880	808	1,200	1,540	1,160	440	92	34
3	223	104	1,470	834	3,770	774	1,160	1,350	1,180	414	86	34
4	*119	104	1,410	757	2,840	744	1,230	1,300	1,210	404	81	32
5	95	104	1,250	702	2,420	708	1,520	1,160	1,240	386	86	35
6	84	98	906	666	2,080	684	1,820	1,730	1,220	347	81	38
7	76	97	708	618	1,840	654	2,060	1,380	1,120	319	75	46
8	72	95	612	570	1,670	622	1,910	1,500	1,140	298	70	50
9	66	92	537	559	1,540	610	1,680	1,360	1,140	280	65	54
10	58	246	480	778	1,450	644	1,560	1,400	952	253	63	*65
11	68	415	460	744	1,470	605	1,540	1,540	815	238	60	63
12	123	1,030	450	648	1,360	583	1,530	1,540	732	268	55	62
13	100	570	445	612	1,240	556	1,650	1,590	672	229	50	63
14	89	505	425	648	1,140	539	1,580	1,530	780	216	47	63
15	144	435	402	624	1,110	512	1,430	1,370	726	204	47	58
16	148	334	392	559	1,660	495	1,360	1,400	678	*189	46	52
17	110	276	379	490	1,540	495	*1,410	1,590	644	169	44	47
18	97	243	425	480	1,360	561	1,710	1,760	654	158	44	42
19	98	234	425	480	1,250	539	1,900	1,890	638	147	43	46
20	98	283	384	648	1,150	485	1,580	1,830	622	145	44	46
21	100	252	361	624	*1,040	480	1,450	1,580	566	140	46	40
22	97	225	406	588	984	495	1,460	1,500	517	130	48	38
23	298	*210	987	588	928	522	1,520	1,580	544	118	49	36
24	397	201	1,190	883	871	936	1,670	1,700	512	112	47	36
25	266	201	890	1,010	850	1,950	1,810	1,720	500	105	44	36
26	207	406	1,030	978	857	2,050	1,860	1,650	475	99	46	38
27	175	588	*3,530	1,030	864	1,860	1,870	*1,730	475	90	48	35
28	158	1,620	2,780	1,060	864	1,860	1,890	1,790	512	89	48	34
29	148	1,090	2,790	1,180	864	1,730	1,620	1,570	544	82	42	34
30	139	2,060	2,370	1,860	-	1,540	1,950	1,380	480	79	39	34
31	126	-	1,540	2,990	-	1,360	-	1,300	-	81	36	-
Total	4,237	12,347	35,154	26,338	51,752	27,244	48,190	48,170	23,628	6,684	1,769	1,323
Mean	137	412	1,134	850	1,785	879	1,606	1,554	788	216	57.1	44.1
Ac-ft	8,400	24,490	69,730	52,240	102,600	54,040	95,580	95,540	46,870	13,260	3,510	2,620

Calendar year 1951: Max 7,310 Min 7.8 Mean 666 Ac-ft 482,300
Water year 1951-52: Max 6,880 Min 32 Mean 784 Ac-ft 568,900

Peak discharge (base, 2,200 cfs).--Dec. 1 (8 a.m.) 5,330 cfs (7.02 ft); Dec. 27 (9 a.m.) 4,350 cfs (6.32 ft); Feb. 1 (11 p.m.) 11,100 cfs (10.11 ft); Apr. 30 (7:30 p.m.) 2,410 cfs (4.92 ft).
* Discharge measurement made on this day.

Powell Creek near Williams, Oreg.

Location.--Lat 42°16'00", long. 123°17'40", near center of sec. 16, T. 38 S., R. 5 W., on left bank 0.1 mile upstream from Blodgett ditch intake and 2 miles northwest of Williams.

Drainage area.--8.6 sq mi, approximately.

Records available.--September 1946 to September 1952.

Gage.--Water-stage recorder. Altitude of gage is 1,680 ft (by barometer).

Average discharge.--6 years, 15.0 cfs.

Extremes.--Maximum discharge during year, 400 cfs Feb. 1 (gage height, 4.21 ft); minimum, 1.1 cfs Sept. 22, 23.
1946-52: Maximum discharge, 938 cfs Oct. 28, 1950 (gage height, 5.14 ft), from rating curve extended above 550 cfs on basis of slope-area determination at gage height 4.92 ft; minimum, 0.9 cfs Oct. 3, 4, 1950.

Remarks.--Records good above 10 cfs and fair below. No diversions or regulation above station.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

0.9	0.9	2.0	25
1.0	1.6	2.5	57
1.2	3.5	3.0	108
1.4	6.2	3.5	190
1.6	10	4.0	322
1.8	16		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	1.8	81	41	292	30	26	10	4.8	3.3	2.4	1.4
2	4.6	1.7	39	31	211	26	25	10	4.7	3.2	2.0	1.3
3	2.1	1.6	55	*25	134	24	25	9.5	4.6	3.0	2.0	1.3
4	1.8	1.6	80	22	125	22	26	8.9	4.3	2.9	1.9	1.6
5	1.7	1.6	64	19	100	20	30	8.7	4.2	2.8	2.0	1.9
6	1.5	1.6	36	17	80	19	33	8.7	4.3	2.7	1.8	1.8
7	1.5	1.6	24	15	66	17	31	9.1	4.2	2.6	1.7	1.7
8	1.5	1.6	18	14	57	15	28	8.2	4.1	2.6	1.8	1.6
9	1.5	*1.7	14	14	51	15	24	7.8	4.1	2.5	1.7	1.8
10	1.5	5.8	12	34	47	17	23	7.6	4.1	2.5	1.7	*1.9
11	3.2	14	11	29	46	16	22	7.5	4.1	2.4	1.6	1.7
12	2.4	20	10	22	41	15	21	7.3	4.1	2.3	1.5	1.7
13	1.9	10	10	19	35	14	21	7.1	4.2	2.3	1.5	1.6
14	2.3	6.6	9.8	18	31	14	20	6.9	5.3	2.1	1.5	1.5
15	5.2	5.2	9.3	15	32	13	18	6.7	4.3	2.1	1.5	1.5
16	2.6	4.3	8.9	13	72	12	17	6.6	3.9	*2.0	1.5	1.5
17	2.2	3.9	8.2	11	60	12	16	6.4	3.7	2.1	1.5	1.4
18	2.1	3.5	18	11	48	14	17	6.0	3.7	2.1	1.5	1.3
19	2.4	3.7	24	11	40	14	18	6.0	3.7	2.3	1.5	1.3
20	2.3	4.0	19	20	*35	13	*16	6.0	3.7	2.2	1.5	1.2
21	2.4	3.7	15	18	30	13	15	5.9	3.5	2.3	1.5	1.2
22	2.2	3.4	15	16	27	14	14	*5.8	3.5	2.2	1.6	1.2
23	10	3.3	64	18	28	17	13	5.8	3.6	2.2	1.6	1.2
24	5.9	3.2	70	28	28	38	13	5.6	3.5	2.2	1.6	1.2
25	3.4	3.7	47	35	32	58	13	5.6	3.6	2.1	1.6	1.3
26	2.8	7.8	44	39	36	55	13	5.4	3.4	2.0	1.6	1.3
27	2.3	11	157	48	36	48	12	5.3	3.5	2.0	1.6	1.3
28	2.0	32	132	46	35	45	12	5.2	3.7	2.0	1.5	1.3
29	2.0	19	167	55	32	40	11	5.2	3.9	1.9	1.5	1.3
30	2.0	44	108	98	-	34	11	5.0	3.4	1.8	1.5	1.3
31	1.9	-	62	162	-	29	-	4.8	-	2.2	1.5	-
Total	83.9	226.9	1,432.2	964	1,887	733	584	214.6	119.7	72.9	51.2	43.6
Mean	2.71	7.56	46.2	31.1	65.1	23.6	19.5	6.92	3.99	2.35	1.65	1.45
Cfsm	0.315	0.879	5.37	3.62	7.57	2.74	2.27	0.805	0.464	0.273	0.192	0.169
In.	0.36	0.98	6.19	4.17	8.16	3.17	2.53	0.93	0.52	0.32	0.22	0.19
Ac-ft	166	450	2,840	1,910	3,740	1,450	1,160	426	237	145	102	86

Calendar year 1951: Max 320 Min 1.0 Mean 18.5 Cfsm 2.15 In. 29.23 Ac-ft 13,420
Water year 1951-52: Max 292 Min 1.2 Mean 17.5 Cfsm 2.03 In. 27.74 Ac-ft 12,710

Peak discharge (base, 150 cfs).--Dec. 27 (8:30 a.m.) 194 cfs (3.52 ft); Dec. 29 (1:30 p.m.) 221 cfs (3.64 ft); Feb. 1 (6 p.m.) 400 cfs (4.21 ft).
* Discharge measurement made on this day.

Applegate River near Wilderville, Oreg.

Location.--Lat 42°21'10", long. 123°24'10", in W½ sec. 15, T. 37 S., R. 6 W., on left bank 900 ft downstream from Jackson Creek and 4 miles southeast of Wilderville.

Drainage area.--694 sq mi.

Records available.--October 1938 to September 1952.

Gage.--Staff gage read once or twice daily. Datum of gage is 949.54 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--14 years, 700 cfs.

Extremes.--Maximum discharge during year, 18,700 cfs Feb. 2 (gage height, 14.4 ft, from floodmark); minimum observed, 17 cfs Aug. 26, 30.
1938-52: Maximum discharge, 25,800 cfs Oct. 29, 1950 (gage height, 17.5 ft, from floodmark), from rating curve extended above 9,500 cfs by logarithmic plotting; minimum, 3.0 cfs Sept. 12-15, 18-25, 1939, Sept. 3, 1950.

Remarks.--Records fair. Many diversions above station for irrigation and mining. Two irrigation ditches on left bank divert about 17 cfs around station. No regulation.

Revisions.--W 1064: Drainage area.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

1.0	14	3.0	490
1.3	33	4.0	1,100
1.6	66	5.0	2,050
2.0	140	8.0	6,180
2.5	285	12.0	13,500

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	196	5,380	2,070	9,160	1,420	1,850	2,530	1,450	560	72	21
2	102	188	2,830	1,630	12,900	1,340	1,720	2,050	1,410	530	69	23
3	288	178	2,510	1,360	5,890	1,260	1,640	1,720	1,430	490	72	18
4	208	178	2,760	1,230	4,700	1,220	1,660	1,470	1,450	463	69	20
5	165	180	2,580	1,110	4,010	1,150	2,010	1,380	1,500	445	54	39
6	155	168	1,560	1,050	3,620	1,080	2,410	1,340	1,520	427	66	37
7	140	168	1,160	967	3,190	1,020	2,720	1,520	1,340	392	64	35
8	131	162	974	904	2,720	981	2,770	1,940	1,320	360	54	33
9	127	158	806	866	2,510	939	2,340	1,720	1,360	320	61	52
10	122	220	722	2,050	2,350	1,030	2,150	1,740	1,180	306	52	*78
11	140	596	680	1,670	2,420	953	2,050	1,870	1,030	264	54	81
12	190	1,520	650	1,300	2,240	904	2,030	1,920	946	278	47	91
13	180	932	632	1,130	1,980	872	2,070	1,830	854	257	45	102
14	170	722	596	1,340	1,810	836	2,170	1,940	842	244	47	98
15	226	662	565	1,180	1,740	794	1,960	1,720	960	196	41	95
16	244	540	545	1,040	3,410	764	*1,790	1,660	878	208	40	61
17	193	450	525	884	2,960	734	1,790	1,850	806	175	37	47
18	180	400	590	836	2,510	960	2,100	2,100	818	*160	33	45
19	165	396	704	800	2,230	974	2,580	2,270	698	145	37	39
20	180	463	626	1,440	2,050	884	2,070	2,390	686	136	33	35
21	170	427	570	1,260	*1,850	860	1,850	2,010	674	131	35	31
22	165	384	580	1,260	1,590	884	1,830	1,850	638	127	24	30
23	278	348	1,820	1,190	1,640	925	1,870	1,940	638	118	21	25
24	*650	324	2,490	2,170	1,550	1,320	1,980	2,100	590	114	19	24
25	436	310	1,630	2,150	1,490	2,890	2,190	2,150	550	110	18	27
26	344	404	1,830	2,010	1,530	3,100	2,340	1,940	570	106	17	26
27	278	770	*7,030	2,070	1,540	2,830	2,290	*2,070	560	98	21	28
28	257	2,050	5,050	1,960	1,490	2,710	2,410	2,240	580	91	20	25
29	244	1,520	5,000	2,110	1,470	2,520	2,050	2,010	698	81	21	24
30	235	2,840	4,550	3,150	-	2,250	1,850	1,740	602	78	17	25
31	220	-	2,960	6,020	-	2,000	-	1,660	-	75	18	-
Total	6,613	17,854	60,905	50,207	88,550	42,404	62,540	58,670	28,578	7,485	1,278	1,315
Mean	213	595	1,965	1,620	3,053	1,368	2,085	1,893	953	241	41.2	43.8
Ac-ft	13,120	35,410	120,800	99,580	175,600	84,110	124,000	116,400	56,680	14,850	2,530	2,610

Calendar year 1951: Max 9,600 Min 4 Mean 966 Ac-ft 699,100
Water year 1951-52: Max 12,900 Min 17 Mean 1,165 Ac-ft 845,700

* Discharge measurement made on this day.

Slate Creek at Wonder, Oreg.

Location.--Lat 42°21'40", long. 123°31'10", in SW¼ sec. 10, T. 37 S., R. 7 W., on left bank half a mile upstream from Elliot Creek and 0.4 mile east of Wonder.

Drainage area.--30.9 sq mi.

Records available.--July to November 1913, October 1945 to September 1952 in reports of Geological Survey. October 1943 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,034.85 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 21, 1946, staff gages at several sites within half a mile of present site at various datums.

Average discharge.--8 years (1944-52), 77.4 cfs.

Extremes.--Maximum discharge during year, 2,230 cfs Feb. 1 (gage height, 7.48 ft); minimum, 0.7 cfs Aug. 15.
1913, 1943-52: Maximum discharge, 4,020 cfs Oct. 29, 1950 (gage height, 9.72 ft), from rating curve extended above 2,100 cfs on basis of slope-area determinations at gage heights 8.29 and 9.72 ft; minimum observed, 0.3 cfs July 16, 17, 1944.

Remarks.--Records good except those for period of backwater from tree, which are fair. Several small diversions above station for irrigation. No regulation.

Revisions (water years).--W 1184: 1948.

Rating tables, water year 1951-52, except period of backwater from tree (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 29

0.9	1.7	1.8	48
1.0	3.5	2.1	80
1.1	6.1	2.5	133
1.2	9.5	3.2	295
1.5	25		

Nov. 30 to Sept. 30

0.8	0.4	1.3	10	4.0	515
.9	1.2	1.5	21	5.0	910
1.0	2.4	2.0	64	7.0	2,050
1.1	4.2	2.5	130		
1.2	6.8	3.0	230		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	9.2	712	189	1,750	118	108	44	11	7.2	2.6	1.1
2	19	8.8	288	138	1,080	104	108	38	11	6.5	2.6	1.0
3	10	8.5	568	108	585	97	108	34	10	6.0	2.4	1.0
4	6.4	7.8	676	94	456	93	115	30	10	5.5	2.2	1.0
5	4.8	7.1	*498	86	367	*86	138	28	10	4.5	2.8	1.1
6	4.0	6.4	270	89	288	85	145	29	10	3.3	2.3	1.4
7	3.5	6.1	179	92	232	78	123	40	9.6	2.9	2.0	1.6
8	3.1	5.8	127	86	201	75	97	35	8.9	3.3	2.0	1.6
9	3.1	6.4	95	308	179	80	84	33	8.9	3.5	1.9	2.0
10	3.1	36	80	812	163	102	78	30	*9.6	3.7	1.4	2.2
11	7.5	158	70	403	171	95	75	29	10	3.5	1.4	2.3
12	8.8	216	68	237	157	88	72	27	10	3.1	1.1	2.2
13	6.4	130	64	175	132	80	73	25	10	2.6	1.0	2.0
14	6.4	88	59	185	115	77	66	23	13	2.4	1.1	1.9
15	14	61	52	165	134	72	59	22	11	2.4	1.1	*1.7
16	9.5	43	48	125	322	66	54	20	9.2	2.3	1.0	1.3
17	8.1	35	45	97	250	67	55	17	7.8	2.6	1.2	1.4
18	7.1	31	101	86	195	101	56	17	7.5	2.8	1.4	1.4
19	7.5	43	136	100	169	138	53	18	7.5	2.6	1.3	1.6
20	7.1	65	112	290	*163	130	47	17	*7.8	2.4	1.1	1.3
21	7.1	56	95	209	149	123	43	16	7.8	2.3	1.1	1.3
22	6.8	46	134	193	140	122	42	16	6.8	2.0	1.1	1.3
23	56	38	505	226	157	136	40	15	7.2	*2.3	1.1	1.6
24	77	34	473	529	179	220	39	14	7.2	2.6	1.3	1.6
25	*50	38	254	*388	181	290	38	13	7.8	2.3	1.6	1.6
26	31	36	644	310	173	266	35	12	7.5	2.4	1.8	1.6
27	20	50	1,170	320	169	230	33	11	7.5	2.4	1.6	1.4
28	16	280	740	261	157	205	30	11	9.2	2.2	1.8	1.6
29	14	290	776	243	140	163	*29	10	10	2.2	1.6	1.7
30	12	716	515	494	-	132	51	10	8.6	2.0	1.4	1.9
31	10	-	278	838	-	118	-	10	-	2.2	1.1	-
Total	449.3	2,556.1	9,837	7,878	8,554	3,837	2,094	694	272.4	98.0	49.4	46.7
Mean	14.5	85.2	317	254	295	124	69.8	22.4	9.08	3.16	1.59	1.56
Cfsm	0.469	2.76	10.3	8.22	9.55	4.01	2.26	0.725	0.294	0.102	0.051	0.050
In.	0.54	3.08	11.84	9.48	10.30	4.62	2.52	0.84	0.33	0.12	0.06	0.06
Ac-ft	891	5,070	19,510	15,630	16,970	7,610	4,150	1,380	540	194	98	93

Calendar year 1951: Max 1,630 Min 0.7 Mean 97.0 Cfsm 3.14 In. 42.62 Ac-ft 70,230
Water year 1951-52: Max 1,750 Min 1.0 Mean 99.4 Cfsm 3.22 In. 43.79 Ac-ft 72,140

Peak discharge (base, 900 cfs).--Dec. 1 (4 a.m.) 1,060 cfs (5.31 ft); Dec. 27 (7 a.m.) 1,340 cfs (6.04 ft); Jan. 10 (2 a.m.) 1,160 cfs (5.72 ft); Feb. 1 (7 p.m.) 2,230 cfs (7.48 ft).
* Discharge measurement made on this day.
Note.--Backwater from tree on control Dec. 18 to Feb. 7.

Grave Creek at Pease Bridge, near Placer, Oreg.

Location.--Lat 42°38'40", long. 123°12'20", in NW¼SW¼ sec. 5, T. 34 S., R. 4 W., on left bank 100 ft downstream from Pease Bridge, 1 mile upstream from Boulder Creek, and 5½ miles northeast of Placer.

Drainage area.--22 sq mi, approximately.

Records available.--October 1945 to September 1952 in reports of Geological Survey. September 1940 to September 1941 in reports of State engineer; October 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 2,384.1 ft above mean sea level, datum of 1929. Prior to Aug. 22, 1947, water-stage recorder at site 100 ft upstream at same datum.

Average discharge.--7 years (1945-52), 60.8 cfs.

Extremes.--Maximum discharge during year, 1,220 cfs Feb. 1 (gage height, 4.30 ft); minimum, 1.2 cfs Sept. 21-26.
1940-52: Maximum discharge, 3,550 cfs Oct. 29, 1950 (gage height, 6.95 ft), from rating curve extended above 830 cfs on basis of slope-area determination at gage height 5.73 ft; minimum, 0.3 cfs Sept. 13, 1944, Aug. 16-27, 1946, Aug. 18, 21, 1950.

Remarks.--Records good. One small diversion above station. Prior to 1945, Columbia upper ditch diverted water about 2 miles above station (bypassing station).

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 2-26)

Oct. 1 to Dec. 26				Dec. 27 to Sept. 30			
1.1	1.3	2.0	65	0.78	1.2	1.7	65
1.2	3.5	2.3	127	.8	1.6	2.0	121
1.3	6.7	2.7	240	.9	4.0	2.5	260
1.5	15	3.0	355	1.1	10	3.0	445
1.7	29	3.5	635	1.3	21	3.7	810
				1.5	39		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	12	594	121	810	98	180	71	15	13	3.4	2.0
2	15	11	268	96	613	85	183	61	13	11	3.4	1.8
3	12	9.9	323	81	344	79	194	55	13	9.8	3.0	1.6
4	8.2	9.5	375	75	316	75	239	47	13	9.1	2.5	2.0
5	6.0	9.0	275	65	281	65	320	45	12	8.8	3.2	3.4
6	4.7	8.6	172	59	227	61	337	47	*12	8.0	3.4	2.7
7	4.1	7.7	113	54	191	57	295	59	12	6.1	3.2	2.5
8	3.5	7.7	77	50	180	57	221	94	10	5.8	3.0	2.0
9	3.2	8.2	54	46	171	79	180	75	10	5.8	3.0	*2.7
10	3.0	20	44	47	161	133	177	68	10	5.5	2.7	3.4
11	7.3	95	52	45	186	106	177	64	11	5.5	2.5	3.4
12	12	183	95	40	163	90	171	58	10	6.1	2.0	3.0
13	8.6	*158	115	39	126	76	186	55	10	5.8	2.0	2.7
14	9.5	192	82	37	108	68	174	49	13	5.5	2.2	2.5
15	31	110	61	36	164	61	133	43	13	4.9	2.2	2.2
16	15	68	52	35	312	*59	126	41	11	4.9	2.2	2.0
17	11	49	44	34	197	61	145	43	9.8	4.6	2.2	1.8
18	9.5	37	128	33	145	65	174	41	9.1	*4.6	2.2	1.6
19	9.5	46	161	32	115	61	158	39	8.4	4.6	2.0	1.6
20	11	57	105	32	94	54	*113	36	8.8	4.3	2.0	1.6
21	16	49	80	31	81	49	100	32	9.4	4.3	2.0	1.4
22	17	40	245	30	73	50	104	29	8.8	4.3	2.0	1.2
23	148	34	463	33	68	65	104	27	10	3.4	2.0	1.4
24	103	29	*365	78	66	287	115	25	9.4	3.4	2.2	1.2
25	58	27	189	*75	71	354	117	23	9.8	3.2	2.5	1.2
26	35	66	346	66	75	344	110	20	9.1	2.7	2.5	1.4
27	25	121	610	73	94	334	102	20	9.4	3.0	2.5	1.8
28	20	222	413	75	110	320	87	19	11	3.2	2.5	1.8
29	16	171	381	87	108	248	67	18	21	3.2	2.2	1.6
30	14	425	254	182	-	197	83	16	16	3.0	2.2	1.6
31	12	-	168	362	-	197	-	16	-	2.7	2.0	-
Total	659.1	2,282.6	6,702	2,149	5,652	3,935	4,872	1,336	338.0	170.1	76.9	61.1
Mean	21.3	76.1	216	69.3	195	127	162	43.1	11.3	5.49	2.48	2.04
Cfsm	0.968	3.46	9.82	3.15	8.86	5.77	7.36	1.96	0.514	0.250	0.113	0.093
In.	1.11	3.86	11.33	3.63	9.55	6.65	8.24	2.26	0.57	0.29	0.13	0.10
Ac-ft	1,310	4,530	13,290	4,260	11,210	7,800	9,660	2,650	670	337	153	121

Calendar year 1951: Max 710 Min 0.4 Mean 71.7 Cfsm 3.26 In. 44.24 Ac-ft 51,890
Water year 1951-52: Max 810 Min 1.2 Mean 77.1 Cfsm 3.50 In. 47.72 Ac-ft 55,990

Peak discharge (base, 650 cfs).--Dec. 1 (4 a.m.) 868 cfs (3.84 ft); Dec. 27 (4 a.m.) 760 cfs (3.62 ft); Feb. 1 (7 p.m.) 1,220 cfs (4.30 ft).
* Discharge measurement made on this day.

East Fork Illinois River near Takilma, Oreg.

Location.--Lat 42°00'40", long. 123°37'40", in SE¼ sec. 10, T. 41 S., R. 8 W., on right bank 500 ft upstream from highway bridge, a quarter of a mile upstream from Long Gulch, and 3 miles south of Takilma.

Drainage area.--42.6 sq mi.

Records available.--October 1945 to September 1952 in reports of Geological Survey. October 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,746.6 ft above mean sea level (surveys by Bureau of Reclamation). Prior to Oct. 31, 1946, staff gages at nearby sites at different datums. Oct. 31, 1946, to May 13, 1949, staff gage at same site and datum.

Average discharge.--11 years (1941-52), 181 cfs.

Extremes.--Maximum discharge during year, 3,430 cfs Feb. 1 (gage height, 7.39 ft); minimum, 8.2 cfs Sept. 25.
1941-52: Maximum discharge, 7,610 cfs Oct. 29, 1950 (gage height, 9.56 ft); minimum observed, 5.2 cfs Sept. 24-29, 1944.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Esterly Upper Canal and Osgood Canal diverted water around station prior to 1942.

Revisions (water years).--W 1184: 1948.

Rating table, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 4-23)

0.5	6.3	2.5	170
.7	12	3.0	275
1.0	22	4.0	610
1.3	36	5.0	1,080
1.6	59	6.0	1,850
2.0	100	7.0	3,000

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	44	a1,300	298	2,500	210	280	444	194	76	21	10
2	119	39	a800	236	1,640	184	303	333	194	73	20	10
3	53	36	a1,000	202	895	176	333	268	204	74	18	10
4	28	34	*757	180	820	168	384	230	212	71	17	10
5	20	30	594	161	650	155	554	218	224	64	17	11
6	17	28	360	150	506	*146	658	232	198	57	16	11
7	15	27	250	136	405	136	602	280	184	53	16	11
8	14	25	204	122	351	128	490	290	196	52	16	11
9	13	24	162	142	315	134	399	278	180	50	16	14
10	13	70	146	292	298	162	375	298	138	48	16	14
11	39	685	146	214	342	155	384	339	110	43	14	13
12	64	1,290	178	161	295	144	402	330	*94	39	13	12
13	34	634	188	142	246	132	455	348	89	36	14	11
14	28	570	166	137	224	128	417	330	104	34	14	11
15	144	333	148	124	304	117	333	290	89	31	14	*10
16	69	210	136	107	744	112	315	315	87	30	14	10
17	46	150	125	99	514	115	372	390	96	30	14	10
18	35	132	300	93	369	136	530	427	111	28	14	10
19	37	190	306	96	292	126	518	452	111	28	14	9.6
20	34	a320	216	149	238	115	381	405	100	26	13	9.3
21	33	a240	174	130	204	107	330	309	86	26	13	9.0
22	34	a190	285	*126	194	105	351	295	78	24	13	8.7
23	269	a140	1,170	140	226	112	375	339	78	22	13	8.7
24	381	a120	830	354	224	222	434	363	76	*22	13	9.0
25	*214	a140	483	275	224	514	472	345	70	22	13	9.0
26	128	a240	634	262	236	578	444	336	66	21	13	8.7
27	100	a550	1,370	255	248	530	444	366	69	21	12	9.6
28	92	a700	1,100	232	244	522	414	342	89	21	12	9.6
29	79	a600	1,060	250	230	427	321	270	113	20	12	9.6
30	65	a850	690	635	-	348	*498	238	85	19	11	9.6
31	53	-	417	1,240	-	306	-	230	-	20	11	-
Total	2,292	8,641	15,695	7,140	13,978	6,650	12,568	9,930	3,725	1,181	447	309.4
Mean	73.9	288	506	230	482	215	419	320	124	38.1	14.4	10.3
Cfsm	1.73	6.76	11.9	5.40	11.3	5.05	9.84	7.51	2.91	0.894	0.338	0.242
In.	2.00	7.54	13.70	6.23	12.20	5.81	10.97	8.67	3.25	1.03	0.39	0.27
Ac-ft	4,550	17,140	31,130	14,160	27,720	13,190	24,930	19,700	7,390	2,340	887	614

Calendar year 1951: Max 2,740 Min 7.1 Mean 193 Cfsm 4.53 In. 61.37 Ac-ft 139,400
Water year 1951-52: Max 2,500 Min 8.7 Mean 226 Cfsm 5.31 In. 72.06 Ac-ft 163,800

Peak discharge (base, 2,500 cfs).--Feb. 1 (5:30 p.m.) 3,430 cfs (7.39 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams, particularly Althouse Creek near Holland.

Althouse Creek near Holland, Oreg.

Location.--Lat 42°06'00", long. 123°31'30", in SE¼ sec. 9, T. 40 S., R. 7 W., on right bank half a mile upstream from Carter Gulch and 2 miles southeast of Holland.

Drainage area.--23.8 sq mi.

Records available.--October 1946 to September 1952. October 1943 to July 1944 and August 1944 to January 1945 in files of State engineer (fragmentary).

Gage.--Water-stage recorder. Datum of gage is 1,754.54 ft above mean sea level (U. S. Bureau of Reclamation benchmark).

Average discharge.--6 years (1946-52), 68.6 cfs.

Extremes.--Maximum discharge during year, 1,250 cfs Feb. 1 (gage height, 4.84 ft), from rating curve extended above 230 cfs on basis of slope-area determinations at gage heights 5.14 and 5.96 ft; minimum, 5.8 cfs Oct. 9, 10.
1946-52: Maximum discharge, 2,160 cfs Oct. 29, 1950 (gage height, 5.96 ft), from rating curve extended above 260 cfs on basis of slope-area determinations at gage height 5.14 and 5.96 ft; minimum, 3.2 cfs Sept. 23-25, 1947.

Remarks.--Records good. Slight regulation from mining operations above station. Water used for placer mining is returned to creek above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 26				Dec. 27 to Sept. 30			
1.5	4.3	2.3	83	1.6	5.6	2.5	113
1.6	7.4	3.0	250	1.7	9.2	3.0	222
1.8	18	3.5	440	1.8	14	3.5	400
2.0	36			2.0	30	4.2	780
				2.2	57		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	9.7	427	135	780	103	127	181	101	32	13	7.2
2	27	9.2	242	109	650	95	127	155	97	30	12	7.2
3	12	8.8	*274	95	368	93	129	141	95	29	12	7.2
4	7.9	8.3	292	87	292	89	141	129	95	28	11	10
5	7.1	7.9	231	82	250	84	172	119	93	26	10	10
6	6.8	7.9	157	78	210	*80	200	125	89	26	10	9.2
7	6.2	7.9	123	71	183	76	202	137	82	25	10	8.4
8	6.2	7.4	103	64	166	72	186	141	80	23	10	8.4
9	5.8	7.9	87	67	155	74	168	137	76	22	9.6	10
10	5.8	19	79	101	147	84	161	141	67	21	9.6	10
11	11	73	75	80	168	78	157	147	*60	21	9.6	8.8
12	12	178	77	72	155	76	161	147	57	20	9.2	8.4
13	7.9	98	79	60	137	71	174	149	57	20	9.2	8.0
14	8.8	74	74	59	125	69	168	147	66	19	8.8	8.0
15	30	51	70	52	139	64	151	141	52	19	9.2	7.6
16	12	41	68	45	256	60	145	145	50	18	8.8	*7.6
17	9.2	33	64	40	188	60	153	159	46	18	8.8	7.6
18	8.3	29	101	40	157	66	181	174	46	17	8.8	7.2
19	8.8	64	103	42	139	62	190	181	45	17	8.8	7.2
20	8.3	79	90	67	123	57	168	168	45	16	8.4	6.8
21	8.8	56	79	*52	107	54	155	170	42	15	8.4	6.8
22	8.8	51	90	50	99	54	157	145	41	15	8.4	6.5
23	45	38	311	64	97	59	159	149	40	15	8.4	6.5
24	48	33	277	151	95	89	170	153	38	*14	8.4	6.5
25	*28	36	198	119	97	145	179	151	36	13	8.4	6.5
26	20	64	247	107	101	168	179	147	34	12	8.4	6.5
27	16	90	540	105	109	168	181	149	36	12	8.0	6.5
28	14	173	432	97	111	172	174	147	41	12	8.0	6.5
29	13	143	428	113	109	157	155	135	42	12	7.6	6.5
30	12	265	268	200	-	143	*202	121	36	12	7.6	6.5
31	10	-	172	404	-	133	-	111	-	12	7.6	-
Total	438.7	1,763.0	5,858	2,908	5,713	2,855	4,974	4,542	1,785	591	2,860	230.1
Mean	14.2	58.8	189	93.8	197	92.1	166	147	59.5	19.1	9.23	7.67
Cfsm	0.597	2.47	7.94	3.94	8.28	3.87	6.97	6.18	2.50	0.803	0.388	0.322
In.	0.69	2.75	9.15	4.54	8.93	4.46	7.77	7.10	2.79	0.92	0.45	0.36
Ac-ft	870	3,500	11,620	5,770	11,330	5,660	9,870	9,010	3,540	1,170	567	456

Calendar year 1951: Max 964 Min 4.6 Mean 77.7 Cfsm 3.26 In. 44.32 Ac-ft 56,280
Water year 1951-52: Max 780 Min 5.8 Mean 87.3 Cfsm 3.67 In. 49.91 Ac-ft 63,360

Peak discharge (base, 500 cfs).--Dec. 1 (4 a.m.) 590 cfs (3.73 ft); Dec. 27 (6:30 a.m.) 787 cfs (4.21 ft); Feb. 1 (6 p.m.) 1,250 cfs (4.84 ft).
* Discharge measurement made on this day.

Sucker Creek near Holland, Oreg.

Location.--Lat 42°09'00", long. 123°28'00", in NE¼ sec. 25, T. 39 S., R. 7 W., on right bank 1 mile downstream from Grayback Creek and 4.3 miles northeast of Holland.

Drainage area.--76 sq mi, approximately.

Records available.--October 1945 to September 1952 in reports of Geological Survey. April 1940 to August 1941 in reports of State engineer and September 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,777.22 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Sept. 16, 1947, staff gages at several sites within half a mile of present site at various datums. Sept. 16, 1947, to Sept. 19, 1952, staff gage at site 280 ft upstream at datum 0.62 ft higher.

Average discharge.--11 years (1941-52), 201 cfs.

Extremes.--Maximum discharge during year, 2,850 cfs Feb. 1 (gage height, 6.1 ft, from floodmark), from rating curve extended above 1,300 cfs on basis of slope-area determination at gage height 8.3 ft; minimum, 28 cfs Oct. 9, Sept. 25, 26, 27, 29, 30.
1940-52: Maximum discharge, 5,720 cfs Oct. 29, 1950 (gage height, 8.75 ft, from floodmark), from rating curve extended above 1,300 cfs on basis of slope-area determination at gage height 8.3 ft; minimum, 19 cfs Sept. 27, 28, 1947.

Remarks.--Records fair except those for period of backwater from debris, which are poor. Grayback Canal diverts water from Grayback Creek above station for domestic use and irrigation; most of return flow from this canal enters creek above station. No regulation.

Rating tables, water year 1951-52, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 30				Dec. 1 to Sept. 19				Sept. 20-30	
0.9	26	2.0	200	0.9	23	2.5	330	1.3	23
1.2	53	2.5	350	1.2	50	3.0	520	1.4	32
1.5	96	3.6	860	1.5	88	4.0	1,110		
				2.0	185	5.3	2,120		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	43	1,160	344	2,120	310	400	610	432	162	61	35
2	122	41	570	289	1,800	295	400	520	416	158	59	34
3	49	40	*540	253	934	289	400	504	448	149	54	33
4	34	41	520	230	850	277	464	472	432	141	56	35
5	33	39	432	220	718	271	560	408	424	133	57	38
6	32	38	302	200	610	259	694	432	416	126	53	40
7	31	38	235	190	550	*230	660	504	408	122	50	38
8	29	37	205	176	496	225	610	456	416	118	50	40
9	28	37	176	180	464	247	580	456	351	111	48	46
10	29	96	167	210	448	265	540	496	289	108	48	40
11	53	164	167	190	496	247	530	504	271	104	48	38
12	45	417	176	162	456	241	530	504	*235	98	46	36
13	38	205	171	154	408	225	560	496	225	94	45	35
14	39	210	162	154	365	215	520	472	205	91	45	33
15	83	145	149	141	456	205	488	490	230	88	44	33
16	47	117	145	124	970	200	464	520	220	82	43	33
17	39	103	137	120	600	200	504	620	210	81	43	33
18	38	90	215	117	496	205	620	694	205	77	42	31
19	43	113	220	113	432	202	610	620	200	74	42	30
20	43	149	149	132	386	171	512	570	210	74	40	*29
21	41	140	141	152	344	176	512	540	185	71	40	29
22	43	90	159	*149	323	180	504	512	176	69	40	29
23	153	90	796	160	309	185	530	694	185	69	40	29
24	149	86	456	244	309	316	560	680	180	*69	42	29
25	86	106	416	218	295	504	580	610	171	64	40	29
26	*66	175	605	208	330	560	630	590	162	64	40	29
27	55	215	1,560	212	372	590	660	694	180	61	38	29
28	55	465	998	202	351	570	580	570	222	60	38	29
29	53	350	1,180	244	337	512	*500	504	222	59	36	29
30	51	860	670	468	-	480	778	512	171	58	36	28
31	49	-	464	946	-	464	-	440	-	60	35	-
Total	1,716	4,740	13,443	6,902	17,025	9,316	16,480	16,694	8,097	2,895	1,399	999
Mean	55.4	158	434	223	587	301	549	539	270	93.4	45.1	33.3
Cfsm	0.729	2.08	5.71	2.93	7.72	3.96	7.22	7.09	3.55	1.23	0.593	0.438
In.	0.84	2.32	6.58	3.38	8.33	4.56	8.06	8.17	3.96	1.42	0.68	0.49
Ac-ft	3,400	9,400	26,660	13,690	33,770	18,480	32,690	33,110	16,060	5,740	2,770	1,980

Calendar year 1951: Max 2,040 Min 22 Mean 227 Cfsm 2.99 In. 40.56 Ac-ft 164,400
Water year 1951-52: Max 2,120 Min 28 Mean 272 Cfsm 3.58 In. 48.79 Ac-ft 197,800

* Discharge measurement made on this day.
Note.--Backwater from debris Jan. 11-30.

West Fork Illinois River near O'Brien, Oreg.

Location.--Lat 42°03'50", long. 123°43'00", in NW¼ sec. 25, T. 40 S., R. 9 W., on left bank 800 ft upstream from bridge on U. S. Highway 199 and half a mile southwest of O'Brien.

Drainage area.--46.6 sq mi.

Records available.--October 1945 to September 1952 in reports of Geological Survey. February to November 1930 and February 1943 to September 1945 in files of State engineer.

Gage.--Staff gage read once daily, oftener during periods of rapidly changing stage. Datum of gage is 1,404.37 ft above mean sea level, datum of 1929. Feb. 10 to Nov. 30, 1930, staff gage at site 1½ miles upstream at different datum. Feb. 2, 1943, to Oct. 31, 1946, staff gage at site 600 ft upstream from 1930 gage at different datum.

Average discharge.--9 years (1943-52), 226 cfs.

Extremes.--Maximum discharge during year, 5,000 cfs Feb. 1 (gage height, 7.60 ft); minimum, 4.9 cfs Sept. 26-30.
1930, 1943-52: Maximum discharge, 14,200 cfs Oct. 28, 1950 (gage height, 12.96 ft, from floodmark), from rating curve extended above 7,200 cfs on basis of slope-area determination of peak flow; minimum, 2.1 cfs Sept. 16, 17, 1945.

Remarks.--Records fair. One small diversion above station.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
0.1	10	1.5	300	-0.1	4.9	1.0	150
.2	16	2.0	495	0.0	8.5	1.5	285
.4	35	3.0	980	.1	14	2.0	475
.7	80	5.0	2,350	.2	21	3.0	965
1.0	143	5.7	2,980	.4	42	5.0	2,340
				.7	87	6.6	3,860

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	50	1,580	502	3,860	330	324	136	33	25	8.5	5.5
2	252	45	875	387	2,480	279	419	114	31	23	8.5	5.2
3	123	42	1,450	320	1,420	313	399	98	31	21	7.7	5.2
4	50	39	*1,470	310	1,300	359	359	91	30	33	7.7	5.2
5	33	37	1,160	288	900	299	371	80	29	20	7.7	5.2
6	25	35	675	288	660	*267	371	91	29	19	7.7	5.5
7	21	33	467	261	520	243	313	91	28	18	7.3	5.5
8	17	31	360	231	443	228	270	132	27	16	6.9	5.5
9	16	30	286	415	363	237	237	106	25	16	6.9	6.5
10	15	143	239	1,260	324	371	228	95	27	16	6.9	8.1
11	85	1,170	203	660	451	310	220	87	27	15	6.9	7.3
12	188	1,720	191	431	399	282	212	80	*27	18	6.9	7.3
13	87	770	173	327	334	243	220	77	29	14	6.5	6.9
14	58	585	159	383	324	225	215	70	33	11	6.5	7.3
15	232	375	146	306	498	202	182	64	30	11	6.1	6.9
16	114	265	138	246	1,380	190	170	64	28	11	6.1	*6.5
17	80	194	126	218	705	198	170	58	25	11	6.1	6.5
18	60	182	475	202	498	334	178	55	21	10	6.1	6.1
19	70	360	471	302	407	306	172	52	16	11	6.5	6.1
20	63	471	341	720	338	249	145	52	19	11	6.1	5.5
21	56	375	265	451	282	228	134	50	21	10	6.1	5.5
22	62	268	644	*493	267	228	129	47	20	10	6.1	5.2
23	675	206	1,980	475	570	246	123	45	21	*11	6.1	5.2
24	590	167	1,110	1,070	538	419	121	42	23	11	5.5	5.2
25	330	216	598	755	451	600	119	42	23	10	5.5	5.2
26	*194	770	1,480	565	427	640	106	40	21	10	5.5	4.9
27	133	612	2,970	820	443	529	102	40	23	10	5.5	4.9
28	98	1,030	2,000	575	423	563	98	38	23	10	5.5	4.9
29	80	860	2,380	502	387	379	87	35	47	8.5	5.2	4.9
30	70	1,520	1,310	1,560	-	341	*134	33	31	7.7	5.2	4.9
31	60	-	725	2,570	-	379	-	33	-	7.3	5.8	-
Total	3,960	12,601	26,447	17,893	21,392	10,017	6,328	2,138	798	435.5	201.6	174.6
Mean	128	420	853	577	738	323	211	69.0	26.6	14.0	6.50	5.82
Ac-ft	7,850	24,990	52,460	35,490	42,430	19,870	12,550	4,240	1,580	864	400	346

Calendar year 1951: Max 5,010 Min 4.5 Mean 289 Ac-ft 209,100
Water year 1951-52: Max 3,860 Min 4.9 Mean 280 Ac-ft 203,100

* Discharge measurement made on this day.

Illinois River at Kerby, Oreg.

Location.--Lat 42°12'00", long. 123°39'20", in NW¼ sec. 9, T. 39 S., R. 8 W., on right bank at Finch Bridge and half a mile west of Kerby.

Drainage area.--364 sq mi.

Records available.--March 1926 to September 1952.

Gage.--Staff gage read twice daily. Datum of gage is 1,234.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to May 9, 1928, staff gage at site half a mile upstream at different datums. May 9, 1928, to Nov. 2, 1934, staff gage at present site at different datums. Nov. 3, 1934, to Sept. 30, 1950, water-stage recorder 1 mile downstream at datum 18.76 ft lower than present datum.

Average discharge.--26 years, 1,132 cfs.

Extremes.--Maximum discharge during year, 25,600 cfs Feb. 1 (gage height, 10.0 ft, from floodmark), from rating curve extended above 9,100 cfs on basis of slope-area determination at 13.7 ft gage height; minimum, 17 cfs Sept. 30.
1926-52: Maximum discharge, 52,000 cfs Feb. 20, 1927 (gage height, 19.6 ft, site and datum then in use), from rating curve extended above 26,000 cfs on basis of slope-area determination at gage height 19.2 ft; minimum, 13 cfs Sept. 10-15, 1934.

Remarks.--Records poor. Diversions for irrigation of about 5,500 acres above station. Some diversions for mining during winter months. No regulation.

Revisions (water years).--W 864: 1936-37. W 1184: 1927(M), 1942(M), 1943, 1946(M), 1948. W 1218: Drainage area.

Rating tables, water year 1951-52 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 1-6, 23-26)

Oct. 1 to Dec. 26				Dec. 27 to Sept. 30			
1.1	69	3.5	1,120	0.6	15	3.0	910
1.5	113	4.0	1,740	.9	28	3.5	1,480
2.0	205	5.0	3,540	1.2	47	4.0	2,280
2.5	370	6.0	6,210	1.5	72	5.0	4,330
3.0	680	7.2	10,300	1.8	122	7.0	10,800
				2.1	230	9.3	21,700
				2.5	480		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	338	10,100	2,920	21,700	1,950	a1,680	2,050	850	333	72	27
2	672	314	5,070	2,150	11,200	a1,800	a1,800	1,640	a820	274	63	27
3	776	287	*8,980	2,080	8,680	a1,600	a1,900	1,480	a820	258	63	28
4	236	263	5,880	a1,950	6,530	a1,700	a2,000	1,250	a820	216	a60	27
5	215	248	6,090	1,850	a5,300	*1,560	a2,300	1,200	810	194	a55	27
6	133	218	4,520	1,710	a4,500	a1,450	a2,800	1,250	a760	a175	a50	27
7	105	195	a3,000	1,510	a3,800	1,350	a2,500	1,350	a740	a155	a50	26
8	113	190	a2,200	1,350	a3,300	1,300	a2,300	1,380	a740	147	a50	26
9	89	180	a1,800	1,790	2,960	1,300	a2,000	1,330	a680	130	a50	26
10	82	302	a1,500	6,530	2,690	1,520	a1,960	1,340	a600	120	a48	24
11	96	3,830	a1,400	3,880	3,340	1,480	a1,800	1,360	*534	111	a46	24
12	840	6,360	a1,500	2,540	3,220	1,480	a1,900	1,310	a480	104	a46	23
13	362	4,930	a1,440	a1,930	2,920	1,250	a2,050	1,280	a460	83	a44	22
14	586	4,040	a1,360	2,080	3,200	1,140	a1,900	1,300	a460	73	a46	34
15	1,290	3,100	a1,300	1,770	4,430	1,110	a1,700	1,230	a460	69	a46	*32
16	876	1,560	a1,200	a1,520	7,180	1,110	a1,500	a1,350	438	71	a46	30
17	565	849	a1,100	a1,220	4,260	1,100	a1,700	a1,600	410	67	a44	29
18	430	664	a2,600	a1,340	3,700	1,700	a2,100	a1,800	417	71	a44	31
19	405	930	a2,640	a1,500	3,240	1,660	a2,100	a1,700	384	69	*42	29
20	310	1,670	a2,000	2,540	2,520	1,580	a1,700	1,340	404	71	40	27
21	445	1,370	a1,640	2,080	2,120	1,450	a1,500	1,240	384	76	41	22
22	430	984	a2,200	a2,200	2,140	1,310	a1,600	1,190	339	*77	40	23
23	2,220	816	7,440	*2,320	2,920	1,330	1,720	a1,450	333	80	39	24
24	2,460	720	*5,690	4,920	2,780	1,590	a1,800	a1,600	339	79	38	22
25	1,670	760	3,210	a4,500	2,570	2,740	a1,900	a1,450	309	74	36	21
26	*885	1,770	6,270	3,260	2,370	3,160	a1,950	a1,350	297	74	36	20
27	640	2,300	16,200	3,530	2,280	2,820	a2,000	a1,550	a350	68	35	20
28	a520	3,990	12,400	2,920	2,350	3,020	1,760	a1,300	a450	71	35	19
29	a460	3,190	12,700	a3,240	2,210	2,650	*1,420	a1,200	a480	67	30	18
30	420	6,820	9,260	6,500	-	2,370	2,300	a1,050	352	61	26	17
31	395	-	4,100	13,800	-	1,980	-	930	-	66	29	-
Total	18,795	53,188	146,790	93,430	130,410	53,560	57,640	42,850	15,720	3,584	1,390	752
Mean	606	1,773	4,735	3,014	4,497	1,728	1,921	1,382	524	116	44.8	25.1
Ac-ft	37,280	105,500	291,200	185,300	258,700	106,200	114,300	84,990	31,180	7,110	2,760	1,490

Calendar year 1951: Max 18,000 Min 17 Mean 1,509 Ac-ft 1,092,000
Water year 1951-52: Max 21,700 Min 17 Mean 1,689 Ac-ft 1,226,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of combined flow for stations on East and West Forks Illinois River, Sucker Creek near Holland, and Althouse Creek near Holland.

Deer Creek near Dryden, Oreg.

Location.--Lat 42°15'50", long. 123°27'00", near center of sec. 18, T. 38 S., R. 6 W., on left bank 500 ft downstream from confluence of North and South Forks and 5 miles east of Dryden.

Drainage area.--23 sq mi, approximately.

Records available.--October 1945 to September 1952 in reports of Geological Survey. November 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,650.10 ft above mean sea level (surveys by Bureau of Reclamation). Prior to Sept. 12, 1946, staff gage at same site at datum 1.26 ft higher.

Average discharge.--10 years (1942-52), 69.7 cfs.

Extremes.--Maximum discharge during year, 2,660 cfs Feb. 1 (gage height, 6.84 ft), from rating curve extended above 1,300 cfs on basis of slope-area determination at gage height 7.92 ft; minimum, 1.3 cfs part of each day Sept. 22-27.
1941-52: Maximum discharge, 4,370 cfs Oct. 29, 1950 (gage height, 7.92 ft), from rating curve extended above 1,300 cfs on basis of slope-area determination of peak flow; minimum, 0.9 cfs part of each day Sept. 20-24, 1951.

Remarks.--Records good except those for period of backwater from logs, which are poor. No regulation. One small diversion above station for irrigation.

Rating tables, water year 1951-52, except period of backwater from logs (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 1				Feb. 2 to Sept. 30			
1.2	2.3	3.0	217	1.2	1.0	2.3	61
1.4	6.5	4.0	560	1.3	2.0	2.6	109
1.6	13	5.0	1,050	1.4	3.4	3.0	205
1.9	28	6.0	1,780	1.5	5.8	4.0	560
2.2	59	7.0	2,880	1.7	13	5.4	1,300
2.5	106			2.0	31		

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	8.7	681	136	2,110	102	109	80	32	14	4.7	1.7
2	22	7.9	308	102	1,280	85	124	68	31	13	4.2	1.5
3	11	7.3	422	84	600	75	130	59	30	12	3.8	1.6
4	6.0	7.1	435	73	516	68	142	51	29	11	3.4	1.7
5	4.4	6.5	*287	65	398	*61	208	49	29	10	3.4	2.3
6	3.8	6.3	170	60	293	57	247	59	29	9.8	3.2	2.3
7	3.4	6.0	119	55	229	53	220	75	28	9.0	3.2	2.3
8	3.1	5.8	92	51	190	47	165	85	25	8.7	3.1	2.3
9	2.9	6.0	74	57	175	49	132	75	24	8.4	3.1	2.6
10	2.5	29	63	131	162	61	126	77	21	8.0	2.9	2.9
11	8.5	164	*61	97	172	57	126	80	*19	7.7	2.8	2.6
12	12	257	72	74	150	53	130	75	18	7.1	2.6	2.4
13	6.8	153	72	62	122	48	150	74	18	6.8	2.5	2.3
14	6.5	144	63	59	105	46	132	67	25	6.4	2.5	2.1
15	38	88	55	54	180	42	105	61	22	6.1	2.5	*1.9
16	15	62	51	47	588	38	95	64	18	5.8	2.5	1.9
17	9.3	45	46	42	318	40	115	78	18	5.8	2.4	1.7
18	7.6	34	132	39	208	48	165	89	17	5.5	2.4	1.7
19	10	64	125	43	162	47	155	89	16	5.0	2.4	1.5
20	8.5	84	90	70	128	41	111	80	16	5.2	2.3	1.5
21	8.7	63	72	65	109	40	91	67	14	5.0	2.3	1.5
22	8.5	47	104	60	98	43	95	60	14	5.0	2.3	1.4
23	98	38	581	*74	104	54	98	61	14	*4.4	2.3	1.4
24	78	32	440	192	111	142	115	62	14	4.4	2.3	1.4
25	*41	33	242	168	117	241	124	61	14	4.2	2.4	1.4
26	25	111	284	164	128	265	122	57	13	4.0	2.4	1.4
27	18	154	940	173	130	241	117	57	13	3.8	2.4	1.4
28	15	299	609	150	128	223	107	54	15	3.6	2.3	1.5
29	13	244	676	161	115	178	*83	47	19	3.6	2.1	1.5
30	11	460	384	438	-	140	88	40	16	3.4	2.0	1.5
31	9.3	-	194	978	-	126	-	37	-	3.8	1.9	-
Total	513.3	2,666.6	7,944	4,024	9,126	2,811	3,927	2,038	609	210.5	84.6	55.2
Mean	16.6	88.9	256	130	315	90.7	131	65.7	20.3	6.79	2.73	1.84
Cfsm	0.722	3.87	11.1	5.65	13.7	3.94	5.70	2.86	0.883	0.295	0.119	0.080
In.	0.83	4.31	12.85	6.51	14.76	4.55	6.35	3.30	0.98	0.34	0.14	0.09
Ac-ft	1,020	5,290	15,760	7,980	18,100	5,580	7,790	4,040	1,210	418	168	109

Calendar year 1951: Max 1,310 Min 1.1 Mean 85.7 Cfsm 3.73 In. 50.60 Ac-ft 62,060
Water year 1951-52: Max 2,110 Min 1.4 Mean 92.9 Cfsm 4.04 In. 55.01 Ac-ft 67,460

Peak discharge (base, 930 cfs).--Dec. 1 (4 a.m.) 1,080 cfs (5.05 ft); Dec. 27 (6 a.m.) 1,140 cfs (5.90 ft); Feb. 1 (5 p.m.) 2,660 cfs (6.84 ft).
* Discharge measurement made on this day.
Note.--Backwater from logs Dec. 4 to Jan. 31.

Reservoirs in Rogue River basin, Oreg.

Fish Lake.--Lat 42°23', long. 122°21', in SE¼ sec. 4, T. 37 S., R. 4 E., at reservoir outlet, 14 miles east of Lake Creek Post Office. Drainage area, 17 sq mi, approximately. Records available, December 1915 to September 1952. Staff gage read daily. Datum of gage is 185.4 ft below mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1921, staff gage on former gate tower at datum 4,799 ft higher. Maximum contents observed during year, 7,440 acre-ft June 28 to July 7 (elevation, 4,825.80 ft); minimum observed, 793 acre-ft Oct. 1 (elevation, 4,805.42 ft). Maximum contents observed during period 1915-52, 8,020 acre-ft June 1, 1943 (elevation, 4,827.19 ft); no usable contents at times.

Reservoir is formed by rock-faced earth dam, completed in fall of 1915; storage began in November 1915. Capacity, 8,147 acre-ft between elevations 4,799 ft (outlet tunnel) and 4,827.5 ft (spillway crest, incomplete). Water is diverted during summer from Fourmile Lake in Klamath River basin through Cascade Canal into Fish Lake.

Emigrant Gap Reservoir.--Lat 42°09'40", long. 122°36'20", 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. Drainage area, 64 sq mi, approximately (revised). Records available, December 1924 to September 1952. Staff gage read 1 to 17 times each month. Datum of gage is at mean sea level (levels by Talent Irrigation District). Maximum contents observed during year, 8,650 acre-ft Mar. 24 (elevation, 2,174.8 ft); minimum observed, 200 acre-ft Oct. 25 (elevation, 2,092.8 ft). Maximum contents during period 1924-52, 8,850 acre-ft Jan. 7, 1948 (elevation, 2,175.6 ft); 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, 8,340 acre-ft between elevations 2,070 ft (16-inch sluice pipe) and 2,173.5 ft (crest of spillway). Dead storage negligible. Water is used for irrigation of lands near Talent.

Revisions (water years).--W 834: 1936. W 1064: 1945.

Monthly elevation and contents, water year October 1951 to September 1952

Date	Fish Lake			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	4,805.40	788	-	-	a165	-
Oct. 31	4,811.70	2,480	+1,692	-	a310	+145
Nov. 30	4,815.30	3,610	+1,130	-	a1,400	+1,090
Dec. 31	4,817.80	4,450	+840	-	a7,490	+6,090
Calendar year 1951	-	-	-240	-	-	+1,810
Jan. 31	4,819.40	5,010	+560	-	a6,060	-1,430
Feb. 29	4,820.30	5,330	+320	-	a6,700	+640
Mar. 31	4,821.30	5,700	+370	-	a8,340	+1,640
Apr. 30	4,823.80	6,650	+950	-	a8,340	0
May 31	4,825.50	7,320	+670	-	a7,620	-720
June 30	4,825.80	7,440	+120	2,166.5	6,810	-810
July 31	4,822.90	6,300	-1,140	2,138.1	2,650	-4,160
Aug. 31	4,818.50	4,690	-1,610	-	a890	-1,760
Sept.30	4,815.90	3,810	-880	-	a420	-470
Water year 1951-52	-	-	+3,022	-	-	+255

a Interpolated.

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-ft 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," and "outer" zones concentric about the apex of the alluvial fan.[1]

The inner zone is 3 to 3½ miles downstream from Milton and 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 cubic feet per second, of springs in Walla Walla River basin, Oreg.-Wash., during water year October 1951 to September 1952†

Springs of the inner zone

Date	Spring	Locality	Discharge (cfs)
Oct. 22	Nicholas Spring, Oreg...	NE¼NE¼ sec. 24, T. 6 N., R. 35 E., 150 ft above confluence of spring channel and Walla Walla River.	1.46
Feb. 7	....do.....	....do.....	2.03
May 23	....do.....	....do.....	1.53
Aug. 1	....do.....	....do.....	.70
Oct. 22	Big Spring Branch (west prong), Oreg.	SE¼NW¼ sec. 24, T. 6 N., R. 35 E., at Ballou residence 75 ft above bridge on county road.	9.41
Feb. 6	....do.....	....do.....	7.04
May 23	....do.....	....do.....	15.7
July 31	....do.....	....do.....	9.46
Oct. 22	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.	3.02
Feb. 6	....do.....	....do.....	2.54
Aug. 31	....do.....	....do.....	2.27
Oct. 27	Engle Spring, Oreg.....	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., total flow at diversion dam.	3.88
Feb. 6	....do.....	....do.....	3.91
May 23	....do.....	....do.....	4.86
Aug. 4	....do.....	....do.....	3.12
Oct. 22	Downing Spring, Oreg....	SE¼SW¼ sec. 23, T. 6 N., R. 35 E., at weir 200 ft below spring orifice.	2.64
Feb. 6	....do.....	....do.....	1.66
May 23	....do.....	....do.....	3.15
July 31	....do.....	....do.....	2.55
Oct. 22	Haun Spring, Oreg.....	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., at Haun farm, 200 ft above highway crossing.	1.72
Feb. 6	....do.....	....do.....	1.63
May 23	....do.....	....do.....	2.17
July 31	....do.....	....do.....	1.95

Springs of intermediate and outer zones

Oct. 24	McEvoy Spring, Wash.....	SE¼NW¼ sec. 10, T. 6 N., R. 35 E., at McEvoy farm, 200 ft above Walla Walla Ry.	4.37
Feb. 6	....do.....	....do.....	1.99
May 24	....do.....	....do.....	3.70
Aug. 1	....do.....	....do.....	3.88
Oct. 22	Lewis Spring, Oreg.....	NW¼NW¼ sec. 23, T. 6 N., R. 35 E., below road crossing.	2.28
Feb. 6	....do.....	....do.....	1.87
May 23	....do.....	....do.....	2.46
July 31	....do.....	....do.....	1.99
Oct. 24	Unnamed Spring, Wash....	NW¼NE¼ sec. 16, T. 6 N., R. 35 E., at small diversion structure.	3.18
Feb. 6	....do.....	....do.....	1.98
May 24	....do.....	....do.....	3.23
Aug. 1	....do.....	....do.....	2.63
Oct. 25	East Mud Creek (west prong), Oreg.	SW¼SW¼ sec. 22, T. 6 N., R. 35 E., at two weirs.....	1.66
Feb. 5	....do.....	....do.....	.94
May 21	....do.....	....do.....	2.15
Aug. 1	....do.....	....do.....	2.70
Oct. 25	East Mud Creek (east prong), Oreg.	SE¼SW¼ sec. 22, T. 6 N., R. 35 E., in diversion ditch 150 ft below diversion dam.	1.18
Feb. 5	....do.....	....do.....	.55
May 21	....do.....	....do.....	1.07
Aug. 1	....do.....	....do.....	.64
Oct. 25	East Mud Creek (branch of), Oreg.	SW¼SW¼ sec. 16, T. 6 N., R. 35 E., near Lockwood dwelling.	4.41
Feb. 7	....do.....	....do.....	1.96
Aug. 1	....do.....	....do.....	3.41
Oct. 25	South Mud Creek, Oreg...	SE¼NW¼ sec. 28, T. 6 N., R. 35 E., at Vonder Ahe farm..	2.36
Feb. 8	....do.....	....do.....	.73

† 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. 132A, Oct. 14, 1935.

Discharge measurements, in cubic feet per second, of springs in Walla Walla River basin, Oreg.-Wash., during water year October 1951 to September 1952--Continued†

Springs of intermediate and outer zones--Continued

Date	Spring	Locality	Discharge (cfs)
Aug. 4	South Mud Creek, Oreg...	SE¼NW¼ sec. 28, T. 6 N., R. 35 E., at Vonder Ahe farm.	3.17
Oct. 24	Johnson Creek, Oreg.....	SE¼NW¼ sec. 29, T. 6 N., R. 35 E., at two weirs.....	3.17
Feb. 5	....do.....	....do.....	.94
Aug. 1	....do.....	....do.....	3.88
Oct. 12	Dugger Creek, Oreg.....	NW¼NW¼ sec. 32, T. 6 N., R. 35 E., at two weirs.....	7.45
Feb. 5	....do.....	....do.....	3.65
Aug. 2	....do.....	....do.....	8.13
Oct. 24	Schwartz Spring Branch (south prong), Oreg.	SW¼SE¼ sec. 23, T. 6 N., R. 34 E., at weirs.....	1.89
Feb. 7	....do.....	....do.....	4.33
Aug. 2	....do.....	....do.....	3.18
Oct. 24	Schwartz Spring Branch (north prong), Oreg.	NE¼SW¼ sec. 23, T. 6 N., R. 34 E., in ditch diverting from spring.	1.92
Feb. 7	....do.....	....do.....	3.36
Aug. 2	....do.....	....do.....	3.05
Oct. 25	South Mud Creek, Oreg...	SW¼SE¼ sec. 13, T. 6 N., R. 34 E., at Krumbaugh farm	3.06
Feb. 7	....do.....	....do.....	4.07
Aug. 2	....do.....	....do.....	3.58

† Measurements by Umatilla County deputy watermaster.

Measurements of streamflow 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 1951 to September 1952

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Umatilla River basin, Oreg.				
Sept. 8	Meacham Creek....	Umatilla River..	Mouth, 1 mile east of Gibbon.....	7.79
Willow Creek basin, Oreg.				
Aug. 10	Eightmile Canyon.	Willow Creek....	NW¼NE¼ sec. 32, T. 2 S., R. 24 E., 4 miles northwest of Eightmile.	a2,100
a Flow at crest stage; computed by indirect method.				
Rock Creek basin, Wash.				
Aug. 1	Rock Creek.....	Columbia River..	NW¼ sec. 32, T. 3 N., R. 19 E., 200.ft above railroad crossing, 2½ miles southeast of Goodnoe.	0.14
John Day River basin, Oreg.				
Apr. 8	Dixie Creek.....	John Day River..	Sec. 2, T. 13 S., R. 33 E., ½ mile north of Prairie City.	80.2
Sept. 4	Canyon Creek....	....do.....	SE¼ sec. 25, T. 14 S., R. 31 E., 5 miles south of Canyon City.	5.83
4	Rock Creek.....	....do.....	Mouth, 6½ miles northwest of Dayville.....	.83
Aug. 15	Cable Creek.....	Camas Creek.....	Mouth, 5 miles northeast of Ukiah.....	3.04
Deschutes River basin, Oreg.				
Oct. 30	Deschutes River..	Columbia River..	NW¼NW¼ sec. 28, T. 21 S., R. 8 E., at former gaging station below Sheep Springs near Lapine.	689
July 15	....do.....	....do.....	....do.....	826
29	Davis Creek.....	Deschutes River.	SW¼ sec. 7, T. 22 S., R. 8 E., below springs at north head of creek.	b92.0
Oct. 4	....do.....	....do.....	SE¼ sec. 5, T. 22 S., R. 8 E., downstream from unnamed left-bank tributary.	b260
16	....do.....	....do.....	....do.....	265
30	....do.....	....do.....	....do.....	266
Nov. 6	....do.....	....do.....	....do.....	b259
Aug. 26	....do.....	....do.....	....do.....	269
Sept. 4	....do.....	....do.....	....do.....	b267
18	....do.....	....do.....	....do.....	262
Nov. 23	Unnamed stream...	....do.....	Near center of sec. 4, T. 22 S., R. 9 E., at road crossing about 2 miles northeast of Wickiup Dam.	b11.0
May 21	....do.....	....do.....	....do.....	b11.6
June 23	....do.....	....do.....	....do.....	b22.6
Aug. 14	....do.....	....do.....	....do.....	b14.7
Sept. 4	....do.....	....do.....	....do.....	b13.6
June 12	Clear Creek.....	White River.....	Outlet of Clear Lake, 9 miles southeast of Government Camp.	23.4
July 28	....do.....	....do.....	....do.....	8.30
Sept.12	....do.....	....do.....	....do.....	4.76
Aug. 27	Tygh Creek.....	....do.....	SW¼NW¼ sec. 4, T. 4 S., R. 13 E., 1 mile west of Tygh Valley.	2.68
b By engineer of Bureau of Reclamation.				
Klickitat River basin, Wash.				
July 14	Unnamed springs..	Klickitat River.	NE¼ sec. 4, T. 6 N., R. 13 E., at mouth across river from fish hatchery, 5¼ miles northeast of Glenwood.	16.9
Aug. 2	....do.....	....do.....	....do.....	15.7
June 19	Wonder Springs...	....do.....	E½ sec. 4, T. 6 N., R. 13 E., 1,000 ft above mouth, 5½ miles northeast of Glenwood.	14.2
July 14	....do.....	....do.....	....do.....	15.0
Aug. 2	....do.....	....do.....	....do.....	12.8
20	....do.....	....do.....	....do.....	12.7
Sept.23	....do.....	....do.....	....do.....	13.1
Hood River basin, Oreg.				
Sept.22	East Fork Hood River (head of Hood River).	Columbia River..	NE¼NW¼ sec. 28, T. 1 N., R. 10 E., 1 mile west of Mt. Hood Post Office.	51.0
22	Middle Fork Hood River.	Hood River.....	NW¼SE¼ sec. 24, T. 1 N., R. 9 E., 2.5 miles south of Dee.	58.1
22	Tony Creek.....	Middle Fork Hood River.	Mouth, 2.5 miles south of Dee.....	6.41
22	Deadpoint Creek..	West Fork Rood River.	Above fish hatchery, 1.2 miles northwest of Dee.	2.95
4	Hood River.....	Columbia River..	SW¼ sec. 15, T. 2 N., R. 10 E., at former gaging station at Tucker Bridge.	372
23	Neal Creek.....	Hood River.....	SE¼SW¼ sec. 13, T. 2 N., R. 10 E., 2.2 miles northeast of Odell.	30.9
4	Indian Creek.....	....do.....	Sec. 35 or 36, T. 3 N., R. 10 E., at highway crossing, south edge of Hood River.	17.9
Phelps Creek basin, Oreg.				
Sept. 4	Phelps Creek.....	Columbia River..	Highway crossing, 2 miles west of Hood River.	2.34

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Little White Salmon River basin, Wash.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Nov. 24	Broughton Lumber Co. diversion.	Little White Salmon River.	SW¼ sec. 36, T. 4 N., R. 9 E., at Willard.	24.7
Feb. 2	....do.....	....do.....	....do.....	3.89
Apr. 30	....do.....	....do.....	....do.....	21.0
July 18	....do.....	....do.....	....do.....	24.3
Feb. 4	Rock Creek.....	....do.....	NW¼ sec. 14, T. 3 N., R. 9 E., at crossing of county road 2 miles south of Willard.	a237

a Flow at crest stage; computed by indirect method.

Tributaries between Little White Salmon River and Carson Creek

Sept. 3	Perham Creek.....	Columbia River....	Mouth, 6 miles west of Hood River, Oreg...	1.34
3	Viento Creek.....	....do.....	Mouth, at Viento, Oreg.....	1.34
3	Starvation Creek.	....do.....	Mouth, 1 mile southwest of Viento, Oreg...	1.43
3	Warren Creek.....	....do.....	Sec. 4, T. 2 N., R. 9 E., 2 miles southwest of Viento, Oreg.	c.5
3	Lindsey Creek....	....do.....	Highway crossing, 3 miles east of Wyeth, Oreg.	6.08
4	Gorton Creek.....	....do.....	Sec. 1, T. 2 N., R. 8 E., ½ mile south of Wyeth, Oreg.	.86
Feb. 4	Unnamed stream...	....do.....	SE¼ sec. 27, T. 3 N., R. 8 E., at crossing of U. S. Highway 830, ½ mile east of Home Valley, Wash.	a39.3

a Flow at crest stage; computed by indirect method.
c Estimated.

Carson Creek basin, Wash.

June 19	Carson Creek.....	Columbia River....	NE¼ sec. 29, T. 3 N., R. 8 E., 10 ft above road crossing at Carson.	0.50
July 15	....do.....	....do.....	....do.....	.08
Aug. 4	....do.....	....do.....	....do.....	c.04
20	....do.....	....do.....	....do.....	c.02
Sept.23	....do.....	....do.....	....do.....	No flow

c Estimated.

Tributaries between Carson Creek and Hamilton Creek, Oreg.

Sept. 3	Herman Creek.....	Columbia River....	Highway crossing, 2 miles northeast of Cascade Locks.	14.4
Dec. 18	Unnamed stream...	....do.....	NW¼ sec. 7, T. 2 N., R. 8 E., at highway bridge, 1 mile east of Cascade Locks.	a73.5
Mar. 25	....do.....	....do.....	....do.....	13.1
Apr. 28	....do.....	....do.....	....do.....	13.4
Sept. 3	....do.....	....do.....	....do.....	1.45
23	Eagle Creek.....	....do.....	Mouth, 1.5 miles northeast of Bonneville..	19.1
3	Tanner Creek.....	....do.....	Above hatchery diversion, ½ mile above mouth, at Bonneville.	31.4
2	Moffett Creek....	....do.....	Mouth, 1.2 miles southwest of Bonneville..	c.25

a Flow at crest stage; computed by indirect method.
c Estimated.

Hamilton Creek basin, Wash.

June 22	Hamilton Creek...	Columbia River....	S½ sec. 18, T. 2 N., R. 7 E., 100 ft below logging road bridge, 1¼ miles northwest of North Bonneville.	23.0
July 13	....do.....	....do.....	....do.....	12.1
Aug. 4	....do.....	....do.....	....do.....	5.74
21	....do.....	....do.....	....do.....	5.57
Sept.23	....do.....	....do.....	....do.....	2.54
June 19	Greenleaf Creek..	Hamilton Creek....	SW¼ sec. 16, T. 2 N., R. 7 E., at road crossing, ¼ mile northwest of North Bonneville.	6.71
July 15	....do.....	....do.....	....do.....	4.44
Aug. 4	....do.....	....do.....	....do.....	2.73
20	....do.....	....do.....	....do.....	2.18
Sept.23	....do.....	....do.....	....do.....	1.54

Tributaries between Hamilton Creek and Sandy River

Sept.25	Unnamed stream...	Columbia River....	SW¼ sec. 19, T. 2 N., R. 7 E., at crossing of U. S. Highway 830, 2¼ miles southwest of North Bonneville, Wash.	c0.03
2	McCord Creek.....	....do.....	Mouth, at Warrendale, Oreg.....	.98
25	Hardy Creek.....	....do.....	NE¼ sec. 25, T. 2 N., R. 6 E., at crossing of U. S. Highway 830, 2½ miles southwest of North Bonneville, Wash.	.40
June 22	Woodward Creek...	....do.....	NE¼ sec. 35, T. 2 N., R. 6 E., 75 ft above railroad bridge near mouth, 3¾ miles southwest of North Bonneville, Wash.	13.6
July 15	....do.....	....do.....	....do.....	8.47
Aug. 4	....do.....	....do.....	....do.....	4.86
21	....do.....	....do.....	....do.....	2.98
Sept.25	....do.....	....do.....	....do.....	1.99
25	Unnamed stream...	....do.....	NE¼ sec. 34, T. 2 N., R. 6 E., at crossing of U. S. Highway 830, 5 miles southwest of North Bonneville, Wash.	.47
June 22	Duncan Creek.....	....do.....	W½ sec. 34, T. 2 N., R. 6 E., at crossing of U. S. Highway 830, 5½ miles southwest of North Bonneville, Wash.	5.33
July 15	....do.....	....do.....	....do.....	2.06
Aug. 4	....do.....	....do.....	....do.....	.69

c Estimated.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Tributaries between Hamiton Creek and Sandy River--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Aug. 21	Duncan Creek.....	Columbia River....	W½ sec. 34, T. 2 N., R. 6 E., at crossing of U. S. Highway 830, 5½ miles southwest of North Bonneville, Wash.	0.06
Sept.25	....do.....	....do.....	....do.....	No flow
25	Unnamed stream...	....do.....	S½ sec. 33, T. 2 N., R. 6 E., at crossing of U. S. Highway 830, 6½ miles southwest of North Bonneville, Wash.	c.07
25	....do.....	....do.....	NE¼ sec. 6, T. 1 N., R. 6 E., at crossing of U. S. Highway 830, 8 miles southwest of North Bonneville, Wash.	.63
2	Multnomah Creek..	....do.....	Mouth, below Multnomah Falls, Oreg.....	4.14
2	Bridal Veil Creek	....do.....	Below falls, ½ mile southwest of Bridal Veil, Oreg.	7.95
June 23	Lawton Creek.....	....do.....	NW¼ sec. 24, T. 1 N., R. 4 E., just below railroad crossing near mouth, 4 miles southeast of Washougal, Wash.	3.31
July 15	....do.....	....do.....	....do.....	1.81
Aug. 4	....do.....	....do.....	....do.....	1.04
21	....do.....	....do.....	....do.....	1.27
Sept.25	....do.....	....do.....	....do.....	1.27

c Estimated.

Sandy River basin, Oreg.

Sept.26	Boulder Creek....	Salmon River.....	Mouth, 1 mile southwest of Brightwood.....	2.16
26	Wildcat Creek....	Sandy River.....	Mouth, 3 miles west of Brightwood.....	.53
26	Cedar Creek.....	....do.....	NW¼SE¼ sec. 18, T. 2 S., R. 5 E., 1½ miles east of Sandy.	5.37
2	Sandy River.....	Columbia River....	SW¼SW¼ sec. 30, T. 1 S., R. 5 E., at Dodge Park, above mouth of Bull Run River.	31.4

Washougal River basin, Wash.*

June 20	Bobs Creek.....	Washougal River...	NW¼ sec. 23, T. 2 N., R. 5 E., 50 ft above mouth and 4½ miles north of Prindle.	3.04
July 16	....do.....	....do.....	....do.....	2.95
Aug. 5	....do.....	....do.....	....do.....	2.97
22	....do.....	....do.....	....do.....	2.97
Sept.24	....do.....	....do.....	....do.....	2.49
June 25	Boyles Lake outlet.	....do.....	W½ sec. 23, T. 2 N., R. 5 E., 25 ft above mouth and 4½ miles north of Prindle.	2.86
July 16	....do.....	....do.....	....do.....	2.55
Aug. 5	....do.....	....do.....	....do.....	1.72
22	....do.....	....do.....	....do.....	1.50
Sept.24	....do.....	....do.....	....do.....	.90
June 25	Unnamed stream...	....do.....	W½ sec. 23, T. 2 N., R. 5 E., 100 ft above mouth and 4¼ miles north of Prindle.	.86
July 16	....do.....	....do.....	....do.....	.54
Aug. 5	....do.....	....do.....	....do.....	.33
22	....do.....	....do.....	....do.....	.36
Sept.24	....do.....	....do.....	....do.....	.21
June 25	....do.....	....do.....	SW¼ sec. 23, T. 2 N., R. 5 E., 100 ft above mouth and 4 miles north of Prindle.	.31
July 16	....do.....	....do.....	....do.....	.21
Aug. 5	....do.....	....do.....	....do.....	.18
22	....do.....	....do.....	....do.....	.14
Sept.24	....do.....	....do.....	....do.....	.16
July 17	Washougal River..	Columbia River....	SW¼ sec. 23, T. 2 N., R. 5 E., 3½ miles north of Prindle.	57.1
Aug. 5	....do.....	....do.....	....do.....	33.2
22	....do.....	....do.....	....do.....	28.9
Sept.24	....do.....	....do.....	....do.....	27.1
Oct. 5	West Fork Washougal River.	Washougal River...	Near center sec. 32, T. 2 N., R. 5 E., at former gaging station, 1,000 ft above mouth and 7 miles northeast of Washougal.	230
June 23	....do.....	....do.....	....do.....	50.9
July 17	....do.....	....do.....	....do.....	38.4
Aug. 6	....do.....	....do.....	....do.....	24.8
Sept.25	....do.....	....do.....	....do.....	14.4
Feb. 4	Canyon Creek.....	....do.....	SE¼ sec. 4, T. 1 N., R. 5 E., at crossing of State Highway 8-B, 8 miles east of Washougal.	a134
Oct. 23	Shanghai Creek...	Fifth Plain Creek.	SW¼ sec. 33, T. 3 N., R. 3 E., at crossing of county road, 3¼ miles southeast of Hockinson.	a102
June 7	Lacamas Creek....	Washougal River...	W½ sec. 7, T. 2 N., R. 3 E., at road crossing at Proebstel.	**15.4
Oct. 4	....do.....	....do.....	....do.....	32.7

* Includes one discharge measurement made in 1951 water year.
** Measurement made June 7, 1951.
a Flow at crest stage; computed by indirect method.

Willamette River basin, Oreg.

Sept.22	Salt Creek.....	Middle Fork Willamette River.	T. 23 S., R. 5½ E. (unsurveyed), 600 ft above falls, 10 miles southeast of McCredie Springs.	d42.6
Oct. 11	....do.....	....do.....	Former gaging station near Oakridge.....	136
Aug. 27	Waldo Lake.....	Black Creek.....	Outlet of unused tunnel from Klovdahl Bay.	7.89
Mar. 26	Coast Fork Willamette River.	Willamette River..	Below Bennett Creek at Cottage Grove.	e1,260
July 23	....do.....	....do.....	....do.....	62.3
Aug. 8	....do.....	....do.....	....do.....	e170

d Furnished by Eugene Water and Electric Board.
e Furnished by Corps of Engineers.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Willamette River basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Dec. 4	Unnamed stream...	Willamette River..	W½SW¼ sec. 11, T. 16 S., R. 3 W., at road crossing 2 miles south of Springfield.	a167
26	....do.....	....do.....	....do.....	a127
Feb. 3	....do.....	....do.....	....do.....	a57.7
June 26	Park Creek East..	Distributary of Park Creek.	NW¼SE¼ sec. 18, T. 13 S., R. 7 E., at Lava Lake.	d30.4
July 15	....do.....	....do.....	....do.....	d11.8
June 26	Park Creek West..	....do.....	....do.....	d20.4
July 15	....do.....	....do.....	....do.....	d9.15
Aug. 20	....do.....	....do.....	....do.....	d4.99
Sept.11	....do.....	....do.....	....do.....	d4.07
June 26	Unnamed spring...	Tributary to Lava Lake.	SW¼NW¼ sec. 17, T. 13 S., R. 7 E., at Lava Lake.	d1.67
26	Crescent Creek...	Lava Lake.....	NE¼NW¼ sec. 19, T. 13 S., R. 7 E., at Lava Lake.	d27.4
July 15	....do.....	....do.....	....do.....	d13.2
Aug. 19	....do.....	....do.....	....do.....	d3.72
Sept.11	....do.....	....do.....	....do.....	d3.88
June 26	Hackleman Creek..	Fish Lake.....	NE¼SE¼ sec. 25, T. 13 S., R. 6 E., ½ mile northwest of Fish Lake.	d48.4
July 15	....do.....	....do.....	....do.....	d19.8
Aug. 19	....do.....	....do.....	....do.....	d5.28
Sept.11	....do.....	....do.....	....do.....	d5.63
29	....do.....	....do.....	....do.....	d3.14
June 11	Fish Lake Creek..	Clear Lake.....	SW¼NW¼ sec. 32, T. 13 S., R. 7 E., below outlet of Fish Lake.	309
27	....do.....	....do.....	....do.....	d145
July 2	....do.....	....do.....	....do.....	159
10	....do.... ...	....do.....	....do.....	86.4
16	....do.....	....do.....	....do.....	d30.4
17	Great Spring.....	....do.....	NW¼SE¼ sec. 5, T. 14 S., R. 7 E., at Clear Lake.	d128
Nov. 17	McKenzie River...	Willamette River..	Sec. 20, T. 14 S., R. 7 E., 1/3 mile below Middle Falls.	625
Jan. 16	....do.....	....do.....	....do.....	505
Mar. 19	....do.....	....do.....	....do.....	474
June 11	....do.....	....do.....	....do.....	1,060
July 24	....do.....	....do.....	....do.....	634
Sept.10	....do.....	....do.....	....do.....	460
June 27	Ice Gap Creek....	McKenzie River....	Sec. 20, T. 14 S., R. 7 E., ½ mile southwest of Middle Falls.	d10.4
Sept.12	....do.....	....do.....	....do.....	d8.64
Aug. 20	McKenzie River...	Willamette River..	SW¼NW¼ sec. 31, T. 14 S., R. 7 E., 20 ft above Lower Falls (most of flow underground at this point).	d92.3
Sept. 5	....do.....	....do.....	....do.....	d52.8
16	....do.....	....do.....	....do.....	d37.4
Nov. 17	....do.....	....do.....	NE¼ sec. 1, T. 15 S., R. 6 E., 1 mile below Lower Falls.	883
June 13	....do.....	....do.....	....do.....	1,250
July 24	....do.....	....do.....	....do.....	894
Sept.10	....do.....	....do.....	....do.....	740
June 16	Payne Creek.....	McKenzie River....	Road crossing, 7 miles north of Belknap Springs.	d1.83
July 16	Carmen Creek.....	....do.....	Road crossing, 6½ miles north of Belknap Springs.	d47.7
Aug. 21	....do.....	....do.....	....do.....	d41.1
Sept.11	....do.....	....do.....	....do.....	d45.4
July 16	Smith River.....	....do.....	Mouth, in SE¼SE¼ sec. 11, T. 15 S., R. 6 E.	d42.2
Aug. 21	....do.....	....do.....	....do.....	d22.6
Sept.11	....do.....	....do.....	....do.....	d19.6
May 20	McKenzie River...	Willamette River..	Below Frissell Creek, 3 miles north of Belknap Springs.	2,550
21	....do.....	....do.....	....do.....	2,480
June 13	....do.....	....do.....	....do.....	1,860
Sept.25	....do.....	....do.....	....do.....	947
June 25	Lost Creek.....	McKenzie River....	SW¼SW¼ sec. 13, T. 16 S., R. 6 E., below White Branch.	349
Aug. 21	....do.....	....do.....	Below bridge on Clear Lake road, ½ mile above mouth.	278
Nov. 28	Wolf Creek.....	Blue River.....	T. 15 S., R. 6 E., below outlet of Wolf Meadow.	4.72
28	Unnamed stream...	Wolf Creek.....	T. 15 S., R. 6 E., first tributary below Wolf Meadow.	2.65
Sept. 2	McKenzie River...	Willamette River..	Emmerich Bridge, below Walterville power diversion, 1½ miles east of Walterville.	528
3	....do.....	....do.....	....do.....	437
3	....do.....	....do.....	....do.....	278
4	....do.....	....do.....	....do.....	645
3	McKenzie Irrigation Association Canal.	Diverting from McKenzie River.	Intake, ½ mile west of Hendricks Bridge, 2½ miles southwest of Walterville.	28.0
4	....do.....	....do.....	....do.....	37.1
Apr. 8	Bowers Slough....	Tributary to Willamette River	NE¼ sec. 33, T. 10 S., R. 4 W., at bridge, 4 miles northwest of Albany.	3.36
May 13	....do.....	....do.....	....do.....	.61
June 27	....do.....	....do.....	....do.....	.05
Mar. 25	Cold Creek.....	North Santiam River.	Mouth, in N½SE¼ sec. 28, T. 9 S., R. 4 E., 0.3 mile east of Niagara.	26.9
25	Unnamed stream...	....do.....	Mouth, SE¼ sec. 25, T. 9 S., R. 3 E., at road crossing, 1½ miles east of Gates.	38.1

a Flow at crest stage; computed by indirect method.
d Furnished by Eugene Water and Electric Board.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Willamette River basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Oct. 2	Middle Santiam River.	South Santiam River.	Former gaging station near Foster.....	2,880
Dec. 18	....do.....	....do.....	....do.....	4,230
Feb. 6	....do.....	....do.....	....do.....	4,900
Mar. 18	....do.....	....do.....	....do.....	1,040
Apr. 29	....do.....	....do.....	....do.....	2,000
June 9	....do.....	....do.....	....do.....	730
July 25	....do.....	....do.....	....do.....	264
Aug. 3	Thomas Creek Canal.	Diverting from Thomas Creek.	SW¼NW¼ sec. 23, T. 10 S., R. 2 W., 3 miles southwest of Scio.	6.86
20	....do.....	....do.....	....do.....	7.05
May 7	Little Luckiamute River.	Tributary to Luckiamute River	½ mile above mouth, near Suver.....	116
16	....do.....	....do.....	....do.....	95.9
June 25	....do.....	....do.....	....do.....	38.4
Aug. 5	....do.....	....do.....	....do.....	10.5
Sept.22	....do.....	....do.....	....do.....	7.63
Dec. 4	Glenn Creek.....	Willamette River..	SE¼NW¼ sec. 20, T. 7 S., R. 3 W., at road crossing, 3 miles northwest of Salem.	a64
Nov. 15	Unnamed stream...	Glenn Creek.....	SE¼SE¼ sec. 8, T. 7 S., R. 3 W., at road crossing, 4 miles northwest of Salem.	10.8
Dec. 4	....do.....	....do.....	....do.....	a104
Mar. 24	....do.....	....do.....	....do.....	12.3
May 7	Haskins Creek....	North Yamhill River.	NE¼ sec. 13, T. 3 S., R. 6 W., above Idlewild Creek.	9.58
15	....do.....	....do.....	....do.....	7.62
7	Idlewild Creek...	Haskins Creek.....	Mouth, in NE¼ sec. 13, T. 3 S., R. 6 W.	2.19
15	....do.....	....do.....	....do.....	2.05
July 11	....do.....	....do.....	....do.....	.75
Apr. 29	Haskins Creek....	North Yamhill River.	NE¼ sec. 13, T. 3 S., R. 6 W., at former gaging station below Idlewild Creek.	14.2
Sept.24	Pine Creek.....	Molalla River.....	Below South Fork, 2 miles above mouth and 11 miles southeast of Molalla.	2.08
24	Trout Creek.....	....do.....	Mouth, 6½ miles southeast of Molalla.	2.48
24	North Fork Molalla River.	....do.....	Mouth, 6 miles southeast of Molalla.	20.2
Oct. 1	Molalla River....	Willamette River..	SW¼ sec. 23, T. 5 S., R. 2 E., at former gaging station.	757
Sept.24	Milk Creek.....	Molalla River.....	NE¼SW¼ sec. 12, T. 4 S., R. 1 E., at road bridge, 2½ miles northwest of Mulino.	15.5
24	Drift Creek.....	Pudding River.....	Mouth, 3 miles southwest of Silverton....	c.04
1	Silver Creek.....	....do.....	SW¼ sec. 11, T. 8 S., R. 1 E., above North Falls, in State park.	d4.08
1	South Fork Silver Creek.	Silver Creek.....	NW¼ sec. 14, T. 8 S., R. 1 E., 1,000 ft above falls, in State park.	d2.27
June 2	Mill Creek.....	Pudding River.....	½ mile above mouth, at Aurora.....	11.7
July 15	....do.....	....do.....	....do.....	8.72
Aug. 28	....do.....	....do.....	....do.....	6.06
July 11	Wapato Lake Intake.	Tualatin River....	NW¼SW¼ sec. 36, T. 1 S., R. 4 W., above headgates near Gaston.	7
17	....do.....	....do.....	....do.....	5.79
Dec. 4	Beaver Creek.....	Gales Creek.....	Sec. 10, T. 2 N., R. 5 W., at road crossing, 7 miles northwest of Gales Creek.	a178
Jan. 25	....do.....	....do.....	....do.....	31.7
30	....do.....	....do.....	....do.....	a165
31	....do.....	....do.....	....do.....	101
Dec. 4	Unnamed stream...	....do.....	SE¼ sec. 26, T. 2 N., R. 5 W., 1½ miles south of Glenwood.	a40.0
Jan. 25	....do.....	....do.....	....do.....	5.47
31	....do.....	....do.....	....do.....	25:0
Feb. 4	....do.....	....do.....	....do.....	a38.9
Mar. 12	....do.....	....do.....	....do.....	6.77
July 10	West Fork Dairy Creek.	Dairy Creek.....	W½ sec. 18, T. 1 N., R. 3 W., at road crossing, 3½ miles north of Forest Grove.	1.67
Oct. 9	East Fork Dairy Creek.	....do.....	Former gaging station at Mountaindale.	11.7
24	....do.....	....do.....	....do.....	121
Nov. 19	....do.....	....do.....	....do.....	70.8
Jan. 3	....do.....	....do.....	....do.....	148
June 26	McKay Creek.....	....do.....	SE¼NW¼ sec. 25, T. 1 N., R. 3 W., at road crossing, 1 mile northwest of Hillsboro.	7.84
May 14	Unnamed creek....	Tualatin River....	SW¼NW¼ sec. 6, T. 2 S., R. 2 W., at road crossing, ½ mile north of Laurel.	1.22
July 31	....do.....	....do.....	....do.....	.13
31	....do.....	Unnamed creek.....	SW¼ sec. 6, T. 2 S., R. 2 W., below forks at road crossing east of Laurel.	.04
May 14	....do.....	....do.....	SW¼ sec. 6, T. 2 S., R. 2 W., above irrigation diversion, 100 ft below road crossing east of Laurel.	.39
14	....do.....	....do.....	SW¼ sec. 6, T. 2 S., R. 2 W., below irrigation diversion, 400 ft below road crossing east of Laurel.	.25
Aug. 21	Bonnie Creek.....	Clackamas River...	Mouth, in SE¼ sec. 26, T. 6 S., R. 7 E., 28 miles southeast of Estacada.	5.3
Sept.25	Roaring River....	....do.....	Mouth, 14 miles southeast of Estacada....	44.4
25	Fish Creek.....	....do.....	Mouth, 13 miles southeast of Estacada....	9.90
25	South Fork Clackamas River	....do.....	Mouth, 8 miles southeast of Estacada.....	10.0
25	North Fork Clackamas River.	....do.....	Mouth, 5 miles southeast of Estacada.....	6.51

a Flow at crest stage; computed by indirect method.
c Estimated.
d Furnished by Eugene Water and Electric Board.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Willamette River basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
May 13	South Fork Wade (or Stuby) Creek.	Wade Creek.....	SE¼NE¼ sec. 27, T. 3 S., R. 4 E., at road crossing 1¾ miles east of Estacada.	0.22
13	Wade (or Stuby) Creek.	Clackamas River...	SE¼SW¼ sec. 21, T. 3 S., R. 4 E., 0.4 mile below road crossing ½ mile east of Estacada.	1.27
Sept.26	Eagle Creek.....	....do.....	½ mile above mouth at road bridge, 3 miles southeast of Barton.	22.4
Aug. 28	Goose Creek.....	....do.....	NE¼NE¼ sec. 31, T. 2 S., R. 4 E., at road crossing at Eagle Creek.	.08
28	....do.....	....do.....	SE¼NE¼ sec. 25, T. 2 S., R. 3 E., at road crossing, 1 mile northwest of Eagle Creek.	.08
Sept.26	Deep Creek.....	....do.....	SE¼ sec. 15, T. 2 S., R. 3 E., at road bridge, 0.7 mile northwest of Barton.	5.44

Lake River basin, Wash.

Feb. 4	Burntbridge Creek	Vancouver Lake....	SE¼ sec. 14, T. 2 N., R. 1 E., at county road crossing, ¾ mile east of U. S. Highway 99 at north city limits of Vancouver.	a56.0
Oct. 4	Salmon Creek.....	Lake River.....	SE¼ sec. 26, T. 3 N., R. 1 E., at former gaging station, 4 miles north of Vancouver.	66.7

a Flow at crest stage; computed by indirect method.

Tributaries between Lake River and Lewis River, Oreg.

Sept.16	McCarty Creek....	Multnomah Channel.	SE¼ sec. 18, T. 2 N., R. 1 W., at road crossing, 0.6 mile northwest of Burlington.	c0.2
16	Unnamed stream...	....do.....	NW¼NW¼ sec. 18, T. 2 N., R. 1 W., at road crossing 1 mile northwest of Burlington.	c.07
16	South Scappoose Creek.	Scappoose Creek...	At road bridge, 0.7 mile north of Scappoose.	3.45
16	North Scappoose Creek.	....do.....	At road bridge, 1.1 miles north of Scappoose.	2.78
16	Sly Creek.....	Scappoose Bay.....	At road crossing, 2.3 miles north of Scappoose.	0
16	McNulty Creek....	....do.....	At road crossing, 2 miles south of St. Helens.	0
16	Milton Creek.....	....do.....	At road bridge at Houlton.....	.5

c Estimated.

Lewis River basin, Wash.

June 26	Speelyai Creek...	Lake Merwin.....	W½ sec. 23, T. 6 N., R. 3 E., 100 ft above mouth and 1 mile southwest of Yale.	38.9
July 21	....do.....	....do.....	....do.....	24.6
Aug. 7	....do.....	....do.....	....do.....	19.5
Sept. 5	....do.....	....do.....	....do.....	12.5
24	....do.....	....do.....	....do.....	11.2
June 26	Chelatchie Creek.	Cedar Creek.....	SW¼ sec. 16, T. 5 N., R. 3 E., 300 ft above mouth, at Amboy.	9.66
July 21	....do.....	....do.....	....do.....	6.63
Aug. 6	....do.....	....do.....	....do.....	5.14
Sept. 4	....do.....	....do.....	....do.....	5.69
24	....do.....	....do.....	....do.....	4.17
June 24	Copper Creek.....	East Fork Lewis River.	SE¼ sec. 30, T. 4 N., R. 5 E., 60 ft below Forest Service road bridge, 1.8 miles south of Sunset guard station.	27.2
July 18	....do.....	....do.....	....do.....	16.7
Aug. 6	....do.....	....do.....	....do.....	7.53
Sept. 4	....do.....	....do.....	....do.....	4.76
24	....do.....	....do.....	....do.....	5.94
June 26	Cedar Creek.....	Rock Creek.....	SW¼ sec. 32, T. 4 N., R. 4 E., 50 ft above mouth and ¾ mile west of Dole.	11.2
July 18	....do.....	....do.....	....do.....	7.76
Aug. 6	....do.....	....do.....	....do.....	6.28
Sept. 4	....do.....	....do.....	....do.....	3.52
24	....do.....	....do.....	....do.....	3.01
June 26	Rock Creek.....	East Fork Lewis River.	NE¼ sec. 31, T. 4 N., R. 4 E., 100 ft above swinging bridge and 1½ miles northwest of Dole.	31.6
July 18	....do.....	....do.....	....do.....	20.4
Aug. 6	....do.....	....do.....	....do.....	14.3
Sept. 4	....do.....	....do.....	....do.....	9.39
24	....do.....	....do.....	....do.....	8.83

Merril Creek basin, Oreg.

Sept.16	Merril Creek.....	Columbia River....	At road crossing, 1.3 miles northwest of Deer Island.	0
16	Tide Creek.....	Merril Creek.....	Above road bridge, 2.2 miles northwest of Deer Island.	.94

Goble Creek basin, Oreg.

Sept.17	Goble Creek.....	Columbia River....	Mouth, in NW¼ sec. 12, T. 6 N., R. 2 W., at Goble.	0

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Kalama River basin, Wash.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
June 27	Rock Creek.....	Kalama River.....	N½ sec. 36, T. 7 N., R. 1 E., 100 ft below road crossing at Pigeon Springs ranger station.	20.4
July 23	....do.....	....do.....	....do.....	17.8
Aug. 7	....do.....	....do.....	....do.....	14.6
Sept.23	....do.....	....do.....	....do.....	9.86

Unnamed basin, Wash.

Feb. 3	Unnamed stream...	Columbia River....	SW¼ sec. 19, T. 7 N., R. 1 W., at old highway crossing, at Carrolls.	a54.8

a Flow at crest stage; computed by indirect method.

Cowlitz River basin, Wash.

July 8	Skate Creek.....	Cowlitz River.....	NW¼ sec. 16, T. 13 N., R. 9 E., 1 mile above mouth and 1½ miles northwest of Packwood.	88.6
28	....do.....	....do.....	....do.....	29.8
Aug. 15	....do.....	....do.....	....do.....	22.3
Sept.23	....do.....	....do.....	....do.....	14.3
Aug. 23	Snyder Creek.....	Hall Creek.....	NW¼ sec. 26, T. 13 N., R. 9 E., at trail crossing, below Snyder Lake, 1½ miles southeast of Packwood.	.82
Sept.11	....do.....	....do.....	....do.....	.61
Aug. 23	Hager Creek.....	....do.....	NE¼ sec. 35, T. 13 N., R. 9 E., 500 ft below Hager Lake and 2½ miles southeast of Packwood.	7.41
Sept.11	....do.....	....do.....	....do.....	5.38
11	....do.....	....do.....	SW¼ sec. 26, T. 13 N., R. 9 E., ½ mile below Hager Lake and 2 miles southeast of Packwood.	6.29
Aug. 23	Little Hager Creek.	....do.....	NW¼ sec. 26, T. 13 N., R. 9 E., at Lily basin Trail crossing, 1½ miles southeast of Packwood.	3.39
Sept.11	....do.....	....do.....	....do.....	2.64
Oct. 23	Glacier Creek....	Johnson Creek.....	SE¼ sec. 12, T. 12 N., R. 9 E. (unsurveyed), at road crossing near mouth, 5 miles southeast of Packwood.	33.1
24	....do.....	....do.....	....do.....	25.7
May 7	....do.....	....do.....	....do.....	50.4
June 20	....do.....	....do.....	....do.....	51.8
Aug. 24	....do.....	....do.....	....do.....	17.0
Sept.12	....do.....	....do.....	....do.....	13.1
Aug. 24	Johnson Creek....	Cowlitz River.....	SW¼ sec. 33, T. 13 N., R. 9 E., at former gaging station, 1 mile above mouth and 2½ miles southwest of Packwood.	47.3
Sept.12	....do.....	....do.....	....do.....	35.6
July 8	Kilborn Creek....	....do.....	NE¼ sec. 21, T. 12 N., R. 8 E., at road crossing, 7 miles east of Randle.	12.0
26	....do.....	....do.....	....do.....	3.58
Aug. 14	....do.....	....do.....	....do.....	1.18
Sept.22	....do.....	....do.....	....do.....	.14
July 8	Owens Creek.....	....do.....	SW¼ sec. 20, T. 12 N., R. 8 E., at road crossing, 6 miles southeast of Randle.	1.00
26	....do.....	....do.....	....do.....	.41
Aug. 14	....do.....	....do.....	....do.....	.23
Sept.22	....do.....	....do.....	....do.....	No flow
July 8	Cunningham Creek.	....do.....	SE¼ sec. 19, T. 12 N., R. 8 E., at road crossing, 5½ miles southeast of Randle.	.95
26	....do.....	....do.....	....do.....	.44
Aug. 14	....do.....	....do.....	....do.....	.21
Sept.22	....do.....	....do.....	....do.....	.02
Apr. 27	Mill Creek.....	....do.....	SE¼ sec. 8, T. 21 N., R. 7 E., at crossing of State Highway 5, at Randle.	a79.2
July 8	Kiona Creek.....	....do.....	N½ sec. 14, T. 12 N., R. 6 E., at road crossing, 3 miles west of Randle.	6.91
26	....do.....	....do.....	....do.....	3.53
Aug. 15	....do.....	....do.....	....do.....	.89
Sept.23	....do.....	....do.....	....do.....	No flow
Oct. 1	Tower Rock Springs.	Cispus River.....	NE¼ sec. 13, T. 11 N., R. 7 E., at road culvert at former gaging station, 8 miles southeast of Randle.	3.71
24	....do.....	....do.....	....do.....	6.87
July 7	Greenhorn Creek..	....do.....	SE¼ sec. 15, T. 11 N., R. 7 E., below road crossing, 7½ miles south of Randle.	16.9
26	....do.....	....do.....	....do.....	8.57
Aug. 14	....do.....	....do.....	....do.....	4.81
Sept.22	....do.....	....do.....	....do.....	2.77
July 8	Landers Creek....	Cowlitz River.....	NW¼NW¼ sec. 7, T. 11 N., R. 5 E., 1,000 ft above road crossing, 1½ miles above mouth, and 3 miles southwest of Kosmos.	10.7
28	....do.....	....do.....	....do.....	6.13
Aug. 15	....do.....	....do.....	....do.....	6.15
Sept.23	....do.....	....do.....	....do.....	2.83
Apr. 27	Unnamed stream...	Tilton River.....	N½ sec. 32, T. 14 N., R. 5 E., on State Highway 5, 4 miles south of Mineral.	a76.4
July 7	East Fork Tilton River.	....do.....	NE¼ sec. 25, T. 13 N., R. 4 E., 100 ft below highway crossing and 2½ miles northeast of Morton.	31.5
28	....do.....	....do.....	....do.....	15.0
Aug. 15	....do.....	....do.....	....do.....	11.1
Sept.23	....do.....	....do.....	....do.....	6.60

a Flow at crest stage; computed by indirect method.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Cowlitz River basin, Wash.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
July 8	Salmon Creek.....	Cowlitz River.....	NW¼ sec. 28, T. 11 N., R. 1 W., 100 ft below Little Salmon Creek and 2¼ miles southeast of Toledo.	4.22
25	....do.....	....do.....	....do.....	2.07
Aug. 12	....do.....	....do.....	....do.....	1.07
Sept.23	....do.....	....do.....	....do.....	c.50
July 7	Lacamas Creek....	....do.....	NW¼ sec. 27, T. 11 N., R. 2 W., above road bridge, 1½ miles east of Vader.	3.06
24	....do.....	....do.....	....do.....	2.85
Aug. 13	....do.....	....do.....	....do.....	2.62
Sept.24	....do.....	....do.....	....do.....	2.57
July 7	Olequa Creek.....	....do.....	SE¼ sec. 21, T. 12 N., R. 2 W., just above North Fork, 1½ miles north of Winlock.	3.45
25	....do.....	....do.....	....do.....	3.46
Aug. 13	....do.....	....do.....	....do.....	3.08
Sept.24	....do.....	....do.....	....do.....	3.39
July 7	North Fork Olequa Creek.	Olequa Creek.....	SE¼ sec. 21, T. 12 N., R. 2 W., 50 ft above mouth and 1½ miles north of Winlock.	.40
25	....do.....	....do.....	....do.....	.33
Aug. 13	....do.....	....do.....	....do.....	.33
Sept.24	....do.....	....do.....	....do.....	.28
Feb. 3	Unnamed stream...	....do.....	NW¼ sec. 8, T. 11 N., R. 2 W., at county road crossing, 2½ miles south of Winlock.	a14.0
July 7	Stillwater Creek.	....do.....	NE¼ sec. 25, T. 11 N., R. 3 W., 100 ft above road crossing and 1¾ miles northwest of Vader.	5.01
24	....do.....	....do.....	....do.....	6.23
Aug. 13	....do.....	....do.....	....do.....	1.16
Sept.24	....do.....	....do.....	....do.....	1.23
Aug. 11	North Fork Toutle River.	Toutle River.....	NE¼ sec. 15, T. 9 N., R. 5 E., at road crossing at outlet of Spirit Lake.	46.9
Sept.22	....do.....	....do.....	....do.....	27.3
July 7	Outlet creek.....	....do.....	NW¼ sec. 30, T. 10 N., R. 1 E., at road crossing, 2 miles west of Toutle.	.82
24	....do.....	....do.....	....do.....	.14
Aug. 12	....do.....	....do.....	....do.....	.05
Sept.22	....do.....	....do.....	....do.....	.11
Feb. 4	Unnamed stream...	....do.....	NW¼ sec. 30, T. 10 N., R. 1 W., at Tower Road crossing, 4 miles northeast of Castle Rock.	a31.7
July 6	Scantigrease Creek.	Arkansas Creek....	SE¼ sec. 18, T. 9 N., R. 2 W., at road crossing, 3½ miles west of Castle Rock.	2.32
24	....do.....	....do.....	....do.....	2.13
Aug. 12	....do.....	....do.....	....do.....	.56
Sept.24	....do.....	....do.....	....do.....	.55
July 6	North Fork Arkansas Creek.	....do.....	SE¼ sec. 9, T. 9 N., 2 W., at road crossing, 1 mile west of Castle Rock.	5.00
24	....do.....	....do.....	....do.....	5.03
Aug. 12	....do.....	....do.....	....do.....	2.07
Sept.24	....do.....	....do.....	....do.....	1.32
July 3	Ostrander Creek..	Cowlitz River.....	NW¼ sec. 12, T. 8 N., R. 2 W., at road crossing just above South Fork, 3½ miles north of Kelso.	2.68
24	....do.....	....do.....	....do.....	1.93
Aug. 8	....do.....	....do.....	....do.....	1.22
Sept. 3	....do.....	....do.....	....do.....	.80
23	....do.....	....do.....	....do.....	.76
July 3	South Fork Ostrander Creek	Ostrander Creek...	NW¼ sec. 12, T. 8 N., R. 2 W., at mouth, 3½ miles north of Kelso.	2.05
24	....do.....	....do.....	....do.....	1.85
Aug. 8	....do.....	....do.....	....do.....	1.38
Sept. 3	....do.....	....do.....	....do.....	.80
23	....do.....	....do.....	....do.....	.76
July 2	Coweman River....	Cowlitz River.....	SW¼ sec. 17, T. 8 N., R. 1 E., at former gaging station above Mulholland Creek, 9½ miles east of Kelso.	61.9
23	....do.....	....do.....	....do.....	37.9
Aug. 8	....do.....	....do.....	....do.....	30.9
Sept.23	....do.....	....do.....	....do.....	18.5
Oct. 2	Mulholland Creek.	Coweman River.....	SW¼ sec. 17, T. 8 N., R. 1 E., at road crossing at mouth, 9½ miles east of Kelso.	95.5
July 3	Goble Creek.....	....do.....	SE¼ sec. 34, T. 8 N., R. 1 W., at road crossing, 5½ miles east of Kelso.	11.8
23	....do.....	....do.....	....do.....	8.48
Aug. 8	....do.....	....do.....	....do.....	6.32
Sept.23	....do.....	....do.....	....do.....	3.65

a Flow at crest stage; computed by indirect method.
c Estimated.

Germany Creek basin, Wash.

July 6	Germany Creek....	Columbia River....	NW¼ sec. 12, T. 8 N., R. 4 W., ½ mile above mouth and 10 miles northwest of Longview.	9.24
29	....do.....	....do.....	....do.....	5.31
Aug. 15	....do.....	....do.....	....do.....	5.58
Sept. 3	....do.....	....do.....	....do.....	3.48
24	....do.....	....do.....	....do.....	2.76

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Mill Creek basin, Wash.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
July 6	Little Mill Creek.	Mill Creek.....	NW¼ sec. 9, T. 8 N., R. 4 W., 200 ft above mouth and 9½ miles east of Cathlamet.	5.38
29	....do.....	....do.....	....do.....	3.20
Sept. 3	....do.....	....do.....	....do.....	2.18
24	....do.....	....do.....	....do.....	2.58

Clatskanie River basin, Oreg.

Sept.17	Beaver Creek....	Clatskanie River..	Sec. 10, T. 7 N., R. 4 W., at road crossing, 2 miles east of Clatskanie.	1.82

Tributaries between Clatskanie River and Elokomin River, Oreg.

Sept.17	Tandy Creek.....	Columbia River....	NE¼ sec. 10, T. 7 N., R. 5 W., at road crossing, ¼ mile south of Marshland.	c0.3
17	OK Creek.....	....do.....	NE¼ sec. 9, T. 7 N., R. 5 W., at road bridge, 3½ miles southeast of Westport.	.69
17	Unnamed stream..	....do.....	SE¼ sec. 5, T. 7 N., R. 5 W., at road crossing, 2½ miles southeast of Westport.	c.25
17	West Creek.....	....do.....	SE¼ sec. 36, T. 8 N., R. 6 W., at road crossing, ½ mile southeast of Westport.	c.6
17	Plympton Creek..	....do.....	Road crossing at Westport.....	4.85
17	Hunt Creek.....	....do.....	Above West Branch, at road crossing, 4½ miles northwest of Westport.	c.3

c Estimated.

Elokomin River basin, Wash.

July 5	Clear Creek.....	Elokomin River....	NE¼ sec. 16, T. 9 N., R. 5 W., at road crossing, 5 miles northeast of Cathlamet.	1.86
29	....do.....	....do.....	....do.....	1.13
Sept. 3	....do.....	....do.....	....do.....	1.00
25	....do.....	....do.....	....do.....	1.10

Brooks Slough basin, Wash.

Feb. 4	Risk Creek.....	Brooks Slough.....	NW¼ sec. 23, T. 9 N., R. 6 W., at crossing of State Highway 830, 3 miles southeast of Skamokawa.	a55.0

a Flow at crest stage; computed by indirect method.

Skamokawa Creek basin, Wash.

July 5	Wilson Creek....	Skamokawa Creek...	SW¼ sec. 4, T. 9 N., R. 6 W., at road crossing, 1½ miles northeast of Skamokawa.	14.2
29	....do.....	....do.....	....do.....	8.51
Sept. 2	....do.....	....do.....	....do.....	6.97
25	....do.....	....do.....	....do.....	6.40

Tributaries between Skamokawa Creek and Grays River, Oreg.

Sept.17	Gnat Creek.....	Skamokawa Creek...	NE¼ sec. 24, T. 8 N., R. 7 W., at highway bridge, 5 miles east of Knappa.	7.33
18	Big Noise Creek.	Gnat Creek.....	Sec. 14, T. 8 N., R. 7 W., at road crossing, 3½ miles east of Knappa.	c.3
18	Rock Creek.....	....do.....	SW¼ sec. 14, T. 8 N., R. 7 W., at road crossing, 3 miles east of Knappa.	.67
18	Supply Creek....	....do.....	SE¼ sec. 15, T. 8 N., R. 7 W., at road crossing, 2½ miles southeast of Knappa.	c.2
18	Fertile Valley Creek.	Columbia River....	NE¼NE¼ sec. 20, T. 8 N., R. 7 W., at road crossing, 1.4 miles southeast of Knappa.	c.15
18	Little Creek....	....do.....	SW¼SE¼ sec. 18, T. 8 N., R. 7 W., at road crossing, 1.3 miles southwest of Knappa.	0
18	Little Ferris Creek.	Ferris Creek.....	SW¼ sec. 24, T. 8 N., R. 8 W., 1.8 miles southeast of Svensen.	c.02
18	Ferris Creek....	Columbia River....	NW¼SW¼ sec. 23, T. 8 N., R. 8 W., at road crossing, 0.7 mile east of Svensen.	c.15
18	Bear Creek.....	....do.....	NW¼ sec. 22, T. 8 N., R. 8 W., at road crossing, 0.3 mile southwest of Svensen.	1.15

c Estimated.

Grays River basin, Wash.

Oct. 16	Grays River.....	Columbia River....	Center sec. 3, T. 10 N., R. 7 W., at former gaging station, 4¼ miles northeast of Grays River.	20.1
29	....do.....	....do.....	....do.....	28.1
July 5	Hull Creek.....	Grays River.....	NE¼ sec. 13, T. 10 N., R. 8 W., at road crossing, ¼ mile east of Grays River.	7.47
29	....do.....	....do.....	....do.....	4.01
Sept. 2	....do.....	....do.....	....do.....	2.67
25	....do.....	....do.....	....do.....	2.13

Mill Creek basin, Oreg.

Sept.18	Mill Creek.....	Columbia River....	Sec. 11, T. 8 N., R. 9 W., at road crossing, 3 miles east of Astoria.	0

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Klaskanine River basin, Oreg.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Sept.19	Unnamed stream...	South Fork Klaskanine River.	Mouth, in NW¼NW¼ sec. 12, T. 6 N., R. 8 W., 9 miles northwest of Jewell.	0.76
19	South Fork Klaskanine River.	Klaskanine River..	400 ft upstream from confluence with North Fork, 1.3 miles southeast of Olney.	3.81
19	North Fork of North Fork Klaskanine River.	North Fork Klaskanine River.	Above fish hatchery diversion, 2½ miles east of Olney.	1.53

Youngs Bay basin, Oreg.

Sept.18	Walluski River...	Youngs River.....	SE¼NE¼ sec. 2, T. 7 N., R. 9 W., 1.5 miles north of Olney.	c0.35
18	Little Walluski Creek.	Walluski River....	SE¼ sec. 26, T. 8 N., R. 9 W., 4 miles southeast of Astoria.	0
18	Lewis and Clark River.	Youngs Bay.....	Below Hartill Creek, 9 miles south of Astoria.	8.24

C Estimated.

Chinook River basin, Wash.

July 5	Chinook River....	Columbia River....	NE¼ sec. 8, T. 9 N., R. 10 W., at road crossing, 1 mile north of Chinook.	2.73
29	....do.....	....do.....	....do.....	2.28
Sept. 2	....do.....	....do.....	....do.....	2.19
25	....do.....	....do.....	....do.....	1.15

Coastal streams between Columbia River and Umpqua River, Oreg.

Aug. 12	Bergsvik Creek...	Necanicum River...	Sec. 26 or 35, T. 5 N., R. 9 W., at highway bridge, 1½ miles south of Necanicum.	0.27
12	Joe Creek.....	Bergsvik Creek....	Mouth at Necanicum.....	.41
11	Necanicum River..	Pacific Ocean.....	Below Bergsvik Creek, at Necanicum.....	4.02
11	Little Humbug Creek.	Necanicum River...	Mouth, 1.2 miles west of Necanicum.....	1.21
Jan. 22	North Fork Necanicum River.	....do.....	Above fish hatchery, 2 miles west of Necanicum.	48.3
30	....do.....	....do.....	....do.....	a358
Feb. 5	....do.....	....do.....	....do.....	141
Mar. 11	....do.....	....do.....	....do.....	114
Aug. 11	....do.....	....do.....	....do.....	2.72
11	South Fork Necanicum River.	....do.....	Sec. 29, T. 5 N., R. 9 W., above Seaside diversion, 6 miles east of Cannon Beach.	4.30
11	....do.....	....do.....	Sec. 29, T. 5 N., R. 9 W., below Seaside diversion, 6 miles east of Cannon Beach.	1.87
11	Mail Creek.....	....do.....	E½ sec. 24, T. 5 N., R. 10 W., at highway bridge, 4½ miles east of Cannon Beach.	.87
12	Necanicum River..	Pacific Ocean.....	NE¼ sec. 4, T. 5 N., R. 10 W., at highway bridge, 2½ miles south of Seaside.	16.7
Dec. 4	Asbury Creek.....	....do.....	Mouth, 5½ miles south of Cannon Beach....	a130
Jan. 23	....do.....	....do.....	....do.....	59.0
Feb. 4	....do.....	....do.....	....do.....	a211
5	....do.....	....do.....	....do.....	38.7
Mar. 24	....do.....	....do.....	....do.....	72.5
Aug. 12	....do.....	....do.....	....do.....	1.19
Sept.19	Beneke Creek.....	Fishhawk Creek....	Mouth, at Jewell.....	c.35
Aug. 13	Salmonberry River	Nehalem River.....	Mouth, in SE¼ sec. 10, T. 3 N., R. 8 W., 12 miles east of Nehalem.	29.5
12	Jack Horner Creek	Soapstone Creek...	Mouth, at highway bridge, 5 miles south of Necanicum.	.51
12	Soapstone Creek..	North Fork Nehalem River.	SW¼ sec. 15, T. 4 N., R. 9 W., 5 miles south of Necanicum.	1.45
12	North Fork Nehalem River.	Nehalem River.....	NW¼ sec. 6, T. 3 N., R. 9 W., ¼ mile below Tillamook-Clatsop County line.	16.9
13	Big Rackheap Creek.	North Fork Nehalem River.	Above Rackheap Creek, 4 miles northeast of Mohler.	.74
13	Rackheap Creek...	Big Rackheap Creek	Mouth, 4 miles northeast of Mohler.....	.12
13	Heitmiller Creek.	Pacific Ocean.....	Sec. 8, T. 1 N., R. 10 W., above Twin Rocks diversion, 1 mile south of Rockaway.	.80
13	....do.....	....do.....	Sec. 8, T. 1 N., R. 10 W., below Twin Rocks diversion, 1 mile south of Rockaway.	.59
13	Unnamed stream...	Watseco Creek.....	Sec. 8, T. 1 N., R. 10 W., 1½ miles south of Rockaway.	.22
13	Miami River.....	Tillamook Bay.....	½ mile above mouth, near Garibaldi.	21.3
Dec. 5	Unnamed stream...	....do.....	At road crossing at north edge of Bay City.	a31.2
Jan. 9	....do.....	....do.....	....do.....	a51.6
23	....do.....	....do.....	....do.....	a24.1
Mar. 17	....do.....	....do.....	....do.....	a55.5
Aug. 14	Kilchis River....	....do.....	At private bridge, 3 miles southeast of Bay City.	26.1
14	North Fork Wilson River.	Wilson River.....	1 mile above mouth, 5 miles east of Tillamook.	12.7
14	Tillamook River..	Tillamook Bay.....	At bridge, above Bewley Creek, 3 miles south of Tillamook.	7.48

a Flow at crest-stage; computed by indirect method.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Coastal streams between Columbia River and Umpqua River, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Mar. 12	Nestucca River...	Nestucca Bay.....	Below Clarence Creek, 3½ miles southeast of Blaine.	915
Oct. 12	....do.....	....do.....	Below Powder Creek, 3 miles southeast of Blaine.	311
Mar. 14	....do.....	....do.....	....do.....	961
Apr. 11	....do.....	....do.....	....do.....	537
May 26	....do.....	....do.....	....do.....	126
July 8	....do.....	....do.....	....do.....	55.5
Aug. 19	....do.....	....do.....	....do.....	34.4
Sept. 3	....do.....	....do.....	....do.....	27.3
Aug. 14	Beaver Creek.....	Nestucca River....	Mouth, at Beaver.....	12.0
14	Three Rivers.....	....do.....	Below highway bridge at Hebo.....	24.2
15	Little Nestucca River.	Nestucca Bay.....	Above Fall Creek, 3 miles southeast of Oretown.	16.6
15	Neskowin Creek...	Pacific Ocean.....	At highway bridge, ½ mile south of Neskowin.	10.6
18	Salmon River.....	....do.....	Above highway bridge at Otis.....	35.9
15	Schooner Creek...	Siletz Bay.....	Sec. 25, T. 7 S., R. 11 W., at bridge, 2 miles east of Taft.	14.8
18	Rocky Creek.....	Pacific Ocean.....	Mouth, 2 miles south of Depoe Bay.....	2.21
19	Yaquina River....	Yaquina Bay.....	NW¼ sec. 23, T. 10 S., R. 9 W., below Hayes Creek, 1 mile northeast of Chitwood.	6.04
19	Elk Creek.....	Yaquina River.....	N½ sec. 25, T. 11 S., R. 10 W., 2½ miles southeast of Elk City.	12.5
19	Yachats River....	Pacific Ocean.....	Sec. 36, T. 14 S., R. 12 W., 1.7 miles east of Yachats.	20.3
19	Tenmile Creek....	....do.....	Above Mill Creek, 6 miles south of Yachats.	10.7
19	Big Creek.....	....do.....	Mouth, 9 miles south of Yachats.....	6.64
19	Cape Creek.....	....do.....	Mouth, 12 miles south of Yachats.....	7.98
20	Sutton Creek.....	....do.....	Outlet of Sutton Lake, 5½ miles north of Florence.	4.29
21	Wildcat Creek....	Siuslaw River.....	Mouth, at Austa.....	12.5
21	North Fork Siuslaw River.	....do.....	Above McLeod Creek, at Minerva.....	9.53
20	Woahink Lake Outlet.	Siltcoos Lake.....	At lake outlet, 1 mile north of Westlake.	5.30

Umpqua River basin, Oreg.

Aug. 29	Jackson Creek....	South Umpqua River	Mouth, 4 miles northeast of Tiller.....	23.9
29	South Umpqua River.	Umpqua River.....	Below Beal Creek, ½ mile southwest of Days Creek.	76.1
28	Cow Creek.....	....do.....	Former gaging station at Riddle.....	30.8
28	South Umpqua River.	....do.....	Below Cow Creek, 2 miles northeast of Riddle.	119
28	Myrtle Creek.....	South Umpqua River	Below confluence of forks at Myrtle Creek.	9.64
27	Lookingglass Creek.	....do.....	Mouth, at Brockway.....	.08
Dec. 23	Unnamed stream...	....do.....	Road culvert, South Stramer St. at Marsters St., in Roseburg.	a139
Feb. 3	....do.....	....do.....	NE¼SE¼ sec. 3, T. 27 S., R. 6 W., at road crossing, 4 miles northwest of Roseburg.	a98
Sept. 26	Spring River.....	North Umpqua River	At ford below junction of springs, 9 miles north of Diamond Lake.	247
27	Silent Creek.....	Diamond Lake.....	At road crossing, 0.7 mile above mouth, 1 mile south of Diamond Lake.	30.8
27	Short Creek.....	....do.....	Mouth, southeast shore of Diamond Lake...	12.7
Nov. 5	Trap Creek.....	Clearwater River..	Mouth, 8 miles northwest of Diamond Lake.	1.81
Dec. 20	....do.....	....do.....	....do.....	3.33
Jan. 31	....do.....	....do.....	....do.....	2.22
Mar. 26	....do.....	....do.....	....do.....	4.07
May 1	....do.....	....do.....	....do.....	20.6
June 10	....do.....	....do.....	....do.....	14.6
Aug. 2	....do.....	....do.....	....do.....	2.56
Sept. 26	....do.....	....do.....	....do.....	1.88
Aug. 1	North Umpqua River.	Umpqua River.....	Below Toketee Dam, at former gaging station, near Toketee Falls.	54.3
Sept. 27	....do.....	....do.....	....do.....	53.4
Dec. 21	Camas Creek.....	Fish Creek.....	Mouth, in SW¼ sec. 10, T. 27 S., R. 3 E.	11.2
Feb. 1	....do.....	....do.....	....do.....	61.8
Mar. 26	....do.....	....do.....	....do.....	34.6
May 1	....do.....	....do.....	....do.....	37.4
June 10	....do.....	....do.....	....do.....	13.9
July 31	....do.....	....do.....	....do.....	2.38
Sept. 25	....do.....	....do.....	....do.....	.92
23	Steamboat Creek..	North Umpqua River	Mouth, 19 miles northeast of Glide.....	46.0
Aug. 28	Rock Creek.....	....do.....	Mouth, 5 miles northeast of Glide.....	26.1
28	Little River.....	....do.....	Mouth, at Glide.....	35.3
27	Calapooya Creek..	Umpqua River.....	At highway bridge at Oakland.....	12.5
22	Elk Creek.....	....do.....	NW¼ sec. 17, T. 22 S., R. 5 W., ½ mile west of Drain.	3.69
Nov. 29	Bear Creek.....	Billy Creek.....	NE¼ sec. 35, T. 22 S., R. 6 W., 4 miles southeast of Drain.	98.6
29	....do.....	....do.....	....do.....	a238
Jan. 23	....do.....	....do.....	....do.....	39.8
Aug. 22	Elk Creek.....	Umpqua River.....	Mouth, at Elkton.....	5.69
20	Smith River.....	....do.....	Sec. 31, T. 20 S., R. 9 W., below falls, 15 miles northeast of Gardiner.	19.3

a Flow at crest-stage; computed by indirect method.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1951 to September 1952--Continued

Coastal streams between Umpqua River and Rogue River, Oreg.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Aug. 20	Eel Creek.....	Tenmile Creek.....	Mouth, 1 mile west of Lakeside.....	4.58
20	Tenmile Creek....	Pacific Ocean.....	Below Eel Creek, 1 mile west of Lakeside.	6.37
20	South Fork Coos River.	Coos River.....	Near center sec. 27, T. 25 S., R. 11 W., 1½ miles east of Dellwood.	35.6
21	East Fork Millicoma River.	Millicoma River...	Sec. 4, T. 25 S., R. 11 W., 1 mile northeast of Allegany.	17.0
21	Marlow Creek.....	East Fork Millicoma River.	Mouth, at Allegany.....	.22
21	West Fork Millicoma River.	Millicoma River...	Near center sec. 6, T. 25 S., R. 11 W., 1 mile west of Allegany.	5.14
27	Middle Fork Coquille River.	South Fork Coquille River.	Former gaging station near Myrtle Point..	18.8
26	North Fork Coquille River.	....do.....	Former gaging station below East Fork near Myrtle Point.	39.0
Mar. 24	Rink Creek.....	Coquille River....	SW¼NW¼ sec. 4, T. 28 S., R. 12 W., at reservoir dam, 2½ miles east of Coquille.	a17.9
Aug. 26	Floras Creek.....	Pacific Ocean.....	Highway bridge at Langlois.....	4.15
26	Sixes River.....	....do.....	Above Crystal Creek, at Sixes.....	17.6
26	Crystal Creek....	Sixes River.....	Mouth, at Sixes.....	1.10
26	Elk River.....	Pacific Ocean.....	Highway bridge, 2 miles south of Sixes...	47.5
25	Brush Creek.....	....do.....	At former fish hatchery, 6 miles southeast of Port Orford.	10.4
25	Euchre Creek.....	....do.....	Highway bridge, 9 miles north of Wedderburn.	10.0

a Flow at crest-stage; computed by indirect method.

Rogue River basin, Oreg.

July 8	Bybee Creek.....	Rogue River.....	Mouth, 13 miles northeast of Prospect....	103
8	Castle Creek.....	....do.....	....do.....	78.6
Sept. 5	Cool Creek.....	Mill Creek.....	Below county road at Prospect.....	f6.52
May 28	Sheep Creek.....	....do.....	100 yds above main power canal, ½ mile north of Prospect.	f51.7
28	....do.....	....do.....	Crater Lake highway crossing at Prospect.	f63.2
28	....do.....	....do.....	250 ft below Crater Lake highway crossing at Prospect.	f44.2
Oct. 16	Dead Indian Creek	Little Butte Creek	Sec. 15, T. 38 S., R. 3 E., 14 miles northeast of Ashland.	.88
Jan. 11	....do.....	....do.....	....do.....	7.41
Mar. 1	....do.....	....do.....	....do.....	9.48
Apr. 1	....do.....	....do.....	....do.....	37.2
23	....do.....	....do.....	....do.....	54.5
May 29	....do.....	....do.....	....do.....	8.56
Sept.12	....do.....	....do.....	....do.....	.36
Jan. 3	West Fork Williams Creek.	Williams Creek....	Former gaging station, 5½ miles southwest of Williams.	51.0
Dec.26-27	Jones Creek.....	Rogue River.....	SW¼ sec. 15, T. 36 S., R. 5 W., 2 miles east of Grants Pass.	a184
Apr. 3	Shanks Creek.....	Grave Creek.....	SW¼ sec. 7, T. 34 S., R. 5 W., above Burgess Gulch, 1½ miles west of Placer.	2.8
Feb. 7	Burgess Gulch....	Shanks Creek.....	SW¼ sec. 7, T. 34 S., R. 5 W., near mouth 1½ miles west of Placer.	11.3
Apr. 3	....do.....	....do.....	....do.....	3.4
Aug. 27	Rogue River.....	Pacific Ocean.....	Above Illinois River at Agness.....	1,690
27	Illinois River...	Rogue River.....	Mouth, at Agness.....	216

a Flow at crest-stage; computed by indirect method.
f Cool Creek and Sheep Creek are ephemeral springs that flow only for short periods following winters of heavy precipitation. Sheep Creek is reported to have been flowing for a few weeks in 1917, 1938, 1943, 1950, 1951, and 1952, with no known surface flow in other years. All flow sinks into the lava just below the site of the lowest measurement on May 28.

Coastal streams south of Rogue River, Oreg.

Aug. 25	Pistol River.....	Pacific Ocean.....	Above head of tide, 10 miles south of Gold Beach.	13.1
25	Chetco River.....	....do.....	Above Jack Creek, below North Fork, 3 miles northeast of Harbor.	91.6
25	Winchuck River...	....do.....	½ mile above South Fork, 5 miles southeast of Harbor.	13.7

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