Surface Water Supply of the United States 1955

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

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1398

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

Surface Water Supply of the United States 1955

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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Thomas B. Nolan, *Director*

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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 collected and computed under supervision of district engineers, Surface Water Branch, as follows:

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

CALENDAR FOR WATER YEAR 1955

OCTOBER 1954

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MAY 1955

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JUNE 1955

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JULY 1955

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AUGUST 1955

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SEPTEMBER 1955

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SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN OREGON AND LOWER COLUMBIA RIVER BASIN, 1955

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, 1955. 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 13,250 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1955, the Geological Survey and cooperating organizations were maintaining 6,860 gaging stations, including those in Alaska and Hawaii. Discharge measurements only were made at many other points in the 1955 water year, most of which are published at the end of each report. The name of each stream measured at points other than gaging stations is not listed in the index to this report. Only the major river basins in which measurements were made are listed under the item "Discharge measurements" in the index.

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 and L. A. Stanley, State engineers, and B. R. Chandler, chairman, Oregon State Highway Commission; Fish Commission of Oregon, M. T. Hoy, State Fisheries Director; and the cities of Eugene, McMinnville, Portland, and Coos Bay-North Bend.

Washington: State Department of Conservation and Development, W. A. Galbraith, director, and M. G. Walker, supervisor of the Division of Water Resources; State Department of Fisheries, R. J. Schoettler, director; 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 43 gaging stations in Oregon and 9 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 work was done by the Water Resources Division of the Geological Survey, under the direction of personnel shown in the preface. The data for stations in

the several States were collected and prepared for publication in the district offices listed below.

State	District office	Address
Oregon a/	Portland	1001 NE. Lloyd Boulevard.
Washington	Tacoma	207 Federal Building.

a/ The work was done in collaboration with C. E. Stricklin and L. A. Stanley, State engineers.

Information of a more detailed nature than that published for most of the gaging stations given in this report is 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.

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

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.

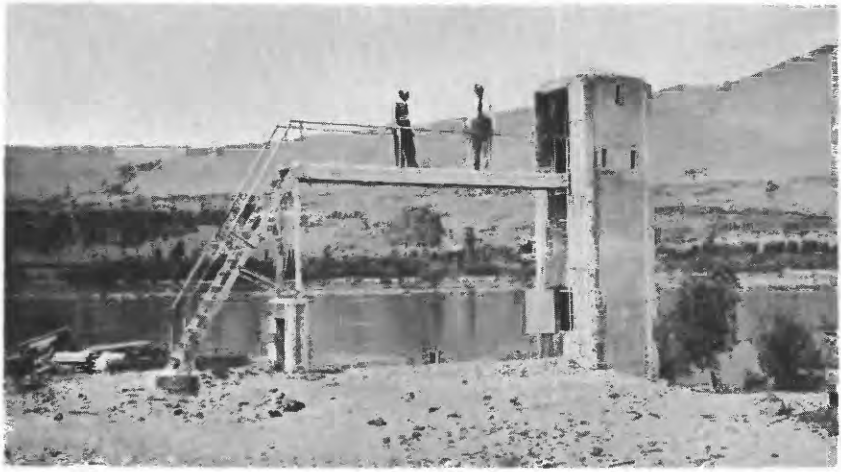
The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermosttributary 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 determinations of peak discharge (such as slope-area or contracted-opening determinations, 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 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.



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

B, WILLAMETTE RIVER AT ALBANY, OREG.

FIGURE 1.—GAGING-STATION STRUCTURES.

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. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1955 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, 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 "Records available" are given the periods for which there are published records generally equivalent to those at present site. 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, locations, and datums of previous gages used during the period of records available. 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). In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and 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 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. Skeleton rating tables are generally not published for stations on canals.

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 figures for the maximum day and the minimum day for each month are underlined. If the figure 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" give the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff 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"). Figures 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 figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage.

Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights 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, figures 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)

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.
WSP 11.....	Gage heights.....	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1895-96.
WSP 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
WSP 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1897.
WSP 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.

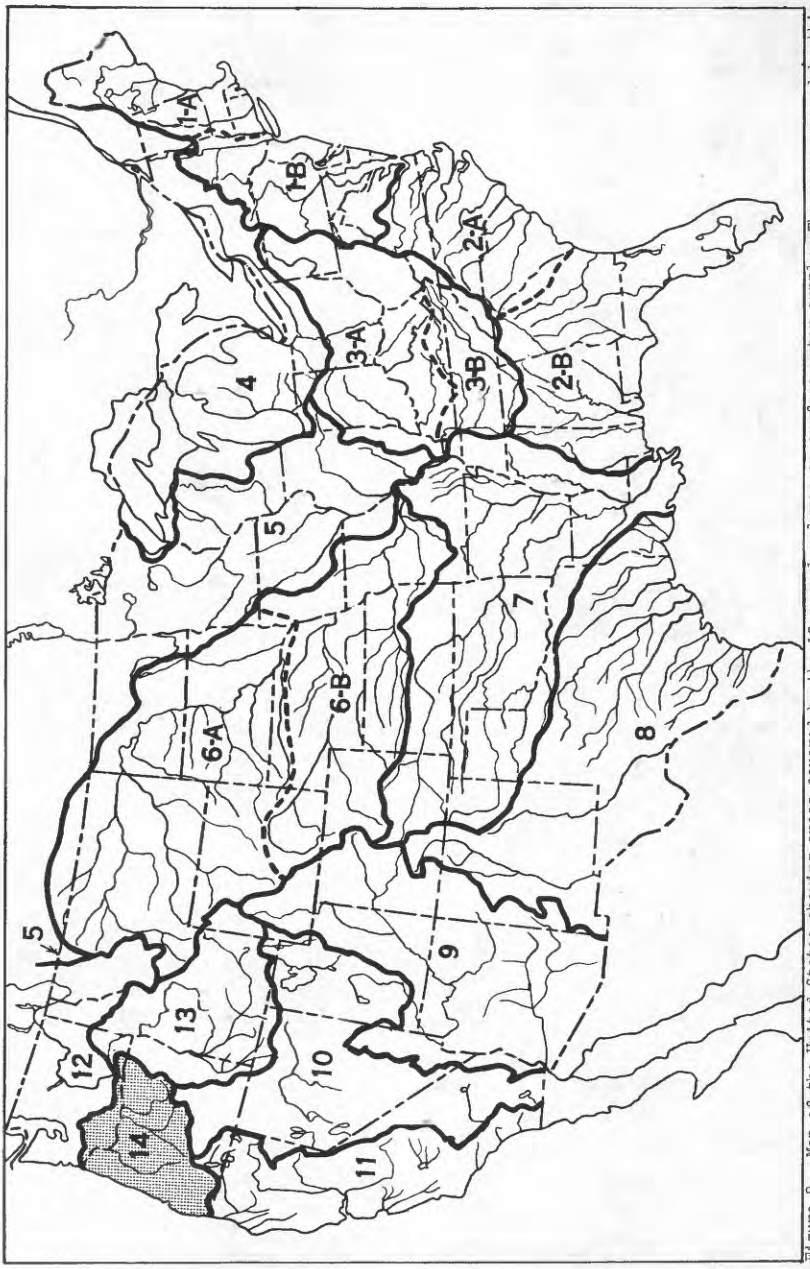


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

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

(A = Annual Reports; B = Bulletin)

Report	Character of data	Year
WSP 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.
WSP 35 to 39.	Descriptions, measurements, gage heights, and ratings.....	1899.
21st A, pt. 4	Monthly discharge.....	1899.
WSP 47 to 52.	Descriptions, measurements, gage heights, and ratings.....	1900.
22d A, pt. 4.	Monthly discharge.....	1900.
WSP 65, 66...	Descriptions, measurements, gage heights, and ratings.....	1901.
WSP 75.....	Monthly discharge.....	1901.

Note.--Records for all stations in Oregon are contained in WSP 370, superseding all reports in this table for these stations.

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, 1899-1955

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1899	38	1911	312	1923	574	1934	769	1945	1044
1900	51	1912	332-C	1924	594	1935	794	1946	1064
1901	66, 75	1913	362-C	1925	614	1936	814	1947	1094
1902	85	1914	394	1926	634	1937	834	1948	1124
1903	100	1915	414	1927	654	1938	864	1949	1154
1904	135	1916	444	1928	674	1939	884	1950	1184
1905	a177,178	1917	464	1929	694	1940	904	1951	1218
1906	214	1918	484	1930	709	1941	934	1952	1248
1907-8	252	1919-20	514	1931	724	1942	964	1953	1288
1909	272	1921	534	1932	739	1943	984	1954	1348
1910	292	1922	554	1933	754	1944	1014	1955	1398

a Rogue, Umpqua, and Siletz Rivers only.
Note.--Records for all stations in Oregon through September 1910 are contained in WSP 370, superseding all earlier reports for these stations.

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published 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 report. 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

WSP	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 previously 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...	1878-1953	Bull. 6, 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:

Report

WSP 96: Destructive floods in the United States in 1903.
WSP 771: Floods in the United States, magnitude and frequency.
WSP 1080: Floods of May-June 1948 in Columbia River basin.
WSP 1137-E: Floods of 1950 in Southwestern Oregon and Northwestern California.
WSP 1137-I: Summary of floods in the United States during 1950.
Cir. 191: Floods in western Washington, frequency and magnitude in relation to drainage-area characteristics.

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 1952 to September 1955 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
Big Butte Creek, North Fork.	SW¼ sec. 2, T. 35 S., R. 2 E., 1 mile north of Butte Falls, Oreg.	1928-55	Oregon State engineer.
Big Butte Springs.....	Sec. 20 or 21, T. 35 S., R. 3 E., 4 miles east of Butte Falls, Oreg.	1930-55	Do.
Big Marsh Creek.....	SW¼ sec. 20, T. 24 S., R. 7 E., at Hoey Ranch, near Crescent, Oreg.	1924, 1928-55*	Do.
Deschutes River.....	SW¼ sec. 23, T. 21 S., R. 9 E., ½ mile upstream from bridge at Pringle Falls and 7 miles northwest of Lapine, Oreg.	1915-17 1922-55*	Do.
Calapooya River.....	NW¼SW¼ sec. 27, T. 13 S., R. 3 W., 300 ft below diversion to Sodom ditch and 3½ miles northeast of Halsey, Oreg.	1954-55	Do.
Do.....	SE¼ sec. 17, T. 13 S., R. 3 W., 2.2 miles southeast of Shed, Oreg.	1954-55	Do.
Do.....	NW¼NE¼ sec. 8, T. 13 S., R. 3 W., 1.5 miles east of Shed, Oreg.	1954-55	Do.
Fish Lake Dam, tunnel at.	SE¼SE¼ sec. 4, T. 37 S., R. 4 E., 14 miles east of Lake Creek, Oreg.	1929-55	Do.
Fivemile Creek.....	SW¼ sec. 27, T. 4 S., R. 29 E., 12 miles northwest of Ukiah, Oreg.	1928-30, 1932-33, 1935-44, 1946-47, 1949-55	Do.
Fourbit Creek.....	SE¼SE¼ sec. 22, T. 35 S., R. 3 E., 7 miles southeast of Butte Falls, Oreg.	1949-55	Do.
Grave Creek.....	NW¼SW¼ sec. 7, T. 34 S., R. 5 W., 1½ miles west of Placer, Oreg.	1929-30, 1932-55*	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
Jumpoff Joe Creek.....	SW¼ sec. 32, T. 34 S., R. 5 W., 7 miles northeast of Merlin, Oreg.	1929-55*	Oregon State engineer.
Little Butte Creek....	SE¼ sec. 19, T. 36 S., R. 2 E., at Lake Creek, Oreg.	1922-24, 1927-47, 1949-55	Do.
Little Butte Creek, North Fork.	SE¼NE¼ sec. 20, T. 36 S., R. 2 E., above Rogue River Valley Canal intake, near Lake Creek, Oreg.	1932-55*	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.	1932-55*	Do.
Little Walla Walla River.	NE¼NW¼ sec. 12, T. 5 N., R. 35 E., near George St., in Milton, Oreg.	1932-55	Do.
Lookout Creek tributary.	NE¼ sec. 31, T. 15 S., R. 5 E., 600 ft above mouth and 6.8 miles northeast of town of Blue River.	1952-55	U. S. Forest Service
Do.....	SE¼ sec. 31, T. 15 S., R. 5 E., 0.5 mile above mouth and 6.5 miles northeast of town of Blue River.	1952-55	Do.
Do.....	NW¼ sec. 6, T. 16 S., R. 5 E., 0.3 mile above mouth and 6 miles northeast of town of Blue River.	1952-55	Do.
Ochoco Creek.....	NE¼ sec. 6, T. 15 S., R. 17 E., below Ochoco Reservoir, 6 miles east of Prineville, Oreg.	1919-55	Oregon State engineer.
Ochoco Reservoir.....	NW¼ sec. 5, T. 15 S., R. 17 E., 6 miles east of Prineville, Oreg.	1918-55	Do.
Rancheria Creek.....	NE¼ sec. 20, T. 35 S., R. 3 E., 4 miles east of Butte Falls, Oreg.	1935-50 1951-55	Do.
Willow Creek.....	Sec. 34, T. 35 S., R. 3 E., 6 miles southeast of Butte Falls, Oreg.	1949-55	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 page 11, "State reports containing compilations of records of discharge.") The other records listed in this table have not been published.

The water year 1955 was characterized by low flows over most of the area covered by this report in Oregon, both with regard to volume of flow for the year and the magnitude and number of peak flows that occurred. In western Oregon there was, in general, only one peak of any magnitude for the year and that occurred on December 30, 31. Most stations in the Rogue River basin had no flows above the base for peaks. Western Oregon was slightly below median runoff for the year while eastern Oregon was well below median. The area covered by this report in Washington ranged from median to slightly above median. Runoff ranged from well below median to deficient over most of the area during December, January, and February. Runoff remained deficient in the eastern part during March and April. John Day River had the lowest February runoff since 1937 and for the Grande Ronde River near La Grange, Oreg., it was the lowest February runoff in 45 years of record. Runoff ranged from slightly above median to excessiver over most of the area during May to September. For the two key gaging stations in the area covered by this report, a comparison of the monthly discharge during the 1955 water year with the median discharge for the 25-year period 1921-45 is shown below.

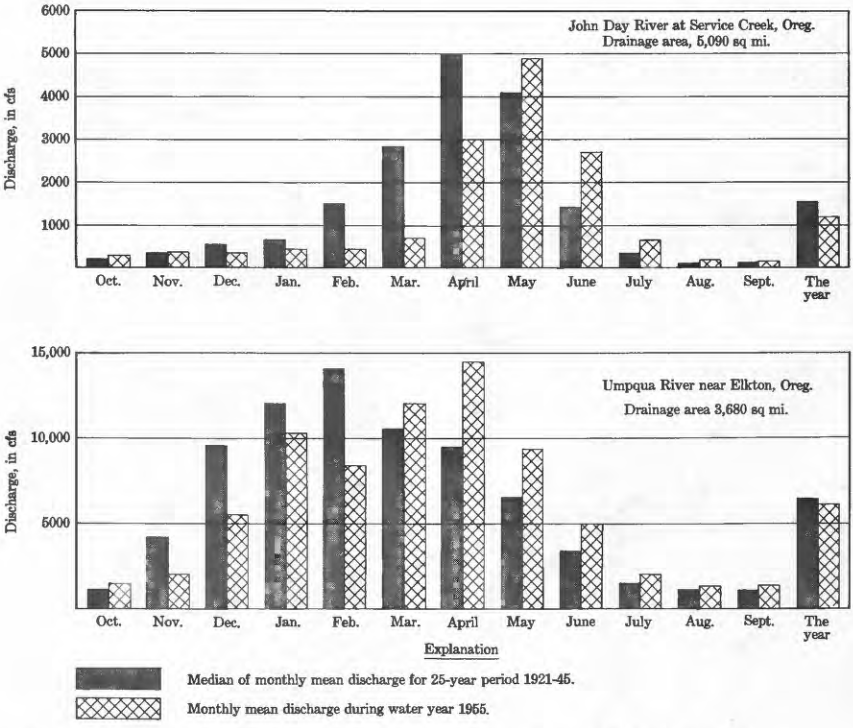

Figure 3. Comparison of discharge at two key gaging stations during 1955 water year with median discharge for 25-year period.

LOWER COLUMBIA RIVER BASIN

WALLA WALLA RIVER BASIN

South Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°50', long 118°10', in NE¼NE¼ sec. 15, T. 4 N., R. 37 E., on right bank 1 mile upstream from Pacific Power & Light Co.'s penstock intake, 1 mile downstream from Elbow Creek, and 13 miles southeast of Milton.

Drainage area.--63 sq mi, approximately. At site used 1906-17, 1931-34, 64 sq mi, approximately (revised).

Records available.--February to October 1903 (gage heights only), August 1906 to November 1917 (incomplete), May 1931 to September 1955. February to October 1903, published as "12 miles above Milton" and 1907-10 published as "above Pacific Power & Light Co.'s intake, near Milton."

Gage.--Water-stage recorder. Altitude of gage is 2,050 ft (from river-profile map). Prior to Mar. 23, 1934, water-stage recorder or staff gages at several sites within 1½ miles of present site at various datums.

Average discharge.--31 years (1908-15, 1931-55), 174 cfs (126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 598 cfs May 20 (gage height, 2.68 ft); minimum, 96 cfs Sept. 5 (gage height, 1.45 ft).

1906-17, 1931-55: 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 regulation or diversion above station.

Revisions.--WSP 964: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1912, 1940, superseding those published in WSP 332 and 904, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1912		1912-Con.		1940-Con.		1940-Con.		1940-Con.	
Mar. 12	170	Mar. 20	160	Aug. 6	88	Aug. 14	86	Aug. 23	86
13	190			7	89	15	86	24	86
14	190	1940		8	89	16	86	25	86
15	200	Aug. 1	90	9	89	17	86	26	86
16	200	2	90	10	88	18	86	27	86
17	200	3	90	11	86	19	86	28	85
18	190	4	89	12	86	20	86	29	85
19	170	5	88	13	86	21	86	30	85
						22	86	31	85

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
March 1912.....	-	286	147	180	2.81	3.24	11,100
Water year 1911-12....	-	630	91	184	2.88	39.07	133,000
Calendar year 1912....	-	630	91	189	2.95	40.11	137,000
August 1940.....	2,692	90	85	86.8	1.38	1.59	5,340
Water year 1939-40....	54,405	652	80	149	2.37	32.12	107,900
Calendar year 1940....	56,466	652	80	154	2.44	33.33	112,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	113	113	133	131	120	226	248	253	178	115	100
2	115	113	113	133	128	117	226	233	270	165	113	98
3	117	113	113	124	*124	113	195	240	297	154	110	98
4	117	113	113	122	124	113	177	240	321	149	108	98
5	117	113	113	120	124	111	168	316	345	146	106	97
6	115	113	115	117	122	111	195	368	365	157	105	97
7	115	115	*115	117	151	117	255	368	390	163	105	98
8	115	113	113	115	244	143	304	380	390	144	105	100
9	115	115	113	115	233	174	324	360	410	141	105	100
10	115	120	113	113	180	168	368	360	420	144	105	100
11	115	115	113	111	157	162	289	400	420	*139	105	100
12	120	122	113	111	146	157	*251	415	395	137	105	*100
13	120	120	115	113	140	146	258	356	365	130	106	100
14	115	117	113	113	135	140	244	308	311	128	106	112
15	113	122	113	113	135	133	223	285	274	128	108	105
16	113	124	111	115	138	133	212	277	249	128	108	112
17	115	133	111	115	140	131	202	273	229	124	108	106
18	111	140	111	*113	135	133	199	296	217	124	108	103
19	113	133	111	113	131	135	189	390	213	*124	108	103
20	113	124	111	115	128	131	183	502	210	124	108	103
21	115	122	111	113	126	131	202	496	217	120	106	105
22	124	120	111	113	126	131	266	425	221	120	106	103
23	115	*120	111	120	126	131	255	370	213	120	106	103
24	113	117	111	133	126	131	237	321	195	120	106	102
25	113	120	111	140	*122	126	219	306	188	120	105	100
26	113	117	111	138	120	124	216	311	185	120	105	100
27	113	117	110	135	120	128	192	279	178	122	103	100
28	113	117	110	133	120	154	186	279	182	122	103	106
29	113	115	111	133	-	226	186	316	182	120	103	102
30	113	113	124	131	------	219	216	325	171	118	103	*102
31	113	-----	136	133	------	192	-----	*274	------	117	102	------
Total	3,562	3,569	3,515	3,763	3,932	4,381	6,863	10,317	8,276	4,146	3,295	3,053
Mean	115	119	113	121	140	141	229	333	276	134	106	102
Cfsm	1.83	1.89	1.79	1.92	2.22	2.24	3.63	5.29	4.38	2.13	1.68	1.62
In.	2.10	2.11	2.07	2.22	2.32	2.59	4.05	6.09	4.89	2.45	1.95	1.80
Ac-ft	7,070	7,080	6,970	7,460	7,800	8,690	13,610	20,460	16,420	8,220	6,540	6,060

Calendar year 1954: Max 482 Min 110 Mean 170 Cfsm 2.70 In. 36.65 Ac-ft 123,100
Water year 1954-55: Max 502 Min 97 Mean 161 Cfsm 2.56 In. 34.64 Ac-ft 116,400

Peak discharge (base, 600 cfs).--No peak above base.
* Discharge measurement made on this day.

North Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°54', long 118°17' (revised), 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.--42 sq mi, approximately (revised). At site used prior to Oct. 23, 1948, 43 sq mi, approximately (revised).

Records available.--October 1940 to September 1955 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. 23, 1948, at several sites 0.7 mile downstream at various datums.

Average discharge.--25 years (1930-55), 48.2 cfs (34,900 acre-ft per year).

Extremes.--Maximum discharge during year, 236 cfs May 21 (gage height, 4.08 ft.); minimum, 0.9 cfs Aug. 17.
1929-55: 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 220 cfs; minimum, that of Aug. 17, 1955.

Remarks.--Records good. Diversions above station for irrigation of about 150 acres, of which 20 acres is below station. No regulation.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1942 and 1947, superseding those published in WSP 964 and 1094, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1941		1941-Con.		1946-Con.		1947-Con.		1947-Con.	
Oct. 1	7.4	Oct. 22	13	Dec. 29	159	Jan. 13	50	Mar. 17	105
2	7.8	24	12	30	78	14	41	18	105
3	8.3	25	12	31	93	15	29	19	100
4	31	26	12			16	25	20	93
5	35	29	25	1947		17	24	21	87
6	35	30	23	Jan. 1	96	18	22	22	127
7	32	31	23	2	65	19	23	23	152
8	30			3	40	20	23	24	131
9	29	1946		4	30	21	37	25	111
10	24	Dec. 21	110	5	17	22	96	26	100
11	21	22	89	6	19	Mar. 10	165	27	87
12	21	23	76	7	20	11	179	28	78
13	20	24	64	8	20	12	131	29	73
14	17	25	53	9	17	13	100	30	71
15	16	26	126	10	28	14	89	31	82
16	15	27	294	11	41	15	94		
21	15	28	214	12	50	16	100		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1941	582.5	35	7.4	18.8	1,160
Calendar year 1941	11,674.2	292	2.6	32.0	23,170
Water year 1941-42	16,426.3	308	2.0	45.0	32,580
December 1946	6,044	1,250	36	195	11,990
Calendar year 1946	25,437.4	1,250	1.6	69.7	50,460
January 1947	3,480	697	17	112	6,900
March	2,847	179	.41	91.8	5,650
Water year 1946-47	23,500.7	1,250	2.1	64.4	46,620
Calendar year 1947	21,529.9	697	2.1	59.0	42,710

North Fork Walla Walla River near Milton, Oreg.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 21				May 22 to Sept. 30			
2.3	5.6	3.5	121	2.4	1.0	3.3	74
2.5	13	4.0	227	2.5	3.9	3.6	130
3.0	50			2.7	13	3.9	200
				3.0	36		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	8.7	12	33	26	18	56	91	88	18	4.7	1.0
2	7.6	9.0	12	30	27	18	65	91	81	21	4.7	1.9
3	7.0	9.0	12	24	*26	17	57	90	84	19	4.3	2.4
4	7.6	9.0	12	21	24	16	48	90	91	16	3.9	3.6
5	8.0	9.0	11	20	23	15	42	*111	102	16	3.3	2.7
6	8.0	9.0	12	18	22	16	45	144	106	17	4.7	1.6
7	7.3	9.0	*12	17	25	17	66	144	112	23	5.1	1.3
8	7.3	9.0	12	16	59	30	93	160	108	19	3.6	1.3
9	7.3	9.4	11	16	80	48	102	144	108	16	2.4	2.4
10	7.3	10	11	15	58	44	162	140	108	16	1.9	2.7
11	7.3	10	11	15	46	42	123	162	102	*15	2.7	3.6
12	8.3	16	10	14	39	38	*98	154	93	13	3.6	*3.6
13	9.4	16	10	14	35	34	94	121	76	12	3.3	1.9
14	9.0	12	10	13	31	30	94	99	64	9.0	3.6	2.2
15	8.3	12	11	13	29	26	90	95	55	5.5	4.3	3.3
16	8.0	13	11	13	30	25	82	90	46	5.5	1.9	5.1
17	7.6	17	11	13	30	25	77	90	37	6.4	1.3	6.4
18	7.6	25	10	*12	28	27	74	96	34	6.4	1.9	6.0
19	8.0	23	10	12	25	29	70	121	30	*6.4	3.0	5.1
20	8.3	18	10	12	24	26	65	175	27	6.8	3.6	4.3
21	9.7	16	10	12	22	26	66	216	25	6.8	4.3	5.1
22	17	16	10	12	21	26	91	190	23	5.5	2.7	5.1
23	14	*15	10	13	20	25	98	178	23	5.1	1.9	5.5
24	12	15	11	23	19	24	94	134	*23	6.0	1.6	6.0
25	11	14	11	36	*19	22	88	110	20	5.1	3.0	5.5
26	10	15	10	36	19	20	82	106	19	5.1	3.9	6.0
27	9.7	14	10	32	18	21	75	99	16	6.4	3.3	6.0
28	9.4	14	10	29	18	25	69	97	17	7.6	3.9	6.8
29	9.0	14	10	26	-	42	69	102	19	7.2	3.0	6.8
30	8.7	13	17	24	- -	53	77	110	17	6.8	1.6	6.8
31	8.7	- - -	29	24	- - -	46	-----	*102	- - - -	5.5	1.3	- - - -
Total	276.0	399.1	359	608	843	871	2,412	3,852	1,754	334.1	98.3	122.0
Mean	8.90	13.3	11.6	19.6	30.1	28.1	80.4	124	58.5	10.8	3.17	4.07
Ac-ft	547	792	712	1,210	1,670	1,730	4,780	7,640	3,480	663	195	242

Calendar year 1954: Max 302 Min 2.7 Mean 39.9 Ac-ft 28,900
Water year 1954-55: Max 216 Min 1.0 Mean 32.7 Ac-ft 23,660

10.57

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

Mill Creek near Walla Walla, Wash.

Location.--Lat 46°00'30", long 118°07'00", 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.--60 sq mi, approximately.
Records available.--August 1913 to September 1917, April to September 1938, October 1939 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 2,000 ft above mean sea level, unadjusted. Prior to Oct. 1, 1938, staff gages at about same site at different datums.
Average discharge.--20 years (1913-17, 1939-55), 97.5 cfs (70,590 acre-ft per year).
Extremes.--Maximum discharge during year, 410 cfs Apr. 10 (gage height, 15.90 ft); minimum, 27 cfs part of each day Aug. 19-24 (gage height, 14.62 ft).
1913-17, 1938, 1939-55: Maximum discharge, 2,610 cfs (revised) Dec. 28, 1945 (gage height, 17.85 ft), from rating curve extended above 620 cfs by logarithmic plotting; minimum observed, 16 cfs Oct. 11-15, 1939.
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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
1064	1946	Dec. 28, 1945	2,610	17.85
1094	1947	Dec. 12, 1946	1,440	16.90
1124	1948	Feb. 26, 1948	1,680	17.15
1184	1950	Feb. 24, 1950	1,680	17.10

Remarks.--Records good. City of Walla Walla diverts about 22 cfs 4 miles above station for municipal use. No regulation.
Revisions.--WSP 1288: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

14.6	25	15.3	157
14.8	47	15.6	266
15.0	80	15.9	410

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	39	40	125	71	50	201	151	120	53	33	28
2	37	37	40	100	71	46	215	145	115	48	32	28
3	36	36	40	78	69	45	164	148	120	45	31	28
4	36	36	40	67	64	42	134	145	128	45	30	28
5	36	36	39	62	62	41	118	183	137	43	30	28
6	36	35	41	54	58	42	123	238	140	45	30	29
7	35	35	40	53	73	48	174	226	145	45	30	28
8	35	35	39	52	140	76	230	238	134	43	30	29
9	*36	37	39	50	142	*112	275	201	134	42	30	29
10	36	41	39	48	112	112	380	197	131	43	30	28
11	37	39	37	46	91	112	250	234	128	42	30	28
12	39	43	40	45	80	100	197	246	118	*40	30	28
13	39	42	42	45	71	87	*212	190	105	37	30	28
14	37	42	41	42	66	80	197	157	93	36	29	36
15	37	43	42	42	66	71	167	142	80	36	29	32
16	37	54	41	43	67	67	148	140	73	35	29	37
17	37	67	41	42	69	67	134	137	66	35	29	39
18	37	54	40	41	66	75	123	145	62	35	28	32
19	41	*48	39	41	60	76	115	190	59	35	29	31
20	40	46	39	41	58	73	112	279	59	35	28	30
21	42	*45	39	40	56	71	123	258	58	34	28	31
22	53	43	40	40	54	73	197	212	56	35	28	30
23	42	42	40	43	53	73	190	180	56	39	28	29
24	41	41	40	56	52	69	170	151	54	35	28	29
25	40	45	41	80	50	66	148	137	53	34	*28	29
26	40	43	40	76	50	60	142	*134	52	34	28	29
27	39	43	37	73	48	66	120	123	50	37	29	28
28	39	43	39	*69	48	89	112	123	52	36	29	34
29	39	42	*42	67	-	174	115	137	48	35	29	*31
30	39	40	93	64	- - - -	180	125	151	52	34	28	29
31	39	- -	154	64	- - -	154	- - - - -	134	- - - - - -	34	28	- - -
Total	1,194	1,272	1,404	1,789	1,967	2,497	5,111	5,472	2,678	1,205	908	903
Mean	38.5	42.4	45.3	57.7	70.2	80.5	170	177	89.3	38.9	29.3	30.1
Ac-ft	2,370	2,520	2,780	3,550	3,900	4,950	10,140	10,850	5,310	2,390	1,800	1,790

Calendar year 1954: Max 452 Min 34 Mean 82.3 Ac-ft 59,590
Water year 1954-55: Max 380 Min 28 Mean 72.3 Ac-ft 52,350

Peak discharge (base, 700 cfs).--No peak above base.
* Discharge measurement made on this day.

Blue Creek near Walla Walla, Wash.

Location.--Lat 46°03'30", long 118°08'10", in SW¼NW¼ 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 1955.

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.--16 years, 15.3 cfs (11,080 acre-ft per year).

Extremes.--Maximum discharge during year, 64 cfs Apr. 22 (gage height, 41.28 ft); minimum, 0.5 cfs part of each day Aug. 29 to Sept. 2 (gage height, 40.28 ft).
1939-55: Maximum discharge, 725 cfs Dec. 28, 1945 (gage height, 43.35 ft, present datum), from rating curve extended above 400 cfs; minimum observed, 0.1 cfs Oct. 14, 1939, but may have been less during periods of no gage-height record Oct. 1-11, 15, 1939.

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

Revisions (water years).--WSP 984: 1942. WSP 1348: 1941, 1942(M), 1945.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

40.3	0.6	40.8	16
40.4	1.6	41.0	31
40.5	3.5	41.3	67
40.6	6.4		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	1.9	3.2	25	15	4.2	23	36	5.4	3.0	0.9	0.6
2	1.1	1.9	3.0	17.5	14	4.2	26	33	5.1	2.4	.9	.6
3	1.0	1.9	3.0	12.5	13	4.0	29	31	4.8	2.1	.8	.6
4	1.0	1.9	2.6	b10	11.5	b4.0	d29	29	4.2	2.1	.8	.6
5	1.1	1.9	2.6	7.5	11	b5.0	d29	34	4.0	1.9	.8	.6
6	1.1	1.9	2.6	6.8	9.6	b5.0	d29	38	3.8	2.1	.7	.6
7	1.0	2.1	2.6	6.0	13.5	6.0	29	36	3.5	2.2	.7	.6
8	1.0	2.1	2.6	5.4	28	13	34	34	3.0	2.1	.7	.7
9	*.9	2.1	2.8	b5.0	26	*18	39	29	3.0	1.9	.7	.7
10	.9	2.1	2.8	4.8	b20	17.5	45	27	2.8	2.1	.7	.7
11	1.0	2.1	2.8	4.2	15.5	17.5	49	29	2.6	1.6	.7	.7
12	1.1	2.1	2.6	d4.1	12	16.5	49	27	2.6	*1.4	.7	.7
13	1.2	2.2	2.6	d3.9	10	15	*51	23	2.4	1.2	.7	.7
14	1.2	2.4	2.4	d3.8	8.3	13.5	52	19	2.2	1.2	.7	1.8
15	1.2	2.4	2.6	d3.8	7.5	12.5	46	19.5	2.2	1.2	.7	1.4
16	1.1	2.6	2.6	d3.9	7.5	12	42	25	2.2	1.2	.7	1.6
17	1.2	d3.4	2.6	4.0	7.5	12	39	25	2.1	1.2	.7	1.8
18	1.4	d3.8	2.6	3.8	b7.0	12.5	36	24	1.9	1.2	.7	1.5
19	1.5	*d3.3	2.8	4.0	b6.5	13	32	24	1.9	1.2	.7	1.2
20	1.6	d3.0	2.8	3.8	b6.0	13	29	24	1.9	1.1	.7	1.1
21	1.8	d2.8	2.8	4.8	5.7	13.5	30	20	1.8	1.0	.7	1.2
22	2.6	d2.7	2.8	3.5	5.4	13.5	54	16.5	1.8	1.0	.7	1.4
23	1.8	d2.8	2.8	5.1	4.8	13.5	57	14	1.8	1.2	.7	1.2
24	1.5	d3.0	2.6	10	4.8	13.5	52	11.5	1.8	1.0	.7	1.1
25	1.8	d3.5	2.6	21	4.5	13.5	45	8.7	1.8	.9	*.7	1.2
26	1.6	d3.3	2.6	21	4.5	11.5	43	*8.7	1.8	1.0	.7	1.1
27	1.6	d3.1	b2.4	19.5	b4.3	11	37	8.2	1.8	1.5	.6	1.1
28	1.8	d3.0	2.6	*16	4.2	12	32	7.1	1.9	1.2	.6	1.8
29	1.8	d3.2	*3.8	13.5	-	13	31	6.4	1.9	1.1	.6	*1.4
30	1.8	d3.3	12.5	11.5	------	16	32	6.4	2.4	1.1	.6	1.1
31	1.9	-----	30	12	-----	19.5	-----	6.0	------	1.0	.6	------
Total	42.7	77.8	121.7	277.7	287.6	368.9	1,150	680.1	80.4	46.4	21.9	31.4
Mean	1.38	2.59	3.93	8.96	10.3	11.9	38.3	21.9	2.68	1.50	0.71	1.05
Cfsm	0.081	0.152	0.231	0.527	0.606	0.700	2.25	1.29	0.158	0.088	0.042	0.062
In.	0.09	0.17	0.27	0.61	0.63	0.81	2.52	1.49	0.18	0.10	0.05	0.07
Ac-ft	85	154	241	551	570	732	2,280	1,350	159	92	43	62

Calendar year 1954: Max 132 Min 0.7 Mean 10.2 Cfsm 0.600 In. 8.13 Ac-ft 7,380
Water year 1954-55: Max 57 Min 0.6 Mean 8.73 Cfsm 0.514 In. 6.99 Ac-ft 6,320

Peak discharge (base, 200 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge estimated on basis of weather records, and records for nearby stations.

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.--96 sq mi, approximately.

Records available.--April 1941 to September 1955.

Gage.--Water-stage recorder with artificial control. Altitude of gage is 1,120 ft (from topographic map). Prior to June 11, 1941, staff gage, and June 11, 1941, to Nov. 6, 1947, water-stage recorder, at approximately same site at different datum.

Extremes.--Maximum discharge during year, 456 cfs Apr. 10 (gage height, 3.49 ft); no flow Nov. 2 and for part of each day Oct. 15, 18-20, Oct. 29 to Nov. 1, Nov. 3.
1941-55: Maximum discharge, 2,760 cfs Dec. 28, 1945; maximum gage height, 5.04 ft Jan. 22, 1950, from high-water mark on outside gage; no flow Nov. 2, and for part of each day Oct. 15, 18-20, Oct. 29 to Nov. 3, 1954.

Remarks.--Records good except those for periods of ice effect and those below 10 cfs, 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. Water is diverted 2 miles upstream into Mill Creek Reservoir for flood control with release of stored waters after flood into Russell Creek, and is also diverted as required to replenish losses from seepage and evaporation from small recreation pool maintained in the reservoir. City of Walla Walla diverts water for municipal supply several miles upstream. Other small diversions above station for irrigation.

Revisions (water years).--WSP 1288: Drainage area. WSP 1348: 1943, 1945-46.

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.79	0	2.6	69
1.9	1.6	2.8	128
2.0	4.0	3.1	240
2.2	13	3.5	450
2.4	32		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	0.8	9.7	152	17	5.6	215	142	67	8.2	2.0	3.7
2	3.4	0	8.2	118	15.5	4.9	276	135	42	8.7	1.8	3.4
3	2.9	1.6	9.2	69	13	6.6	220	135	32	9.2	2.6	4.0
4	2.9	.8	7.8	40	11.5	b5.0	166	125	32	9.7	1.8	4.3
5	2.2	1.0	7.4	30	10	b4.5	122	152	37	9.2	1.6	4.6
6	2.2	1.0	7.8	26	11	15.5	102	240	38	9.2	2.0	4.3
7	2.0	1.3	8.7	25	11.5	14.5	138	236	38	9.7	2.6	4.3
8	1.8	1.2	7.0	24	48	24	215	228	40	9.2	2.0	4.6
9	*1.6	1.3	6.3	23	109	48	276	192	45	7.4	2.4	4.6
10	2.2	1.3	5.2	23	80	*58	402	135	45	8.2	2.2	4.0
11	2.2	1.2	5.2	21	61	63	272	148	42	9.2	2.4	4.3
12	2.4	1.6	4.9	18.5	46	54	169	207	38	*7.8	2.4	3.4
13	2.4	1.6	4.9	14.5	42	48	*184	211	34	7.8	1.8	3.2
14	2.6	1.6	4.3	14	34	46	203	180	31	7.0	2.6	6.3
15	1.9	1.8	4.3	14	32	42	195	166	30	5.9	2.0	5.9
16	3.2	2.4	5.2	14.5	32	42	180	162	28	6.3	2.2	4.9
17	2.6	20	4.6	11.5	34	40	162	145	23	6.6	1.3	2.9
18	1.3	*31	4.6	5.9	31	43	159	145	22	6.6	1.6	2.4
19	1.7	19.5	4.6	5.8	29	42	145	180	21	6.6	1.6	2.2
20	1.4	18	4.6	5.6	28	40	131	249	18	5.9	1.3	1.8
21	1.8	18	4.3	5.2	26	40	125	249	8.7	4.6	2.2	1.8
22	2.4	12	4.3	5.6	25	42	211	203	5.9	2.6	2.4	1.8
23	2.6	7.8	4.0	7.4	19.5	42	236	162	5.9	3.7	1.6	1.6
24	2.6	7.4	4.0	9.7	17	40	215	145	7.0	4.0	2.0	1.3
25	2.4	8.7	4.0	21	17	37	145	109	9.2	3.7	*2.2	1.8
26	2.2	11	4.0	22	16	35	122	*102	7.8	2.9	3.2	2.6
27	2.2	7.0	3.7	18.5	16	37	80	96	7.4	4.0	3.2	2.2
28	1.8	9.7	4.0	*15.5	8.7	43	65	91	8.7	3.4	4.3	3.2
29	1.0	8.2	*4.6	13	-	88	102	96	9.2	3.2	4.3	*4.3
30	2.4	8.2	45	11	------	177	125	112	7.8	3.2	3.2	3.2
31	2.4	------	192	11	------	184	------	91	------	3.2	3.7	------
Total	71.0	207.0	398.4	795.0	840.7	1,411.6	5,358	4,969	780.6	196.9	72.5	102.9
Mean	2.29	6.90	12.9	25.8	30.0	45.5	179	160	26.0	6.35	2.34	3.43
Ac-ft	141	411	790	1,580	1,670	2,800	10,630	9,860	1,550	391	144	204

Calendar year 1954: Max 504 Min 0 Mean 53.9 Ac-ft 39,010
Water year 1954-55: Max 402 Min 0 Mean 41.7 Ac-ft 30,170

* Discharge measurement made on this day.
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 northeast of Walla Walla.

Drainage area.--48.4 sq mi.

Records available.--January 1949 to September 1955.

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

Average discharge.--6 years, 23.1 cfs (16,720 acre-ft per year).

Extremes.--Maximum discharge during year, 127 cfs Apr. 22 (gage height, 4.42 ft); minimum, 0.3 cfs Aug. 24 (gage height, 2.99 ft).
1949-55: 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 or no gage-height record, which are poor. Several small diversions above station for irrigation. No regulation.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.0	0.4	3.4	10
3.1	1.4	3.6	21
3.2	3.4	3.9	48
3.3	6.3	4.2	88

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.1	3.4	b5.0	27	20	9.0	54	40	17.5	4.6	1.2	0.5
2	2.3	3.4	b5.3	20	18	9.0	53	39	16	4.2	1.1	.6
3	2.1	3.4	5.3	14.5	17	8.6	44	38	16	3.7	1.0	.5
4	1.9	3.6	5.0	b12	15	b5.0	36	37	15	3.5	1.0	.5
5	1.9	3.6	4.7	b12	15	b5.0	31	43	15	3.2	.9	.5
6	2.1	3.6	5.0	b9.8	14	10	30	49	14.5	3.0	.8	.4
7	2.1	3.6	5.6	b8.2	18.5	9.4	34	46	14	3.0	.8	.5
8	2.1	3.6	5.3	b8.6	33	15	45	47	13	2.9	.8	.6
9	*2.1	3.6	5.0	b8.2	32	*18.5	52	43	12	2.7	.8	1.0
10	2.3	4.4	4.4	b8.2	26	18	82	38	11	2.5	.8	.8
11	2.3	4.4	4.2	7.0	21	18	60	42	10	2.3	.6	.6
12	2.3	5.6	4.2	7.0	18	18	50	45	9.6	2.3	.9	.6
13	2.7	5.6	5.3	7.8	16	16	*62	38	9.2	*2.3	1.2	.6
14	2.7	4.7	5.0	7.0	14.5	15.5	56	32	8.8	2.1	1.2	3.4
15	2.7	4.7	5.3	7.0	13.5	14.5	50	29	8.2	1.9	1.0	3.2
16	2.7	5.3	5.3	7.4	13	14.5	45	32	7.8	1.9	.8	2.7
17	2.5	7.4	b4.6	7.4	14	15	41	32	7.2	1.9	.6	3.4
18	2.5	*7.8	b4.6	6.6	12	16	40	31	6.6	1.7	.6	3.9
19	2.5	7.8	b4.7	5.6	10.5	16	35	32	6.2	1.4	.4	2.9
20	2.9	6.3	b4.7	7.4	10.5	14	31	41	5.7	1.4	.5	2.7
21	4.2	5.6	b4.8	6.6	11.5	14.5	33	40	5.4	1.4	.6	3.2
22	7.4	5.0	b5.0	7.0	11	16	67	32	5.0	1.1	.5	2.5
23	4.7	5.0	6.0	9.4	9.8	16	62	26	4.6	1.7	.5	1.2
24	4.4	4.7	6.0	16	9.4	15	54	23	4.3	1.7	.4	1.9
25	4.2	6.3	5.3	28	9.4	14	48	*19	3.9	1.2	.6	1.7
26	3.6	6.6	4.7	22	9.4	13.5	47	18	3.6	1.6	*.6	1.7
27	3.6	5.6	3.6	*20	8.6	15.5	42	17	3.3	3.2	.6	1.9
28	3.4	5.6	9.0	18	9.0	19	39	15.5	3.1	2.5	.6	3.4
29	3.2	5.6	7.8	16	-	39	37	15	3.4	2.1	.6	*2.7
30	3.2	5.6	*21	14.5	----	45	31	16	4.0	1.7	.6	2.7
31	3.4	-	32	17	----	43	-----	16	------	1.7	.6	----
Total	92.1	151.4	203.7	373.2	429.6	515.5	1,391	1,011.5	263.9	72.4	23.2	53.7
Mean	2.97	5.05	6.57	12.0	15.3	16.6	46.4	32.6	8.80	2.34	0.75	1.79
Ac-ft	183	300	404	740	852	1,020	2,760	2,010	523	144	46	107

Calendar year 1954: Max 194 Min 0.8 Mean 15.6 Ac-ft 11,280
Water year 1954-55: Max 82 Min 0.4 Mean 12.6 Ac-ft 9,090

Peak discharge (base, 400 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record May 26 to July 12; discharge estimated on basis of 2 discharge measurements, weather records, and records for station on nearby streams.

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 (February and March 1929 monthly discharge only, published in State Water-Supply Bulletin 6), April 1951 to September 1955.

Average discharge.--9 years (1924-29, 1951-55), 213 cfs (154,200 acre-ft per year).

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 during year, 925 cfs Apr. 10 (gage height, 6.47 ft); minimum, 18 cfs Aug. 12 (gage height, 4.63 ft).
1924-29, 1951-55: 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 good. 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 table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

4.6	9	5.2	240
4.7	28	5.5	410
4.8	57	6.0	695
5.0	138	6.5	985

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	54	61	235	125	90	530	392	246	87	37	26
2	51	54	61	193	134	90	519	392	235	87	31	22
3	51	54	61	148	116	83	438	380	240	79	31	22
4	45	57	61	125	116	64	374	368	246	72	31	24
5	48	54	61	112	125	45	328	392	273	68	31	26
6	48	54	64	94	107	90	356	460	290	68	31	26
7	45	54	68	87	214	79	432	465	290	76	24	26
8	45	57	64	83	317	116	519	471	278	68	24	28
9	48	57	61	79	295	*209	558	454	268	57	22	31
10	*51	64	57	79	219	224	794	416	262	·61	22	28
11	54	61	54	72	198	268	622	432	256	68	20	28
12	61	68	54	68	183	246	*536	483	246	57	20	28
13	61	68	72	68	158	219	656	460	224	*51	31	28
14	61	68	72	68	138	209	552	380	193	48	31	48
15	57	68	76	64	134	183	465	334	163	48	31	54
16	54	83	72	64	129	173	410	322	129	48	28	51
17	51	90	61	64	125	173	368	306	98	45	24	64
18	51	*103	61	64	98	173	350	295	83	42	22	54
19	51	94	61	57	90	178	306	344	68	42	22	48
20	57	83	57	61	90	168	295	432	76	40	28	42
21	68	79	57	57	98	168	300	471	68	37	31	45
22	98	76	57	57	94	178	564	454	61	37	31	48
23	76	72	57	72	87	178	536	398	64	34	31	45
24	72	68	61	116	90	168	483	368	68	34	31	42
25	72	72	54	219	83	153	438	*317	76	34	31	42
26	68	79	61	178	87	148	432	300	83	37	*34	45
27	68	76	87	*158	87	188	392	284	83	51	34	42
28	68	72	107	138	87	273	368	256	76	51	34	54
29	64	68	76	129	-	438	350	262	79	45	34	*54
30	57	61	*148	120	------	483	362	295	79	42	31	51
31	54	------	317	129	------	432	------	273	------	40	28	------
Total	1,809	2,068	2,341	3,258	3,824	5,887	13,633	11,656	4,901	1,654	891	1,172
Mean	58.4	68.9	75.5	105	137	190	454	376	163	53.4	28.7	39.1
Ac-ft	3,590	4,100	4,640	6,460	7,580	11,680	27,040	23,120	9,720	3,280	1,770	2,320

Calendar year 1954: Max 1,420 Min 20 Mean 185 Ac-ft 134,200
Water year 1954-55: Max 794 Min 20 Mean 145 Ac-ft 105,300

Peak discharge (base, 2,500 cfs).--No peak above base.
* Discharge measurement made on this day.

Touchet River near Touchet, Wash.

Location.--Lat 46°07'25", long 118°39'00", in SE¼SW¼ sec. 35, T. 8 N., R. 33 E., at Johnson Bridge, 6 miles north of Touchet and 7 miles upstream from mouth.

Drainage area.--733 sq mi.

Records available.--April 1941 to September 1955 (discontinued).

Gage.--Wire-weight gage read once daily. Altitude of gage is 530 ft (from topographic map). Prior to July 3, 1941, staff gage and July 3, 1941, to June 23, 1954, water-stage recorder, at site 2½ miles downstream at different datum.

Average discharge.--14 years, 242 cfs (175,200 acre-ft per year).

Extremes.--Maximum discharge during year, 952 cfs Apr. 13 (gage height, 4.07 ft, from floodmark on outside gage); minimum observed, 14.5 cfs Aug. 13 (gage height, 1.12 ft).
1941-55: Maximum discharge, 13,300 cfs Feb. 10, 1949 (gage height, 14.7 ft, from high-water mark in gage house, site and datum then in use), by contracted-opening method at Johnson Bridge; minimum, 6.0 cfs Sept. 11, 1951.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Many large diversions above station for irrigation of an estimated 3,500 acres. Occasional regulation from unknown source.

Revisions (water years).--WSP 1124: Drainage area at former site. WSP 1154: 1946(M).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 24		Jan. 25 to Sept. 30			
1.4	40	1.1	13	2.5	237
1.7	74	1.3	27	3.0	420
2.0	120	1.5	47	3.5	645
2.5	235	1.7	70	4.0	910
3.0	400	2.0	116		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	56	66	374	154	99	532	440	220	80	31	19
2	45	56	64	*230	145	98	605	448	222	85	29	17.5
3	48	57	68	165	140	93	496	432	222	85	24	16
4	45	58	73	141	134	90	420	436	228	80	23	15.5
5	45	62	71	143	143	80	337	440	228	75	25	16
6	47	60	74	122	134	85	372	452	253	*73	24	17.5
7	46	57	77	128	134	106	510	572	266	90	20	17.5
8	47	59	81	113	322	99	605	554	263	84	19	17.5
9	48	57	75	115	380	177	690	487	253	83	19	19.5
10	48	57	73	98	276	326	767	460	259	70	17.5	25
11	*49	59	69	98	220	228	806	590	256	69	17.5	20
12	48	66	65	106	200	225	720	572	250	81	15	19.5
13	53	70	62	91	175	228	860	487	235	65	14.5	20
14	53	68	66	102	158	222	*685	460	220	60	26	25
15	52	66	74	94	143	228	605	428	190	51	26	37
16	52	73	81	94	136	234	496	396	160	46	28	49
17	51	85	80	97	134	180	452	353	125	45	23	43
18	47	94	76	96	134	172	412	334	100	44	22	58
19	49	97	75	92	122	172	345	322	80	38	21	49
20	49	*84	75	85	120	168	334	396	70	36	19	36
21	59	80	75	80	122	165	334	582	75	33	21	45
22	64	78	76	82	120	154	600	564	65	31	26	46
23	88	73	77	84	106	158	710	487	60	29	24	45
24	80	69	81	203	104	165	590	432	65	28	23	42
25	70	66	84	492	99	158	510	357	70	25	*22	36
26	61	77	87	237	99	154	496	297	80	28	22	38
27	60	80	85	182	99	158	518	*263	80	34	26	40
28	59	75	85	160	98	294	482	263	80	45	25	52
29	58	71	91	*145	-	492	460	237	80	43	24	52
30	57	69	106	134	----	740	420	243	80	40	22	*47
31	57	---	328	140	---	492	------	217	------	36	21	---
Total	1,677	2,079	2,622	4,523	4,351	6,440	16,169	13,001	4,835	1,712	699.5	980.5
Mean	54.1	69.3	84.6	146	155	208	539	419	161	55.2	22.6	32.7
Ac-ft	3,330	4,120	5,200	8,970	8,630	12,770	32,070	25,790	9,590	3,400	1,390	1,940

Calendar year 1954: Max 1,600 Min 23 Mean 190 Ac-ft 137,600
Water year 1954-55: Max 860 Min 14.5 Mean 162 Ac-ft 117,200

Peak discharge (base, 2,000 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1, 2, 17-23, 27, 28, and Mar. 5, 6 (stage-discharge relation affected by ice), June 12 to July 5, July 17; discharge estimated on basis of weather records and records for nearby stations.

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 and 3 miles downstream from Touchet River.

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

Records available.--October 1951 to September 1955.

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 year, 2,390 cfs Apr. 10 (gage height, 6.24 ft); minimum, 4.2 cfs July 27 (gage height, 1.77 ft).
1951-55: Maximum discharge, 16,300 cfs Feb. 2, 1952 (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, that of July 27, 1955.
Maximum stage known, 13.81 ft in February 1949, from floodmarks (discharge, 23,800 cfs).

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

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.8	5.3	3.2	265
1.9	11.5	3.6	420
2.0	20	4.0	600
2.2	42	5.0	1,260
2.5	80	6.0	2,150
2.8	142		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	120	183	782	650	488	1,040	878	585	68	25	11
2	112	123	180	662	565	484	1,400	939	496	74	20	10
3	108	132	204	*580	550	468	1,280	904	452	74	20	9.5
4	108	140	204	484	525	464	1,040	878	448	67	27	10
5	112	140	201	472	525	440	812	904	492	67	16	8.3
6	101	142	272	468	525	452	686	1,210	525	66	13	7.7
7	101	140	279	440	540	492	636	1,370	525	*74	11.5	7.7
8	90	140	279	420	746	500	1,160	1,390	545	77	11.5	7.7
9	77	135	272	420	1,170	640	1,460	1,360	530	71	11.5	9.5
10	*74	137	262	420	953	*710	1,920	1,160	530	67	11	11.5
11	92	145	262	420	764	722	1,890	1,090	530	70	11.5	12
12	94	160	262	412	686	674	1,400	1,380	505	67	10	12
13	77	165	268	421	620	625	1,480	1,380	456	57	10	11.5
14	82	165	282	424	580	565	*1,360	1,020	368	49	9.5	22
15	82	165	279	420	555	510	1,310	890	300	40	10	31
16	85	165	279	416	550	460	1,090	1,050	227	34	9.5	44
17	87	174	296	424	565	432	1,000	988	165	43	8.9	42
18	83	220	279	416	545	428	925	925	137	36	8.9	50
19	80	261	276	400	510	424	842	988	120	31	7.7	44
20	83	*208	279	392	505	400	740	1,350	118	33	5.3	42
21	94	198	272	400	520	380	686	1,690	103	31	6.5	37
22	118	192	296	392	520	420	1,130	1,500	87	20	7.7	44
23	142	183	290	412	505	444	1,570	1,280	85	19	10	55
24	123	177	312	480	480	392	1,400	1,020	85	15	*11	63
25	118	174	312	645	480	340	1,200	872	79	19	10	55
26	118	214	300	668	480	293	1,040	746	76	14	8.9	54
27	123	224	290	600	492	282	953	*722	79	18	10	54
28	128	204	300	560	488	368	824	630	82	23	11	64
29	130	198	340	*530	-	650	758	600	77	32	11	72
30	128	198	372	525	------	1,060	794	662	76	29	10	*80
31	128	------	728	515	------	1,050	------	704	------	29	10	------
Total	3,186	5,139	8,910	15,019	16,594	16,057	34,026	32,480	8,883	1,414	363.9	981.4
Mean	103	171	287	484	593	518	1,134	1,048	296	45.6	11.7	32.7
Ac-ft	6,320	10,190	17,670	29,790	32,910	31,850	67,490	64,420	17,620	2,800	722	1,950

Calendar year 1954: Max 3,000 Min 18.5 Mean 451 Ac-ft 326,300
Water year 1954-55: Max 1,920 Min 5.3 Mean 392 Ac-ft 283,700

Peak discharge (base, 3,000 cfs).--No peak above base.
* Discharge measurement made on this day.

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-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 below Milton-Freewater and extends from the vicinity of Nicholas Spring, which is about half a mile east of 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 River basin. The intermediate and outer zones, each of which contains only a few springs, are about 2 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 1954 to September 1955†

Date	Spring	Locality	Discharge (cfs)
Springs of the inner zone			
Feb. 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.	6.89
June 17	....do.....	....do.....	14.80
Aug. 23	....do.....	....do.....	5.15
Feb. 23	Big Spring Branch (east prong), Oreg.	NE¼SW¼ sec. 24, T. 6 N., R. 35 E., above flow line of small reservoir supplying two diversion pumps.	2.79
June 17	....do.....	....do.....	3.20
Aug. 23	....do.....	....do.....	1.83
Feb. 23	Engle Spring, Oreg.....	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., total flow at diversion dam.	3.10
June 17	....do.....	....do.....	4.26
Aug. 23	....do.....	....do.....	3.36
Feb. 22	Downing Spring, Oreg...	SE¼SW¼ sec. 23, T. 6 N., R. 35 E., at weir, 200 ft below spring orifice.	.92
June 17	....do.....	....do.....	3.53
Aug. 23	....do.....	....do.....	1.46
Feb. 22	Haun Spring, Oreg.....	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., at Haun farm, 200 ft above highway crossing.	1.36
June 17	....do.....	....do.....	1.95
Aug. 23	....do.....	....do.....	1.18
Springs of the intermediate and outer zones			
Mar. 8	McEvoy Spring, Wash....	SE¼NW¼ sec. 10, T. 6 N., R. 35 E., at McEvoy farm, 200 ft above Walla Walla Railway.	1.57
June 17	....do.....	....do.....	3.06
Aug. 24	....do.....	....do.....	2.57
Feb. 22	Lewis Spring, Oreg.....	NW¼NW¼ sec. 23, T. 6 N., R. 35 E., below road crossing.	1.43
June 17	....do.....	....do.....	2.23
Aug. 23	....do.....	....do.....	2.14
Mar. 8	Unnamed Spring, Wash...	NW¼NE¼ sec. 16, T. 6 N., R. 35 E., at small diversion structure.	1.29
June 17	....do.....	....do.....	2.18
Aug. 24	....do.....	....do.....	1.65
Feb. 23	East Mud Creek (east prong), Oreg.	SE¼SW¼ sec. 22, T. 6 N., R. 35 E., in diversion ditch, 150 ft below diversion dam.	1.49
Aug. 23	....do.....	....do.....	2.71
Mar. 8	East Mud Creek (branch of), Oreg.	SW¼SW¼ sec. 16, T. 6 N., R. 35 E., near Lockwood dwelling.	1.32
June 17	....do.....	....do.....	2.35
Aug. 25	....do.....	....do.....	1.99
Mar. 9	South Mud Creek, Oreg..	SE¼NW¼ sec. 28, T. 6 N., R. 35 E., at Von Der Ahe farm.	.38
Aug. 25	....do.....	....do.....	1.72
Feb. 21	Johnson Creek, Oreg....	SE¼NW¼ sec. 29, T. 6 N., R. 35 E., at two weirs....	.97
Mar. 9	....do.....	....do.....	.75
June 18	....do.....	....do.....	3.22
Aug. 25	....do.....	....do.....	2.14
Feb. 21	Dugger Creek, Oreg.....	NW¼NW¼ sec. 32, T. 6 N., R. 35 E., at two weirs....	2.99
Mar. 9	....do.....	....do.....	2.38
Aug. 24	....do.....	....do.....	4.93
Feb. 24	Schwartz Spring, Branch (south prong), Oreg.	SW¼SE¼ sec. 23, T. 6 N., R. 34 E., at weirs.....	4.10
June 18	....do.....	....do.....	3.27
Aug. 24	....do.....	....do.....	2.85
Mar. 8	Schwartz Spring Branch (north prong), Oreg.	NE¼SW¼ sec. 23, T. 6 N., R. 34 E., in ditch diverting from spring.	4.99
June 18	....do.....	....do.....	4.80
Aug. 24	....do.....	....do.....	2.93
Mar. 8	South Mud Creek, Oreg.	SW¼SE¼ sec. 13, T. 6 N., R. 34 E., at Krumbaugh farm.	6.36
June 18	....do.....	....do.....	4.78
Aug. 23	....do.....	....do.....	2.96

† Measurements by Umatilla County deputy watermaster.

[1] Piper, A. M., Robinson, T. W., and Thomas, H. E., Ground Water in the Walla Walla River basin, Oreg.-Wash.: Supreme Court of the United States, October term 1935, State of Washington vs. State of Oregon, transcript of record, p. 132A, October 14, 1935.

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 Meacham Creek, and 2½ miles northeast of Gibbon.

Drainage area.--125 sq mi; at site used April 1933 to June 1939, 128 sq mi (revised).

Records available.--April 1933 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,854.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 27, 1939, at site 1 mile downstream at datum 43.94 ft lower.

Average discharge.--22 years, 222 cfs (160,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,320 cfs May 19 (gage height, 5.01 ft); minimum, 44 cfs Sept. 1, 11.

1933-55: 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.

Revisions.--The maximum discharge for the period April to September 1933 has been revised to 1,550 cfs Apr. 27, 1933 (gage height, 2.29 ft), superseding figure published in WSP 769.

Remarks.--Records good.

Revisions.--Revised figures of discharge, in cubic feet per second, for April 1933, superseding those published in WSP 769, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1933		1933-Con.		1933-Con.		1933-Con.	
Apr. 4	830	Apr. 18	472	Apr. 22	980	Apr. 26	1,170
15	652	19	454	23	1,190	27	1,320
16	692	20	571	24	1,310	28	1,380
17	564	21	718	25	1,330	29	1,170

Month	Maximum	Minimum	Mean	Runoff in acre-feet
April 1933.....	1,380	320	751	44,670

Rating tables, water year 1954-55 (gage height, in feet, and discharge in cubic feet per second)

Oct. 1 to May 19

2.0	41	3.5	395
2.2	57	4.0	645
2.5	90	5.0	1,310
3.0	200		

May 20 to Sept. 30

2.0	40	2.5	88
2.2	55	3.0	200

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	48	52	152	115	99	500	545	426	168	58	46
2	47	*48	51	129	109	96	490	535	418	150	57	45
3	47	48	51	104	100	90	368	570	455	139	56	46
4	47	48	51	90	93	89	286	560	505	133	56	46
5	47	47	51	82	92	92	*246	821	550	127	55	46
6	47	47	54	75	87	98	330	*981	560	145	54	46
7	47	47	*54	73	160	117	594	939	575	170	53	46
8	47	47	52	69	560	232	748	974	575	*139	53	47
9	47	49	51	68	418	322	825	844	585	131	53	*48
10	47	53	51	66	242	294	974	825	601	129	52	46
11	47	51	50	64	173	274	*650	981	590	121	52	46
12	*55	55	49	63	141	232	510	1,020	560	111	51	45
13	54	55	53	64	125	191	550	786	495	103	51	45
14	51	55	52	62	115	165	500	612	413	96	51	58
15	49	56	55	62	125	145	413	530	350	93	51	53
16	48	56	53	63	141	143	359	712	306	91	50	60
17	49	72	51	63	143	148	346	684	274	84	49	57
18	48	81	51	62	129	162	338	712	256	80	49	51
19	51	81	51	62	121	162	318	*962	242	78	49	50
20	51	69	51	64	117	150	298	1,190	242	75	49	49
21	51	62	51	62	*113	143	372	1,090	246	*74	48	50
22	55	60	51	62	109	150	606	877	246	71	48	49
23	51	57	52	70	102	155	575	718	228	67	48	48
24	49	56	52	123	100	160	505	601	207	68	47	47
25	51	56	52	*152	96	148	440	515	185	65	47	48
26	50	*55	51	145	94	137	422	520	179	64	47	48
27	49	55	51	139	92	152	359	475	168	65	46	48
28	49	56	51	129	92	224	326	475	173	63	46	53
29	48	55	55	123	-	495	342	550	182	62	46	51
30	48	54	69	113	------	436	426	580	165	60	46	50
31	48	-----	139	111	-----	350	-----	490	------	60	46	------
Total	1,522	1,679	1,708	2,766	4,104	5,851	14,016	22,674	10,957	3,082	1,564	1,468
Mean	49.1	56.0	55.1	89.2	147	189	467	731	365	99.4	50.5	48.9
Cfsm	0.393	0.448	0.441	0.714	1.18	1.51	3.74	5.85	2.92	0.795	0.404	0.391
In.	0.45	0.50	0.51	0.82	1.22	1.74	4.17	6.75	3.26	0.92	0.47	0.44
Ac-ft	3,020	3,330	3,390	5,490	8,140	11,610	27,800	44,970	21,730	6,110	3,100	2,910

Calendar year 1954: Max 1,070 Min 47 Mean 172 Cfsm 0.138 In. 18.70 Ac-ft 124,600
Water year 1954-55: Max 1,190 Min 45 Mean 196 Cfsm 0.157 In. 21.25 Ac-ft 141,600

Peak discharge (base, 1,400 cfs).--No peak above base.
* Discharge measurement made on this day.

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, October 1934 to September 1955.

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. Supplementary water-stage recorder at site 600 ft upstream at different datum used for some low-water periods since Aug. 1, 1942.

Average discharge.--21 years (1934-55), 489 cfs (354,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,130 cfs May 6 (gage height, 3.89 ft); minimum, 20 cfs Aug. 24, 25.

1891-92, 1903-5, 1934-55: Maximum discharge, 15,400 cfs Feb. 22, 1949 (gage height, 9.01 ft); minimum, 10 cfs July 13-16, 1940.

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 good. Diversions for irrigation of about 1,100 acres above station; no regulation.

Revisions (water years).--WSP 934: 1931 (maximum gage height only). Revised figures of discharge, in cubic feet per second, for the water years 1904 and 1937, superseding those published in WSP 370 and 834, are given herein. Complete table of daily discharge is given for a period from October to May 1904 but only revised figures for water year 1937.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1937		1937-Con.		1937-Con.		1937-Con.	
Mar. 2	837	Mar. 10	1,120	Mar. 18	1,270	Mar. 26	754
3	1,010	11	1,260	19	1,240	27	802
4	1,070	12	1,500	20	1,040	28	900
5	1,250	13	1,500	21	918	29	918
6	1,240	14	1,250	22	846	30	927
7	1,210	15	1,090	23	770	31	1,030
8	1,080	16	1,250	24	723		
9	1,140	17	1,270	25	730		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
March 1937.....	32,464	1,500	519	1,047	64,390
Water year 1936-37...	138,761	4,120	22	380	275,200
Calendar year 1937...	153,744	4,120	22	421	305,000

Discharge, in cubic feet per second, October 1903 to May 1904

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	175	1,340	430	520	1,170	2,380	1,780				
2	-	186	1,410	400	490	1,210	2,530	1,600				
3	-	192	1,180	372	460	1,140	3,130	1,820				
4	135	189	960	372	460	1,100	2,910	1,820				
5	-	182	808	372	520	1,100	2,660	1,710				
6	-	203	700	345	520	1,390	3,680	1,530				
7	-	254	580	345	520	*2,830	3,160	1,530				
8	-	272	520	384	490	5,320	2,730	1,400				
9	-	286	460	389	460	*5,040	3,280	1,420				
10	-	378	406	430	400	3,530	4,380	1,530				
11	-	406	400	670	400	2,700	5,490	1,550				
12	-	694	372	802	430	2,130	5,360	1,580				
13	-	682	372	1,210	430	1,830	*6,080	1,580				
14	-	897	372	1,170	400	1,530	5,940	1,510				
15	-	1,170	372	1,430	412	1,800	5,540	1,440				
16	-	967	742	1,390	1,290	1,620	4,500	1,270				
17	-	820	1,330	1,290	1,270	1,600	3,800	1,250				
18	-	754	1,050	1,210	*1,100	1,730	3,530	1,230				
19	-	700	890	1,040	1,030	1,760	3,980	1,350				
20	-	800	980	890	960	1,890	4,320	1,400				
21	-	1,140	995	790	890	1,840	3,760	1,400				
22	230	3,110	1,170	911	1,110	1,620	3,280	1,230				
23	218	2,010	1,150	1,150	1,490	*1,480	2,580	1,190				
24	210	1,820	995	1,140	1,470	1,230	2,100	*1,150				
25	203	1,470	890	960	1,410	1,110	2,030	936				
26	203	1,250	730	925	1,390	1,030	2,660	810				
27	203	1,270	670	790	1,490	1,030	2,910	740				
28	200	1,210	600	670	1,330	1,110	2,780	*635				
29	192	1,100	560	610	1,190	2,280	2,580	585				
30	-	1,070	520	580	------	3,550	2,100	518				
31	186	------	460	550	------	2,840	------	500	------			------
Total	-	25,657	23,964	24,017	24,332	61,540	106,140	39,974				
Mean	-	855	773	775	839	1,990	3,540	1,290				
Ac-ft	-	50,900	47,500	47,700	48,300	122,000	211,000	79,300				

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

* Discharge measurement made on this day.

Umatilla River at Pendleton, Oreg.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 5-7)

Oct. 1 to Apr. 10				Apr. 11 to Sept. 30			
1.1	38	2.0	400	0.9	14	2.0	440
1.3	80	2.5	800	1.1	38	2.5	890
1.5	140	3.0	1,370	1.3	80	3.0	1,510
1.7	222	3.6	2,280	1.5	148	3.7	2,720
				1.7	250		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	64	75	272	278	222	1,040	1,360	760	217	49	34
2	57	64	*73	267	262	232	1,190	1,430	690	200	44	28
3	53	64	73	227	247	218	933	1,520	710	181	44	27
4	53	*62	73	191	227	209	782	1,430	770	167	44	27
5	53	62	73	170	209	178	638	1,960	870	*164	*42	28
6	53	62	73	151	200	196	665	2,680	870	181	38	28
7	49	62	75	137	213	200	1,140	2,350	880	239	37	30
8	49	59	75	130	587	358	1,760	2,480	870	212	30	34
9	49	62	73	124	880	656	1,930	2,120	850	186	35	38
10	49	66	73	120	604	674	2,160	1,960	850	181	35	38
11	*51	68	73	114	470	656	*1,830	2,050	830	167	34	35
12	55	68	73	110	386	596	1,360	2,370	790	148	32	28
13	64	73	75	110	324	519	1,550	1,910	710	133	34	34
14	59	73	78	110	295	449	1,430	1,430	600	114	35	51
15	55	75	75	*107	289	393	1,240	1,190	520	104	35	62
16	53	78	78	107	313	365	1,100	1,840	440	101	35	59
17	51	88	78	110	358	358	956	1,950	384	98	34	68
18	51	107	75	107	337	372	912	1,750	352	*92	32	62
19	51	117	75	104	295	393	850	1,900	328	83	32	53
20	55	107	73	104	272	379	780	2,460	*310	75	31	51
21	59	102	73	104	*257	351	780	2,370	316	71	31	49
22	73	94	73	107	247	344	1,240	1,950	316	66	*32	53
23	71	91	73	110	237	358	1,360	1,500	310	64	32	51
24	66	88	73	178	227	358	1,250	1,220	280	57	25	48
25	64	85	73	232	218	351	1,130	1,040	250	53	22	48
26	64	83	73	262	213	324	1,070	956	228	59	31	46
27	64	80	75	257	209	324	978	890	222	73	31	46
28	64	80	71	247	204	*414	*870	810	217	64	31	51
29	64	78	80	237	-	880	820	901	244	64	32	55
30	64	78	133	222	------	1,060	967	1,000	*217	57	32	53
31	64	------	222	213	------	860	-----	901	------	53	31	------
Total	1,786	2,340	2,508	5,041	8,858	13,247	34,711	51,678	15,984	3,724	1,062	1,315
Mean	57.6	78.0	80.9	163	316	427	1,157	1,667	533	120	34.3	43.8
Ac-ft	3,540	4,640	4,970	10,000	17,570	26,280	68,850	102,500	31,700	7,390	2,110	2,610

Calendar year 1954: Max 2,640 Min 34 Mean 320 Ac-ft 231,600
Water year 1954-55: Max 2,680 Min 22 Mean 390 Ac-ft 282,200

Peak discharge (base, 3,200 cfs).--No peak above base.
* 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 1955.

Gage.--Water-stage recorder. Datum of gage is 1,335.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. 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.--27 years (1926-27, 1929-55), 95.7 cfs (69,280 acre-ft per year).

Extremes.--Maximum discharge during year, 1,340 cfs May 16 (gage height, 4.45 ft); no flow Sept. 3-14, 21, 22.

1921, 1926-55: Maximum discharge, 6,000 cfs Apr. 1, 1931 (gage height, 10.4 ft, site and datum then in use), from rating curve extended above 220 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those below 10 cfs, which are poor. Diversions above station for irrigation.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1928-29, 1933, and 1940, superseding those published in WSP 674, 694, 754, and 904, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1927		1933-Con.		1933-Con.		1933-Con.	
Nov. 25	400	June 4	49	June 18	10	June 29	3
26-30	†540	5	42	19	9	30	2
		6	38	20	9		
1929		7	36	21	8	1940	
Jan. 1-31	†15	8	36	22	7	May 12	22
Feb. 1-15	†10	9	37	23	7	13	22
		10	43	24	6	14	22
1933		11	36	25	6	15	17
June 1	78	12	31	26	5	16	13
2	66	14	22	27	4	17	15
3	56	17	13	28	3		

† Average for period indicated.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
November 1927	-	-	24	257	15,300
Calendar year 1927	-	-	0	130	94,400
January 1929	-	-	-	15	922
February	-	120	-	35.3	1,960
June 1933	-	78	2	24.1	1,430
Water year 1932-33	-	1,020	0	96.8	70,200
Calendar year 1933	-	1,020	0	108	78,100
May 1940	836.6	72	1.4	27.0	1,660
Water year 1939-40	28,018.5	1,340	0	76.6	55,580
Calendar year 1940	33,939.7	1,340	0	92.8	67,320

McKay Creek near Pilot Rock, Oreg.--Continued

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-5, June 20 to Sept. 30)

1.0	0.1	1.7	33
1.1	.4	2.0	72
1.2	1.0	2.5	175
1.3	2.5	3.0	340
1.4	7.5	3.5	600
1.5	15	4.2	1,120

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	3.5	9.8	102	66	44	300	352	97	14	2.0	0.1
2	1.4	4.0	9.8	84	74	50	286	356	84	14	1.8	.1
3	1.3	4.5	9.0	58	68	54	244	368	*75	14	1.6	0
4	1.3	4.5	9.0	50	60	53	208	364	70	12	1.4	0
5	*1.5	5.0	8.2	38	54	47	175	486	66	10	1.2	0
6	1.8	4.5	9.0	33	49	50	*202	552	60	10	.9	0
7	1.8	4.5	9.8	29	66	64	290	470	53	*14	.9	0
8	1.8	4.0	9.8	27	199	150	400	445	45	13	.8	0
9	1.8	4.0	9.0	25	199	214	450	364	42	12	*.8	*0
10	1.9	5.0	9.0	24	137	190	582	324	36	11	.8	0
11	1.8	6.5	7.5	22	104	170	*450	324	33	9.8	.7	0
12	1.9	10	8.2	21	84	152	390	320	28	8.2	.7	0
13	2.0	14	7.5	20	70	132	642	265	27	7.0	.7	0
14	2.2	13	7.5	18	63	118	546	217	23	6.0	.7	0
15	2.4	12	7.0	*18	62	102	455	229	22	5.5	.7	.2
16	2.4	11	7.5	18	68	106	372	1,050	21	5.0	.6	.2
17	2.4	11	7.0	18	84	106	360	872	18	4.5	.5	.1
18	2.4	12	7.0	17	72	110	348	594	16	4.0	.4	.1
19	2.4	14	7.5	16	63	112	*316	465	12	4.0	.4	.1
20	2.4	14	7.5	16	60	102	279	415	*4.5	4.0	.3	.1
21	2.5	11	7.5	16	53	95	265	348	4.5	*3.2	.3	0
22	*2.5	11	7.5	17	*49	95	364	282	4.5	3.5	.3	0
23	2.5	11	7.5	17	47	91	395	235	5.0	3.5	.3	.1
24	2.5	11	8.2	23	43	91	368	205	5.5	3.0	.3	.3
25	2.5	10	8.2	35	42	84	332	178	5.5	2.5	.3	.3
26	2.5	10	8.2	44	41	77	312	162	6.0	2.5	.3	.3
27	2.5	10	7.0	48	41	75	262	150	6.5	2.5	.2	.5
28	3.0	10	8.2	47	40	118	232	130	8.2	2.5	.2	.8
29	3.0	10	8.2	45	-	253	232	122	14	2.4	.2	.9
30	3.0	*9.8	22	42	----	250	276	118	14	2.2	.2	1.2
31	3.5	---	106	43	---	223	-----	110	----	2.0	.2	---
Total	68.3	264.8	365.1	1,031	2,058	3,578	10,333	10,872	906.2	211.8	20.7	5.4
Mean	2.20	8.83	11.8	33.3	73.5	115	344	351	30.2	6.83	0.67	0.18
Ac-ft	135	525	724	2,040	4,080	7,100	20,500	21,560	1,800	420	41	11

Calendar year 1954: Max 530 Min 0.5 Mean 51.3 Ac-ft 37,160
Water year 1954-55: Max 1,050 Min 0 Mean 81.4 Ac-ft 58,940

Peak discharge (base, 700 cfs).--Apr. 13 (1:30 a.m.) 816 cfs (3.82 ft); May 16 (12 m.) 1,340 cfs (4.45 ft).
* Discharge measurement or observation of no flow made on this day.

McKay Reservoir near Pendleton, Oreg.

Location.--Lat 45°36'30", long 118°47'40", 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 1955 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, 62,380 acre-ft June 11, 17, 20 (elevation, 1,312.3 ft); minimum observed, 5,570 acre-ft Oct. 8 (elevation 1,225.7 ft).
1930-55: 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.--WSP 1154: Drainage area.

Month-end elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,225.5	5,500	-
Oct. 31	1,226.4	5,810	+310
Nov. 30	1,227.9	6,350	+540
Dec. 31	1,229.4	6,890	+540
Calendar year 1954	-	-	-19,130
Jan. 31	1,235.1	9,060	+2,170
Feb. 28	1,244.6	13,050	+3,990
Mar. 31	1,258.8	20,200	+7,150
Apr. 30	1,289.4	40,640	+20,440
May 31	1,311.4	61,390	+20,750
June 30	1,308.9	58,690	-2,700
July 31	1,290.6	41,610	-17,080
Aug. 31	1,253.6	17,410	-24,200
Sept. 30	1,226.8	5,950	-11,460
Water year 1954-55	-	-	+450

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 35 ft upstream from 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 1955.
Gage.--Water-stage recorder and concrete control. Datum of gage is 1,163.71 ft above mean sea level (Bureau of Reclamation benchmark). 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 Jan. 15, 1927, to Nov. 15, 1948, water-stage recorder, at several sites within 220 ft of present site, at various datums.
Average discharge.--18 years (1932-43, 1948-55), 88.3 cfs (63,930 acre-ft per year) unadjusted.
Extremes.--Maximum discharge during year, 420 cfs Aug. 16 (gage height, 1.58 ft); no flow Oct. 1 to about Mar. 31, and less than 1 cfs diverted around station during this period. 1918-23, 1924-55: 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. Since 1932 records exclude flow in Elder ditch, which diverts up to 10 cfs around station, for irrigation below station, in summer months, and entire flow (seepage only) as stock water at times during winter months. Flow completely regulated since 1927 by McKay Reservoir (see preceding page).
Revisions.--WSP 1154: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1923, superseding those published in WSP 574, are given herewith:

1923		1923--Con.	
June 18	160	June 21	95
19	120	22	80
20	100	23	80

Month	Maximum	Minimum	Mean	Runoff in acre-feet
June 1923	335	52	167	9,240
Water year 1922-23	750	0	92.9	67,200

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.0	0	.7	91
.1	3	1.0	175
.3	25	1.6	430
.5	52		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								2	8	175	318	340
2								2	8	156	345	360
3								*2	*8	156	370	365
4								4	8	156	365	340
5								7	8	210	365	335
6								8	8	234	355	340
7								8	9	178	345	345
8								7	6	*153	345	340
9								7	5	169	*345	318
10							1	7	5	189	355	298
11								7	5	189	360	286
12								8	5	*218	360	286
13								7	5	258	360	298
14								7	5	278	360	302
15								7	5	298	380	298
16								7	5	314	400	246
17								7	5	314	415	153
18							1	7	5	318	*410	*98
19							1	8	6	340	405	1
20							1	6	37	340	400	0
21							1	6	*95	340	400	0
22							1	5	159	340	395	0
23							1	6	159	340	395	0
24							1	6	159	340	370	0
25							1	6	175	340	*365	0
26							1	7	189	*329	360	0
27							1	7	189	175	360	0
28							1	7	189	237	355	0
29							2	7	189	340	350	0
30							2	7	*189	330	345	0
31								8		322	345	
Total	0	0	0	0	0	0	32	197	1,848	8,076	11,398	5,349
Mean	0	0	0	0	0	0	1.1	6.4	61.6	261	368	178
Ac-ft	0	0	0	0	0	0	63	391	3,670	16,020	22,610	10,610

Calendar year 1954: Max 400 Min 0 Mean 70.8 Ac-ft 51,230
Water year 1954-55: Max 415 Min 0 Mean 73.7 Ac-ft 53,360

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to Apr. 17; considered no flow Oct. 1 to Mar. 31 and 1 cfs Apt. 1-17 on basis of contents of McKay Reservoir and resultant effect on seepage from reservoir.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 951.83 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 site 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.--26 years (1929-55), 44.8 cfs (32,430 acre-ft per year).

Extremes.--Maximum discharge during year, 990 cfs May 16 (gage height, 5.00 ft); minimum, 0.1 cfs July 23 to Sept. 30.

1921-23, 1927-55: Maximum discharge, 1,860 cfs June 17, 1950 (gage height, 7.2 ft, from floodmark), from rating curve extended above 380 cfs by logarithmic plotting; no flow at times.

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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
739	1932	Mar. 19, 1932	1,010	†4.9
864	1938	June 22, 1938	1,320	5.91
884	1939	Mar. 21, 1939	766	3.69
904	1940	Apr. 9, 1940	442	3.83

† Approximate.

Remarks.--Records good above 1 cfs, poor below. Diversions for irrigation of about 4,000 acres above station. No regulation.

Revisions (water years).--WSP 984: 1939. Revised figures of discharge, in cubic feet per second, for the water years 1929, 1932-33, 1938-39, superseding those published in WSP 694, 739, 754, 864 and 884, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1929		1932-Con.		1939-Con.	
Feb. 5	13	Mar. 20	622	Mar. 22	522
6	10	21	382	23	480
7	7			24	430
8	7	1933		25	355
9	8	Feb. 8-15	†9	26	332
10	10			27	300
11	11	1938		28	252
12	12	Feb. 4	29	30	192
				31	184
1932		1939			
Mar. 19	970	Mar. 21	640		

† Average for period indicated.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
February 1929	-	56	7	21.1	1,170
March 1932	-	970	81	208	12,800
Water year 1931-32	-	970	0	45.6	33,100
Calendar year 1932	-	970	0	44.7	32,400
February 1933	-	18	-	12.2	678
Water year 1932-33	-	269	0	34.5	24,900
Calendar year 1933	-	269	0	37.2	26,900
February 1938	1,307	95	28	46.7	2,590
Water year 1937-38	15,758.6	530	0	43.2	31,260
Calendar year 1938	14,862.5	530	0	40.7	29,480
March 1939	5,837	640	20	188	11,580
Water year 1938-39	10,908.4	640	0	29.9	21,630
Calendar year 1939	10,408.5	640	0	28.5	20,640

Birch Creek at Rieth, Oreg.--Continued

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss or debris Oct. 1 to Nov. 13, May 7, 8)

0.0	0	1.5	80
.1	.2	2.0	157
.2	.6	2.5	250
.3	1.2	3.0	375
.5	3.6	3.5	510
.7	9.0	4.0	660
1.0	27	4.3	750
1.3	55		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	3.6	9.4	12	15	21	106	107	113	0.2	0.1	0.1
2	.2	3.8	*11	12	15	21	86	120	99	.2	.1	.1
3	.2	4.9	11	11	15	21	77	132	*90	.2	.1	.1
4	.2	5.6	11	10	15	19	70	135	88	.2	.1	.1
5	.2	5.6	11	12	15	16	59	188	86	.2	.1	.1
6	.2	5.6	11	12	16	19	54	312	75	.3	.1	.1
7	.2	5.6	12	11	15	19	70	292	59	*2.5	.1	.1
8	.2	6.4	12	12	15	24	100	355	47	2.0	.1	.1
9	.2	3.6	12	12	17	50	126	302	40	1.1	.1	.1
10	.3	3.0	12	12	17	53	170	278	33	3.0	.1	.1
11	*.2	2.6	12	12	17	43	*159	312	21	4.5	.1	.1
12	.2	3.0	10	12	19	39	135	342	16	2.9	.1	.1
13	.2	3.0	11	12	19	37	152	290	9.9	2.3	.1	.1
14	.2	4.5	7.7	13	18	37	150	228	8.4	2.1	.1	.1
15	.2	4.7	8.4	*14	17	34	155	222	13	2.5	.1	.1
16	.6	4.7	*9.0	15	18	33	155	624	12	1.1	.1	.1
17	.6	5.1	9	14	18	34	132	609	9.9	.4	.1	.1
18	.6	6.1	7.4	14	15	36	117	507	6.4	.5	.1	.1
19	.6	5.8	8.0	14	9.4	35	132	630	6.4	.4	.1	.1
20	.5	6.4	8.0	14	11	33	120	750	1.9	.3	.1	*.1
21	.9	8.0	8.7	13	13	33	112	570	.6	.3	.1	.1
22	4.7	8.4	8.7	14	*14	33	128	388	.5	.2	.1	.1
23	3.8	9.9	8.7	14	15	33	135	312	.4	.1	.1	.1
24	2.9	9.4	8.7	14	15	21	148	262	1.1	.1	.1	.1
25	3.2	9.4	9.0	13	14	25	142	215	.6	.1	.1	.1
26	3.3	9.4	8.7	13	13	32	126	198	.4	.1	.1	.1
27	3.5	9.0	8.4	14	15	26	115	175	.2	.1	.1	.1
28	3.6	9.4	9.4	14	19	30	97	148	.2	.1	.1	.1
29	3.6	9.4	9.0	14	-	52	93	140	.2	.1	.1	.1
30	3.6	9.4	10	14	------	70	93	145	.2	.1	.1	.1
31	3.6	------	12	14	------	68	------	132	------	.1	.1	------
Total	42.7	185.3	304.2	401	434.4	1,047	3,514	9,420	839.3	28.3	3.1	3.0
Mean	1.38	6.18	9.81	12.9	15.5	33.8	117	304	28.0	0.91	0.1	0.1
Ac-ft	85	368	603	795	862	2,080	6,970	18,680	1,660	56	6.1	6.0

Calendar year 1954: Max 242 Min 0.1 Mean 31.3 Ac-ft 22,680
Water year 1954-55: Max 750 Min 0.1 Mean 44.4 Ac-ft 32,170

Peak discharge (base, 300 cfs).--May 8 (7:30 a.m.) 395 cfs (3.33 ft); May 16 (2 p.m.) 990 cfs (5.00 ft); May 20 (3 a.m.) 840 cfs (4.57 ft).

* Discharge measurement made on this day.

Note.--No gage-height record July 23 to Sept. 30, except staff-gage readings made July 27, Aug. 3, 10, 15, 17, 24, 31, Sept. 7, 14, 20, 21, 28; discharge interpolated.

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, 2½ miles downstream from abandoned Furnish Reservoir, and 11 miles downstream from Birch Creek.

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

Records available.--May 1903 to September 1955. Published as "above Furnish Reservoir" October 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 Sept. 30, 1916, staff gage at site 500 ft upstream at different datum. Oct. 1, 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.--52 years, 670 cfs (485,100 acre-ft per year).

Extremes.--Maximum discharge during year, 3,380 cfs May 20 (gage height, 6.55 ft); minimum, 47 cfs Sept. 27, 28.
1903-55: Maximum discharge, 20,000 cfs May 30, 1906 (gage height, about 15.0 ft, site and datum then in use, from floodmarks), from rating curve extended above 6,600 cfs; minimum, 12 cfs Aug. 10-12, 1908, Aug. 4, 1910.

Remarks.--Records good. Diversions above station for irrigation. Slight regulation by Furnish Reservoir, 1910-34 (capacity, 3,900 acre-ft prior to filling with silt). Flow regulated to some extent since 1927 by McKay Reservoir (see p. 30).

Revisions (water years).--WSP 794: 1906(M). Revised figures of discharge, in cubic feet per second, for the water years 1904-6, 1908-9, 1922, 1923, 1926, 1926, superseding those published in WSP 272, 370, 554, 574, 634, and 814, are given herein. Complete table of daily discharge is given for the water year 1905, but only revised discharges for other water years.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1903		1903-Con.		1908		1926-Con.	
Nov. 23	2,390	Dec. 15	457	Mar. 5	800	June 12	22
24	2,280	16	691			13	23
25	1,860	17	1,660	1909		14	31
26	1,660	18	1,390	Jan.1-18	†330	15	43
27	1,660	19	1,210			16	50
28	1,570	20	1,300	1922		19	51
29	1,480	21	1,660	Jan.1-31	†220	20	66
30	1,390	22	1,760	Dec.9-21	†70	21	66
Dec. 1	1,570	23	1,760			22	57
2	1,760	24	1,660	1926		23	50
3	1,480	25	1,480	June 1	105		
4	1,300	26	1,480	2	98	1936	
5	1,130	27	1,300	3	82	Feb. 21	174
6	899	28	1,050	4	70	22	201
7	691	29	827	5	58	23	671
8	628	30	691	6	51	24	652
9	567	31	628	7	45	25	532
10	510			8	38	26	484
11	510	1906		9	30	27	568
12	510	May 30	18,000	10	23	28	858
13	510	31	14,800	11	22	29	1,380
14	457						

† Average for period indicated.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
November 1903	-	2,570	123	827	49,200
December	-	1,760	457	1,080	66,400
Water year 1903-4	-	7,670	30	1,140	828,000
May 1906	-	18,000	225	1,510	92,800
Water year 1905-6	-	18,000	28	703	509,000
Calendar year 1906	-	18,000	28	812	588,000
March 1908	-	16,000	580	2,270	140,000
Water year 1907-8	-	16,000	12	577	419,000
Calendar year 1908	-	16,000	12	527	383,000
January 1909	-	3,060	-	767	47,200
Water year 1908-9	-	3,060	20	467	338,000
Calendar year 1909	-	3,490	20	567	410,000
January 1922	-	-	20	220	13,500
Water year 1921-22	-	6,590	31	855	619,000
December 1922	-	525	-	151	9,280
Calendar year 1922	-	6,590	31	733	530,000
Water year 1922-23	-	4,330	-	573	414,000
June 1926	-	105	22	47.6	2,830
Water year 1925-26	-	5,040	15	386	280,000
Calendar year 1926	-	5,040	15	429	310,000
February 1936	8,858	1,380	125	305	17,570
Water year 1935-36	193,120	5,550	27	528	383,100
Calendar year 1936	192,425	5,550	32	526	381,700

Umatilla River at Yoakum, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1904 to September 1905

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	95	95	315	450	565	1,360	505	450	156	24	28
2	65	95	95	315	400	630	1,940	450	450	110	24	28
3	65	95	95	275	355	630	1,840	505	450	110	24	28
4	65	95	95	275	315	630	1,840	700	450	110	24	28
5	65	95	95	275	315	630	1,840	925	450	110	24	28
6	65	95	95	275	275	630	1,840	925	450	82	24	28
7	65	95	95	275	275	630	1,840	925	450	82	24	28
8	65	95	95	240	240	565	1,840	*845	355	82	24	28
9	65	95	95	210	240	505	1,550	1,140	355	82	24	32
10	65	95	95	210	210	505	1,460	1,180	355	82	24	32
11	95	95	95	210	182	505	1,270	1,220	315	82	24	32
12	78	95	95	210	156	505	1,090	1,360	275	82	24	46
13	78	95	95	182	156	505	1,000	1,270	275	82	24	59
14	95	95	95	156	156	505	925	1,090	240	82	24	37
15	116	95	95	156	156	505	845	1,000	210	82	24	47
16	116	95	95	156	156	505	845	845	182	82	24	47
17	141	95	95	156	156	505	770	845	182	82	28	47
18	116	95	116	156	156	505	845	770	182	59	*28	47
19	116	95	116	156	275	505	925	700	156	59	28	47
20	116	95	141	182	210	505	925	630	132	59	28	47
21	116	95	141	182	182	565	925	630	132	59	28	47
22	116	95	141	210	156	700	925	565	132	59	28	47
23	95	95	141	240	182	770	925	565	400	47	28	47
24	95	95	141	450	315	1,270	925	630	240	47	28	47
25	95	95	141	770	450	1,360	925	630	210	37	28	47
26	95	95	141	770	505	1,740	845	630	182	37	28	73
27	95	95	141	700	505	2,040	630	565	182	37	28	90
28	95	95	141	700	505	1,840	630	565	182	28	28	59
29	95	95	170	565	-	1,640	565	505	182	28	28	59
30	95	95	235	505	------	1,360	505	505	*156	28	28	59
31	95	------	272	450	------	1,360	------	450	------	28	28	------
Total	2,804	2,850	3,793	9,927	7,634	25,615	34,590	24,070	8,362	2,192	804	1,319
Mean	90.5	95.0	122	320	273	826	1,150	776	279	70.7	25.9	44.0
Ac-ft	5,560	5,650	7,500	19,700	15,200	50,800	68,400	47,700	16,600	4,350	1,590	2,620

Calendar year 1904: Max 7,670 Min 30 Mean 993 Ac-ft 721,000
Water year 1904-5: Max 2,040 Min 24 Mean 340 Ac-ft 246,000
Calendar year 1905: Max 2,040 Min 24 Mean 360 Ac-ft 261,000

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*55	77	95	284	281	232	1,150	1,490	954	412	376	368
2	53	77	95	290	280	247	1,440	1,660	844	364	384	368
3	53	77	95	256	271	241	1,180	1,740	832	340	416	389
4	52	*72	95	211	256	232	946	1,650	902	324	412	364
5	52	72	95	182	241	193	778	2,070	994	344	412	356
6	55	74	*95	172	232	190	740	2,900	1,000	407	407	*348
7	55	72	93	158	226	208	1,190	2,750	994	452	384	364
8	53	74	93	142	446	318	1,970	2,860	960	*376	376	368
9	53	76	91	134	1,060	675	2,230	*2,560	934	348	380	360
10	55	74	91	134	725	790	*2,560	2,290	928	368	394	336
11	58	76	89	132	545	760	2,200	2,370	902	360	398	316
12	59	77	87	128	454	715	1,610	2,750	856	356	398	308
13	*66	79	87	126	394	630	1,770	2,400	778	389	398	324
14	69	87	89	126	340	540	1,670	1,820	659	407	398	360
15	66	91	91	*124	322	466	1,490	1,490	565	402	407	360
16	63	89	91	122	332	418	1,270	2,320	484	430	425	340
17	62	96	91	128	386	410	1,150	2,650	420	420	448	247
18	60	118	89	130	386	418	1,080	2,380	368	*412	443	200
19	62	126	98	124	332	446	1,040	2,490	328	438	438	122
20	62	128	91	122	312	434	934	3,130	308	434	434	70
21	63	118	91	122	280	410	904	3,100	348	425	434	62
22	86	*112	91	124	*265	394	1,350	2,490	443	420	430	60
23	87	104	91	126	253	402	1,620	2,020	448	412	425	58
24	80	102	89	158	241	394	1,530	1,840	425	412	407	54
25	72	104	89	223	232	394	1,390	1,390	416	398	376	52
26	74	104	87	274	217	378	1,300	1,240	425	416	380	48
27	76	102	86	268	214	358	1,190	1,180	416	279	380	47
28	76	100	96	265	214	*406	1,010	1,040	412	268	376	49
29	77	98	87	256	-	860	952	1,080	416	394	372	54
30	77	98	122	244	------	1,280	1,080	1,200	416	407	368	56
31	77	------	190	232	------	1,050	------	1,130	------	380	384	------
Total	2,008	2,754	2,960	5,517	9,737	14,889	40,724	63,280	19,175	11,994	12,440	6,808
Mean	64.8	91.8	95.5	178	348	480	1,357	2,041	639	387	401	227
Ac-ft	3,980	5,460	5,870	10,940	19,310	29,530	80,770	125,500	38,030	23,790	24,670	13,500

Calendar year 1954: Max 3,020 Min 51 Mean 429 Ac-ft 310,600
Water year 1954-55: Max 3,130 Min 47 Mean 527 Ac-ft 381,400

Peak discharge (base, 3,600 cfs).--No peak above base.
* Discharge measurement made on this day.

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 downstream from 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 1955 in reports of Geological Survey. April 1928 to September 1941 in reports of State engineer; October 1941 to September 1945 in files of State engineer.

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

Average discharge.--23 years (1928-30, 1931-32, 1933-41, 1942-55), 22.2 cfs (16,070 acre-ft per year).

Extremes.--Maximum discharge during year, 200 cfs May 17 (gage height, 3.04 ft); no flow Sept. 7, 8.
1928-55: Maximum gage height, 12.4 ft Feb 21, 1949, present datum (discharge not determined); no flow at times.

Remarks.--Records good. A few small diversions for irrigation above station. Water is diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River basin, for irrigation of 345 acres below station; at times almost 40 cfs is diverted.

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

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 29		Mar. 30 to Sept. 30			
1.0	1.9	0.6	0	1.3	10
1.1	3.3	.7	.05	1.5	20
1.3	8.5	.8	.2	1.7	33
1.5	19	.9	.9	2.0	58
2.0	54	1.0	2.2	2.5	117
2.4	104	1.1	4.0	2.9	176

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	4.2	4.6	9.0	7.0	8.5	91	76	50	8.4	1.4	0.1
2	2.3	4.2	5.1	8.2	7.6	9.5	71	77	44	8.0	1.3	.1
3	2.5	4.2	5.1	7.6	7.0	9.0	52	77	42	8.0	.9	.1
4	2.5	4.2	5.1	7.6	6.4	7.6	42	72	41	7.4	.7	.1
5	2.6	4.2	5.3	6.4	6.1	7.0	35	89	42	7.4	.4	.1
6	2.6	4.2	5.5	7.3	7.0	7.0	38	101	*40	8.0	.5	.1
7	2.7	4.2	5.5	6.7	6.7	8.5	61	95	39	*8.4	.3	0
8	2.7	4.2	5.5	6.4	9.5	9.0	90	92	36	6.7	.2	0
9	2.6	4.4	5.5	6.4	*12	24	99	80	32	6.1	.1	.1
10	2.6	4.4	5.5	6.7	8.5	33	*105	71	30	5.5	.1	.2
11	2.6	4.4	6.1	6.4	8.5	27	87	70	25	5.8	.1	.1
12	2.6	4.6	5.8	6.1	9.5	23	72	83	22	4.9	.1	.1
13	2.7	4.6	6.1	6.1	8.5	19	80	76	20	3.8	.2	.1
14	2.9	4.8	6.1	6.1	7.9	16	77	62	18	3.5	.2	.8
15	3.0	5.1	5.8	5.8	7.9	*15	71	60	16	2.4	.2	.6
16	3.0	5.5	*5.8	5.8	8.2	13	61	108	7.7	1.7	.2	.3
17	2.9	*5.1	5.8	5.8	8.5	12	64	164	8.4	1.4	.2	.4
18	2.9	5.5	4.4	5.8	7.6	12	64	130	8.4	1.2	.1	.3
19	2.9	5.5	5.3	5.8	8.0	14	64	117	9.4	.9	.1	.2
20	*2.9	5.5	5.1	5.5	8.5	12	60	112	9.4	1.0	.1	.2
21	3.0	5.5	5.1	*5.8	7.9	12	81	113	8.4	.9	.1	.2
22	3.5	5.5	5.3	6.1	7.9	12	*124	99	7.4	.8	.1	.2
23	3.5	5.5	5.5	6.4	7.6	13	140	84	7.0	.7	.1	.2
24	3.3	5.5	5.8	6.7	7.3	12	112	74	7.7	.6	.1	.2
25	3.5	5.3	5.3	7.0	7.3	12	96	65	7.0	.6	.1	.2
26	3.5	5.3	4.8	6.7	7.3	12	90	58	9.1	.7	.1	.2
27	3.7	5.3	4.0	6.7	7.6	12	77	57	6.4	1.2	.1	.2
28	3.7	5.5	5.5	6.4	7.6	13	68	53	4.6	1.7	.2	.5
29	4.0	5.5	6.4	6.4	-	102	65	50	6.7	2.1	*.2	.5
30	4.0	5.5	7.3	6.4	------	91	66	53	8.0	1.9	.2	.4
31	4.2	------	7.3	6.7	------	56	-----	54	------	1.4	.1	------
Total	93.6	147.4	171.3	202.8	221.4	633.1	2,303	2,572	612.6	113.1	8.8	6.8
Mean	3.02	4.91	5.53	6.54	7.91	20.4	76.8	83.0	20.4	3.65	0.28	0.23
Ac-ft	186	292	340	402	439	1,260	4,570	5,100	1,220	224	17	13

Calendar year 1954: Max 122 Min 0.5 Mean 16.6 Ac-ft 12,040
Water year 1954-55: Max 164 Min 0 Mean 19.4 Ac-ft 14,060

Peak discharge (base, 200 cfs).--May 17 (7 a.m.) 200 cfs (3.04 ft).
* Discharge measurement made on this day.

Principal diversions from Umatilla River between Yoakum and Umatilla gaging stations, Oreg.

The following canals divert water from Umatilla River between Yoakum and Umatilla: Furnish Canal, from right bank of Umatilla River in SW¼SW¼ sec. 31, T. 3 N., R. 30 E. (revised). 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 Yoakum 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 1955; records for some of the canals published separately prior to 1926.

Revisions.--Revised figures of discharge, in cubic feet per second, for Maxwell Canal near Hermiston (water year 1921) and West Division main canal near Umatilla (water year 1923), superseding figures published in WSP 534 and 574, respectively, are given herewith:

Maxwell Canal near Hermiston

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1921		1921-Con.		1921-Con.		1921-Con.	
Mar. 23	23	Apr. 2	34	Apr. 12	64	Apr. 23	78
24	23	3	34	13	77	24	74
25	23	4	39	14	81	25	66
26	12	5	55	15	80	26	80
27	12	6	57	16	79	27	84
28	12	7	57	17	79	28	84
29	12	8	57	18	79	29	84
30	12	9	57	19	79	30	84
31	14	10	57	20	79		
Apr. 1	34	11	57	21	79		

Month	Maximum	Minimum	Mean	Runoff in acre-feet
March 1921.....	28	12	19.5	541
April.....	86	34	67.8	4,030

West Division main canal near Umatilla

1923		1923-Con.	
Apr. 1.....	28	Apr. 6.....	69
2.....	49	7.....	69
3.....	61	8.....	69
4.....	60	9.....	71
5.....	57	10.....	71

Month	Maximum	Minimum	Mean	Runoff in acre-feet
April 1923.....	147	28	102	6,070
Water year 1922-23..	156	0	89.6	64,900

Diversions, in acre-feet, water year October 1954 to September 1955

Month	Furnish Canal	Umatilla project feed canal	Western Land Canal	Allen Canal	Maxwell Canal	West Division main canal
October.....	0	0	1,590	-	1,880	7,450
November.....	0	2,140	-	-	0	0
December.....	0	5,120	-	-	0	0
January.....	0	9,710	-	-	0	0
February.....	0	12,210	-	-	0	0
March.....	1,280	13,480	-	-	849	1,900
April.....	5,810	13,270	12,390	744	4,740	10,560
May.....	7,600	13,560	14,520	648	6,300	12,870
June.....	8,800	6,810	14,500	795	4,570	11,890
July.....	8,870	0	13,830	713	3,540	12,360
August.....	9,160	0	14,300	711	2,530	11,750
September.....	4,420	0	8,920	435	2,910	12,840
Water year 1954-55.....	45,940	76,300	-	-	27,320	81,620

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.

Umatilla River near Umatilla, Oreg.

Location.--Lat 45°54'20", long 119°19'40", in NW¼ sec. 21, T. 5 N., R. 28 E., on left bank 1½ miles downstream from West Division main canal of Umatilla project, 1¾ miles southeast of Umatilla, and 2 miles upstream from mouth.

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

Records available.--October 1903 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 330.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Jan. 26, 1931, staff gage at same site and datum.

Average discharge.--28 years (1927-55), 431 cfs (312,000 acre-ft per year). Years prior to 1927 not included in computation of average discharge, due to increased diversion since 1927.

Extremes.--Maximum discharge during year, 2,900 cfs May 21 (gage height, 5.01 ft); minimum, 1.1 cfs Oct. 8, 9.

1903-55: Maximum discharge, 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 of lands above and below station; Brownell Canal diverts below station. Diversions since 1908 to Cold Springs Reservoir, an off-channel reservoir (capacity, 50,000 acre-ft). Regulation since 1927 by McKay Reservoir (see p. 30).

Revisions.--WSP 794: Drainage area. Revised figures of discharge for the water years 1909, 1911, 1914, 1928, and 1935, superseding those published in WSP 272, 312, 394, 674 and 794, are given herein. Complete daily table is given for the water year 1928, but only revised figures for other water years.

Date	Discharge	Date	Discharge	Date	Discharge
1909		1909-Con.		1914-Con.	
Jan. 10	45	Feb. 13	250	Feb. 16	640
11	45	14	250	17	640
12	45	15	300	18	600
13	45	17	2,000		
14	45			1935	
15	50	1911		Jan. 19	362
16	150	Jan. 13-27	†150	20	385
17	700			21	385
Feb. 7	300	1914		22	355
8	300	Feb. 11	350	23	334
9	280	12	500	24	327
10	260	13	600	25	348
11	250	14	700	26	478
12	250	15	700		

† Average for period indicated.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
January 1909	-	4,910	45	860	52,900
February	-	2,000	250	556	30,900
Water year 1908-9	-	4,910	.4	323	234,000
Calendar year 1909	-	4,910	.4	422	306,000
January 1911	-	-	68	121	7,440
Water year 1910-11	-	2,130	34	274	198,000
Calendar year 1911	-	2,130	42	262	190,000
February 1914	-	2,790	305	853	47,400
Water year 1913-14	-	3,140	90	459	332,000
Calendar year 1914	-	3,140	8	440	318,000
January 1935	10,702	604	170	345	21,230
Water year 1934-35	76,324	2,550	7	209	151,400
Calendar year 1935	66,496	2,550	8	182	131,900

Umatilla River near Umatilla, Oreg.--Continued

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	519	125	2,700	159	1,810	194	4,200	1,500	13	45	15	15
2	625	122	2,370	157	1,970	176	4,600	1,290	13	20	15	15
3	820	119	2,530	155	2,370	159	3,800	1,290	16	18	15	15
4	820	114	1,970	154	2,050	164	3,230	1,220	18	16	15	15
5	1,230	118	1,890	150	1,970	160	2,870	680	18	16	13	*15
6	1,300	136	1,500	1,730	1,890	157	2,700	680	20	16	14	150
7	1,230	154	1,290	3,050	2,050	154	1,890	680	20	15	14	159
8	950	471	1,080	3,230	1,890	152	1,890	650	20	16	14	154
9	950	495	950	3,410	1,730	151	1,890	620	30	15	14	159
10	950	487	835	2,370	1,500	150	1,730	590	30	16	14	78
11	885	495	780	2,530	1,430	2,210	1,730	410	19	16	14	30
12	715	503	730	3,050	1,080	*4,200	1,660	245	19	15	14	26
13	670	519	680	3,410	*730	3,410	1,890	188	20	17	14	23
14	625	527	635	5,240	835	2,370	2,700	75	20	16	14	23
15	439	527	590	3,800	780	2,210	2,870	23	19	15	14	21
16	188	535	635	2,370	730	2,050	3,230	21	18	15	14	19
17	150	1,370	680	2,370	680	1,970	2,870	18	18	16	14	17
18	174	1,740	500	2,050	680	2,050	2,370	14	18	16	14	17
19	164	1,510	500	1,890	500	2,050	2,290	14	18	16	15	16
20	164	1,440	482	1,730	383	2,210	2,210	13	20	16	15	16
21	150	1,440	475	1,500	290	2,210	2,050	13	26	16	15	16
22	122	1,370	468	1,430	282	2,210	1,730	13	31	15	15	15
23	122	1,370	461	1,430	338	2,370	1,580	13	31	15	15	15
24	114	1,810	455	1,220	320	2,370	1,890	13	23	15	15	15
25	112	3,680	350	1,220	303	*2,530	2,530	13	33	15	15	15
26	112	4,200	245	1,010	285	2,370	2,210	13	33	15	15	15
27	110	3,800	240	890	268	2,210	2,050	13	18	15	15	15
28	118	3,410	234	780	234	2,050	1,890	13	18	15	15	15
29	128	3,410	214	835	214	2,700	1,890	13	164	14	15	15
30	125	3,050	194	2,700	-	2,700	1,730	13	188	15	15	15
31	128	-	174	3,050	-	3,050	-	13	-	15	15	-
Total	14,909	39,047	26,837	59,070	29,592	53,117	72,170	10,364	952	516	450	1,134
Mean	481	1,300	866	1,910	1,020	1,710	2,410	334	31.7	16.6	14.5	37.8
Ac-ft	29,600	77,400	53,200	117,000	58,700	105,000	143,000	20,500	1,890	1,020	892	2,250

Calendar year 1927: Max 4,200 Min 12 Mean 632 Ac-ft 458,000
Water year 1927-28: Max 5,240 Min 13 Mean 842 Ac-ft 610,000
Calendar year 1928: Max 5,240 Min 13 Mean 649 Ac-ft 470,000

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	184	198	128	139	124	104	382	647	402	18	24	24
2	180	193	128	184	151	107	730	992	282	18	17	32
3	184	193	128	193	159	107	692	968	230	27	16	32
4	65	193	128	175	147	100	525	968	235	22	15	38
5	9.7	193	128	151	132	107	362	1,070	312	16	15	32
6	8.0	193	135	139	128	110	163	2,000	362	37	20	26
7	1.9	188	132	132	124	100	250	2,220	282	*43	24	32
8	1.2	188	132	128	121	97	908	2,140	276	61	27	34
9	2.5	193	132	128	671	292	1,320	2,080	216	68	28	43
10	3.8	193	132	124	683	588	1,640	1,670	198	52	35	43
11	3.8	193	132	121	480	572	1,840	1,600	188	55	38	55
12	3.8	198	132	121	362	518	1,130	1,900	139	52	38	52
13	3.8	193	132	121	300	423	992	1,860	114	35	40	59
14	3.8	198	132	121	235	324	1,050	1,270	57	16	45	76
15	9.7	206	132	121	202	235	944	1,660	22	12	52	76
16	14	206	*132	118	188	171	740	2,140	14	9.3	43	97
17	6.8	202	135	118	225	*128	596	2,520	14	9.3	*43	88
18	6.2	159	135	118	245	97	525	2,160	12	13	38	76
19	6.2	143	135	114	225	41	437	1,980	10	12	35	*59
20	6.2	143	135	*114	188	32	*336	2,460	10	13	32	46
21	7.7	193	135	114	171	20	260	2,700	8.6	13	45	50
22	9.0	220	132	114	151	8.3	495	2,200	7.4	16	32	43
23	12	180	132	118	135	7.7	1,020	1,590	8.0	14	27	40
24	45	147	128	118	121	7.7	980	1,120	8.0	14	29	35
25	42	139	128	118	114	7.4	865	854	8.3	14	34	32
26	37	135	128	124	114	7.4	800	588	8.6	17	34	26
27	42	132	128	175	114	7.4	720	532	12	38	37	24
28	94	132	128	143	110	7.1	572	458	10	27	32	22
29	193	132	128	139	-	5.4	437	423	17	40	208	18
30	193	132	132	135	-	497	395	502	16	38	238	19
31	*198	-	132	128	-	510	-	580	-	34	54	-
Total	1,577.1	5,308	4,066	4,106	6,120	5,338.4	22,106	45,852	3,478.9	853.6	1,395	1,329
Mean	50.9	177	131	132	219	172	737	1,479	116	27.5	45.0	44.3
Ac-ft	3,130	10,530	8,060	8,140	12,140	10,590	43,850	90,950	6,900	1,690	2,770	2,640

Calendar year 1954: Max 2,080 Min 12 Mean 241 Ac-ft 174,800
Water year 1954-55: Max 2,700 Min 1.2 Mean 278 Ac-ft 201,400

Peak discharge (base, 2,800 cfs).--May 21 (4:30 p.m.) 2,900 cfs (5.01 ft).
* Discharge measurement made on this day.

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 1955.

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, 167 cfs May 17 (gage height, 3.07 ft); no flow for many days in August and September.
1951-55: Maximum discharge, 359 cfs Mar. 25, 1953 (gage height, 4.17 ft), from rating curve extended above 100 cfs by logarithmic plotting; no flow at times.
Maximum discharge known, about 36,000 cfs June 14, 1903, by slope-area method.

Remarks.--Records good except those for periods of ice effect, 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 table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	0	1.3	14
.8	.2	1.7	36
.9	1.7	2.5	102
1.0	3.7	3.0	158
1.1	6.5		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	4.4	2.7	6.5	5.9	5.6	47	39	37	11	0.4	0
2	1.5	4.4	3.7	5.3	5.6	5.9	39	41	32	10	.4	0
3	1.9	4.2	3.9	b3.6	4.7	5.3	33	42	30	8.4	.3	0
4	1.7	*3.9	3.7	b4.0	4.2	b4.6	30	42	32	7.7	.4	0
5	1.7	3.7	3.7	5.3	5.9	b4.4	27	49	34	7.4	.4	0
6	1.9	3.7	3.7	4.4	5.0	6.5	26	59	37	*8.7	.3	0
7	1.9	3.7	3.9	3.9	8.7	7.1	32	56	34	8.0	.2	0
8	1.7	3.5	3.7	4.2	10	13	40	58	32	7.1	.2	0
9	1.7	3.5	3.7	4.2	9.0	18	46	50	31	7.1	.2	0
10	1.7	3.5	3.9	4.2	b7.5	14	53	47	25	8.0	.2	0
11	1.9	3.7	3.3	4.2	b7.0	14	44	49	21	7.7	.2	0
12	2.3	3.9	3.3	4.2	7.4	12	40	50	20	7.1	.1	0
13	2.5	5.0	3.9	4.2	6.5	10	45	46	16	5.9	.1	0
14	2.9	4.4	3.7	4.2	6.5	9.6	43	38	13	5.3	.1	.1
15	3.1	4.2	3.7	4.2	6.2	9.0	40	44	14	4.7	.1	.1
16	2.9	4.2	3.1	4.2	6.5	8.1	37	130	12	3.1	.1	.1
17	2.7	5.0	*b2.8	4.2	b6.5	*9.0	35	147	7.7	.5	*.1	.1
18	2.7	5.0	b2.7	3.9	b6.0	8.0	37	120	5.3	1.0	0	.1
19	2.5	5.3	b3.2	3.7	b6.5	.8.0	39	120	5.6	1.9	0	*0
20	2.3	4.7	3.7	*4.2	7.1	7.1	*40	115	4.4	1.7	0	0
21	2.5	4.4	3.7	3.9	6.5	8.4	45	104	4.4	1.3	0	0
22	3.7	4.2	4.2	4.2	6.2	8.4	77	88	3.7	.7	0	0
23	3.7	4.2	4.2	4.4	5.9	7.7	89	72	4.4	1.0	0	0
24	3.3	4.2	4.2	4.4	5.6	8.4	76	60	3.1	.8	0	0
25	3.1	3.9	b3.4	4.4	4.4	.8.0	64	50	2.3	.4	0	.1
26	3.5	3.7	b3.2	4.4	5.3	7.7	58	46	3.9	.5	0	0
27	3.3	3.7	b3.8	4.2	5.0	8.0	48	42	6.8	1.3	0	0
28	3.3	3.9	4.2	4.2	4.4	20	42	38	8.4	1.2	0	0
29	3.3	3.9	4.2	4.4	-	46	39	37	10	1.2	0	0
30	3.7	3.5	6.2	4.4	------	40	37	38	9.6	1.0	0	0
31	4.4	------	6.8	4.7	------	34	------	*42	------	.7	0	------
Total	80.6	123.5	118.1	134.4	176.0	375.8	1,348	1,959	499.6	132.4	3.8	0.6
Mean	2.60	4.12	3.81	4.34	6.29	12.1	44.9	63.2	16.7	4.27	0.12	0.02
Ac-ft	160	245	234	267	349	745	2,670	3,890	991	263	7.5	1.2

Calendar year 1954: Max 148 Min 0.1 Mean 12.4 Ac-ft 9,010
Water year 1954-55: Max 147 Min 0 Mean 13.6 Ac-ft 9,820

Peak discharge (base, 75 cfs).--Apr. 22 (8:30 p.m.) 97 cfs (2.45 ft); May 17 (1 a.m.) 167 cfs (3.07 ft).
* Discharge measurement or observation of no flow made on this day.
b Stage-discharge relation affected by ice.

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 1955.

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

Average discharge.--25 years, 12.4 cfs (8,980 acre-ft per year).

Extremes.--Maximum discharge during year, 138 cfs June 12 (gage height, 2.27 ft); minimum, 1.0 cfs Mar. 20 (gage height, 1.12 ft).
1930-55: Maximum discharge, 172 cfs June 8, 1948; maximum gage height, 2.44 ft June 9, 1933; minimum discharge, that of Mar. 20, 1955.

Remarks.--Records good. No diversion above station; some natural regulation by Strawberry Lake.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 12				June 13 to Sept. 30			
1.1	0.6	1.5	18	1.1	1.0	1.5	18
1.2	3.0	1.7	35	1.2	3.8	1.7	35
1.3	6.6	1.9	62	1.3	7.7	1.9	62
1.4	12	2.3	145	1.4	12	2.3	145

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.7	2.4	2.2	2.2	a1.9	1.4	1.4	2.2	28	37	12	4.8
2	3.7	2.4	2.2	2.2	a1.9	1.4	1.4	2.4	28	33	12	4.5
3	3.4	2.4	2.2	b2.2	a1.9	1.4	1.4	2.4	30	32	12	4.2
4	3.4	2.4	2.2	b2.2	b1.9	b1.4	1.4	2.7	34	30	12	4.2
5	3.4	2.4	2.2	2.2	1.9	b1.4	1.4	*3.4	41	27	11	3.8
6	3.4	2.4	2.2	2.2	1.9	1.7	1.4	4.8	52	26	11	3.8
7	3.4	2.2	2.2	2.2	1.9	1.4	1.4	5.8	73	25	11	3.8
8	3.0	2.2	2.2	2.2	1.9	*1.4	1.4	7.0	88	23	10	3.8
9	3.0	2.7	2.2	2.2	b1.9	1.4	1.7	7.4	102	24	10	3.8
10	3.0	2.4	2.2	2.2	b1.9	1.4	1.9	7.9	*113	23	10	3.4
11	3.0	2.4	b2.2	2.2	b1.9	1.4	1.9	9.9	118	22	9.5	3.4
12	3.0	2.7	2.2	*2.2	1.9	1.2	1.9	12	124	22	9.0	3.4
13	*3.0	2.4	2.2	2.2	1.9	1.2	1.9	12	124	22	9.0	3.4
14	3.0	2.4	2.2	1.9	1.9	1.2	1.9	11	120	22	8.6	4.2
15	3.0	3.0	2.2	1.9	*1.9	1.2	1.9	10	100	21	8.2	3.8
16	3.0	2.7	b2.2	1.9	1.9	b1.2	1.9	9.9	78	21	7.7	4.5
17	3.0	2.4	b2.2	1.9	1.7	1.2	1.9	9.4	73	20	7.7	4.2
18	3.0	2.4	b2.2	1.9	b1.7	1.2	1.9	9.4	67	19	7.2	3.8
19	3.0	2.4	2.4	1.9	b1.7	1.2	1.9	11	64	18	7.2	3.8
20	3.0	2.4	2.4	a1.9	b1.7	b1.2	1.9	18	64	18	6.8	3.8
21	2.7	2.4	2.4	a1.9	b1.8	1.2	2.2	26	69	18	6.8	3.8
22	2.7	2.4	2.2	a1.9	1.9	1.2	2.2	26	75	18	6.4	3.8
23	2.7	*2.4	2.2	a1.9	1.7	1.2	2.2	23	73	17	6.4	3.4
24	2.7	2.4	2.2	a1.9	1.4	1.2	2.2	22	67	16	6.0	3.4
25	2.4	2.4	2.2	a1.9	1.2	1.2	2.2	22	59	16	6.0	3.4
26	2.4	2.4	b2.2	a1.9	1.2	1.4	2.2	23	52	15	6.0	3.4
27	2.4	2.4	b2.2	a1.9	1.2	1.4	2.2	22	47	15	5.6	3.1
28	2.4	2.4	b2.2	a1.9	1.2	1.4	2.2	23	47	*14	5.6	3.4
29	2.4	2.2	2.2	a1.9	-	1.4	2.2	26	46	14	5.2	3.1
30	2.4	b2.2	2.2	a1.9	------	1.4	2.2	29	43	13	*5.2	3.4
31	2.4	-----	2.2	a1.9	-----	1.4	-----	30	------	13	4.8	------
Total	91.0	72.7	68.8	62.8	48.8	40.9	55.8	430.6	2,099	654	255.9	112.6
Mean	2.94	2.42	2.22	2.03	1.74	1.32	1.86	13.9	70.0	21.1	8.25	3.75
Cfsm	0.408	0.336	0.308	0.282	0.242	0.183	0.258	1.93	9.72	2.93	1.15	0.521
In.	0.47	0.38	0.36	0.32	0.25	0.21	0.29	2.22	10.84	3.38	1.32	0.58
Ac-ft	180	144	136	125	97	81	111	854	4,160	1,300	508	223

Calendar year 1954: Max 100 Min 2.2 Mean 14.8 Cfsm 2.06 In. 27.95 Ac-ft 10,720
Water year 1954-55: Max 124 Min 1.2 Mean 10.9 Cfsm 1.51 In. 20.62 Ac-ft 7,920

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and weather records.
b Stage-discharge relation affected by ice.

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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 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 1955.

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 600 ft downstream 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.--28 years (1925-53), 113 cfs, including flow of Prairie power canal (81,810 acre-ft per year).

Extremes.--Maximum discharge during year, 386 cfs June 12 (gage height, 2.23 ft); minimum, 6.8 cfs Aug. 25, 26.
1925-55: Maximum discharge, 2,100 cfs Mar. 25, 1952 (gage height, 6.27 ft, from floodmark), from rating curve extended above 450 cfs; minimum, 2 cfs Dec. 8, 21, 22, 1932, Aug. 10, 1934.

Remarks.--Records good. Diversions above station for irrigation. Prairie power canal (not used for power since February 1952) diverts water above station in SE¼ sec. 7, T. 13 S., R. 34 E.; water is used for irrigation below former canal gaging station in sec. 11, T. 13 S., R. 33 E, where the following discharge measurements, in cubic feet per second, were made in the 1955 water year.

Oct. 13	1.76	May 5	5.70
Nov. 23	3.24	July 28	10.8
Mar. 8	8.86	Aug. 30	2.03

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 3		Jan. 4 to Sept. 30			
0.9	47	0.4	4.0	1.3	107
1.2	90	.5	10	1.7	205
		.7	25	2.2	375
		.9	45		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	69	63	83	64	64	138	127	127	121	64	14
2	67	69	70	73	62	64	111	121	119	111	62	14
3	65	69	70	63	62	62	98	103	111	107	62	11
4	58	67	73	75	60	60	89	121	123	107	52	13
5	55	67	72	79	68	54	86	*145	143	98	57	15
6	58	67	70	72	68	73	94	188	171	98	55	17
7	62	67	67	65	64	72	105	202	214	98	52	19
8	62	67	65	70	66	83	113	211	260	87	44	19
9	65	69	67	79	64	*84	123	182	302	96	42	19
10	63	80	67	72	55	84	138	155	322	100	36	23
11	65	72	62	67	73	91	119	153	340	86	27	25
12	70	78	66	*70	72	98	109	171	347	78	19	24
13	*72	73	67	70	64	86	121	163	330	68	21	23
14	72	72	67	67	62	79	119	143	298	60	26	62
15	72	78	67	67	*66	73	113	166	*277	48	24	66
16	69	78	55	67	67	72	119	171	232	49	20	94
17	67	75	58	70	66	75	171	141	199	41	26	89
18	69	70	62	64	64	81	166	132	171	38	25	72
19	69	70	65	65	60	79	143	155	153	37	21	66
20	67	70	69	68	70	68	148	252	132	37	18	61
21	73	70	67	64	70	75	185	294	113	38	15	55
22	73	69	67	64	67	81	223	270	105	48	13	54
23	72	70	67	64	66	79	188	217	111	61	11	52
24	72	*70	67	62	64	78	153	166	119	57	9.3	49
25	73	70	65	62	64	78	143	138	111	54	7.4	53
26	72	70	65	66	64	86	143	143	127	57	6.8	49
27	72	70	55	60	64	91	123	132	121	62	8.0	49
28	70	69	65	70	62	109	117	107	160	*67	11	52
29	69	69	78	70	-	141	111	119	182	68	11	52
30	67	58	82	64	------	107	113	132	132	70	*11	49
31	69	------	88	64	------	107	-----	134	------	66	13	------
Total	2,087	2,112	2,088	2,116	1,818	2,534	3,922	5,054	5,652	2,213	869.5	1,260
Mean	67.3	70.4	67.4	68.4	64.9	81.7	131	163	188	71.4	28.0	42.0
Ac-ft	4,140	4,190	4,140	4,200	3,610	5,030	7,780	10,020	11,210	4,390	1,720	2,500

Calendar year 1954: Max 362 Min 25 Mean 107 Ac-ft 77,690
Water year 1954-55: Max 347 Min 6.8 Mean 86.9 Ac-ft 62,930

Peak discharge (base, 240 cfs).--Apr. 22 (7 p.m.) 305 cfs (2.00 ft); May 21 (8:30 a.m.) 316 cfs (2.03 ft); June 12 (8 a.m.) 386 cfs (2.23 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 downstream from Smoky Creek and 3 miles south of Dayville.

Drainage area.--590 sq mi, approximately.

Records available.--October 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,420 ft (by barometer).

Extremes.--Maximum discharge during year, 650 cfs Apr. 8 (gage height, 3.50 ft); minimum, 15 cfs Sept. 7.
1951-55: Maximum discharge, 3,230 cfs Mar. 25, 1952 (gage height, 6.98 ft), from rating curve extended above 1,900 cfs on basis of slope-area determination of peak flow; minimum, that of Sept. 7, 1955.
Flood in May 1948 reached discharge of 3,250 cfs, from slope-area determination.

Remarks.--Records excellent except those for period of shifting control, which are good. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating table, water year 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.6	14	1.8	130
.7	19	2.5	275
.9	31	3.0	430
1.3	65	3.5	650

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	37	32	57	47	45	255	309	199	73	26	16
2	29	38	46	47	42	49	171	315	189	72	25	16
3	29	38	46	34	39	49	128	315	183	74	24	16
4	29	38	44	34	35	45	115	321	181	72	24	16
5	30	38	44	40	34	37	104	*370	175	74	23	16
6	30	38	45	39	42	40	142	466	167	73	23	16
7	30	37	46	34	40	55	291	498	154	73	24	16
8	31	37	43	34	57	*83	374	518	144	67	24	16
9	31	40	44	37	70	97	370	470	130	64	23	16
10	32	42	43	39	43	88	384	438	118	66	23	16
11	33	43	34	38	40	92	272	446	111	66	22	16
12	*34	45	41	*35	50	89	225	442	105	61	21	16
13	36	45	47	37	47	77	238	406	98	55	21	16
14	35	47	42	37	51	66	242	348	92	52	21	19
15	35	50	43	37	*53	56	228	333	92	48	20	22
16	34	49	29	35	56	56	223	370	*87	49	19	26
17	34	49	29	32	60	60	288	402	86	47	20	26
18	33	47	33	39	44	60	278	374	81	44	20	24
19	34	45	34	31	38	65	221	402	78	40	18	23
20	36	44	35	34	48	56	209	458	75	36	18	23
21	35	44	37	39	44	61	255	486	69	34	18	22
22	36	44	37	38	50	62	351	430	68	32	18	23
23	35	*44	38	38	46	63	309	384	67	32	18	23
24	36	44	40	37	45	65	300	342	66	34	18	22
25	36	44	35	38	46	66	295	306	65	32	16	22
26	36	44	37	33	46	70	306	288	66	31	16	22
27	36	44	38	30	45	78	288	270	65	*32	17	22
28	36	44	33	32	44	121	252	245	69	30	16	23
29	36	43	40	38	-	211	260	232	77	29	16	23
30	37	34	49	41	- - - -	144	268	225	77	28	*17	23
31	37	- - -	61	42	- - - - -	124	- - - - -	213	- - - - - -	27	17	- - - - - -
Total	1,039	1,276	1,245	1,156	1,300	2,330	7,620	11,422	3,232	1,547	626	596
Mean	33.5	42.5	40.2	37.3	46.4	75.2	254	368	108	49.9	20.2	19.9
Ac-ft	2,060	2,530	2,470	2,290	2,580	4,620	15,110	22,660	6,410	3,070	1,240	1,180

Calendar year 1954: Max 705 Min 23 Mean 136 Ac-ft 98,130
Water year 1954-55: Max 518 Min 16 Mean 91.5 Ac-ft 66,220

Peak discharge (base, 1,000 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--Shifting-control method used Dec. 2 to Mar. 8.

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.--1,680 sq mi, approximately.

Records available.--April 1926 to September 1955.

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 at datum 0.50 ft higher.

Average discharge.--29 years, 442 cfs (320,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,640 cfs May 21 (gage height, 6.92 ft); minimum, 15 cfs Sept. 11.
1926-55: Maximum discharge, 6,570 cfs Mar. 26, 1952 (gage height, 13.42 ft); 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 good except those for periods of ice effect or no gage-height record, which are fair. Many diversions above station for irrigation.

Revisions (water years).--WSP 794: 1932(M). WSP 1218: 1950. WSP 1348: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 8-16, Sept. 10-13)

0.9	14	3.0	275
1.1	24	4.0	520
1.3	37	5.0	840
1.6	61	6.0	1,230
2.0	104	7.0	1,680
2.5	180		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	117	153	170	a230	235	194	547	760	710	360	26	22
2	123	158	185	a210	229	203	562	798	649	323	24	20
3	123	160	200	a200	222	205	452	788	610	301	33	21
4	128	157	200	a200	209	196	402	794	610	285	26	21
5	125	163	200	a220	193	173	360	*900	640	291	24	20
6	128	161	200	a210	218	168	378	1,190	704	281	26	20
7	127	150	202	a200	220	207	544	1,300	752	261	26	19
8	124	150	194	a200	229	*251	718	1,360	805	235	26	17
9	125	158	191	a210	307	295	805	1,280	850	218	26	16
10	134	170	191	a200	224	297	864	1,160	903	216	27	16
11	134	185	184	*b210	193	307	770	1,140	892	222	26	16
12	*144	191	178	b220	220	319	664	1,210	861	200	25	16
13	158	205	194	220	220	315	643	*1,180	840	191	26	16
14	158	203	196	216	214	277	652	1,030	777	165	25	18
15	161	211	196	214	*220	249	628	946	*732	139	24	21
16	158	216	180	211	226	237	601	1,040	625	121	26	24
17	158	218	155	205	233	243	704	1,050	550	94	25	29
18	153	212	161	207	207	247	822	974	490	81	28	31
19	147	205	b160	198	180	261	710	1,030	448	76	29	35
20	152	202	b180	200	191	243	664	1,240	412	64	28	36
21	152	200	b190	212	205	245	700	1,560	360	46	27	37
22	161	198	b190	212	216	251	882	1,540	311	43	28	39
23	166	*198	191	214	209	257	974	1,350	297	46	26	43
24	166	200	193	214	203	261	875	1,160	289	46	27	45
25	165	200	189	214	202	263	840	994	269	44	27	41
26	161	207	184	212	202	259	840	889	269	41	27	40
27	165	200	a190	203	200	281	770	868	281	*42	29	40
28	165	198	a180	202	196	333	707	780	299	42	28	42
29	165	200	a200	211	-	538	694	728	405	40	26	52
30	165	189	a230	224	----	502	694	742	408	39	25	68
31	160	---	a250	229	---	402	-----	738	------	29	*24	------
Total	4,568	5,618	5,904	6,528	6,023	8,479	20,466	32,519	17,048	4,582	820	881
Mean	147	187	190	211	215	274	682	1,049	568	148	26.5	29.4
Ac-ft	9,060	11,140	11,710	12,950	11,950	16,820	40,590	64,500	33,810	9,090	1,630	1,750

Calendar year 1954: Max 1,680 Min 26 Mean 436 Ac-ft 315,800
Water year 1954-55: Max 1,560 Min 16 Mean 311 Ac-ft 225,000

Peak discharge (base, 1,300 cfs).--May 8 (11 a.m.) 1,410 cfs (6.44 ft); May 21 (6 p.m.) 1,640 cfs (6.92 ft).
* 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 other stations in John Day River basin.
b Stage-discharge relation affected by ice.

Desolation Creek near Dale, Oreg.

Location.--Lat 44°59'20", long 118°55'10", in SW¼ sec. 6, T. 7 S., R. 32 E., on right bank three-quarters of a mile upstream from mouth and 1½ miles east of Dale.

Drainage area.--108 sq mi.

Records available.--July 1915 to September 1917 (fragmentary gage heights and discharge measurements only), September 1949 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,906.99 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. July 1915 to September 1917 at site three-quarters of a mile downstream at different datum. Sept. 14, 1949, to Oct. 12, 1951, at site 80 ft downstream at datum 1.97 ft lower.

Average discharge.--6 years (1949-55), 88.9 cfs (64,360 acre-ft per year).

Extremes.--Maximum discharge during year, 666 cfs June 10 (gage height, 4.34 ft); minimum, 2.5 cfs Dec. 1, result of freezeup.
1949-55: Maximum discharge, 850 cfs May 19, 1953 (gage height, 4.80 ft); maximum gage height, 4.89 ft May 8, 1952; minimum discharge, that of Dec. 1, 1954.

Remarks.--Records good except those for periods of ice effect, which are fair. Some flow diverted from headwaters into Olive Lake in North Fork John Day River basin, under water right for 25 cfs. No regulation. Records of water temperatures for the water year 1955 are given in WSP 1403.

Revisions.--WSP 1348: Drainage area.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 11				May 12 to Sept. 30			
0.3	3.5	1.7	52	0.5	5.9	2.5	135
.5	5.3	2.0	76	.7	8.4	3.0	230
.7	8.0	2.5	141	.9	12	3.5	370
.9	13	3.0	237	1.2	22	4.0	535
1.2	23			1.6	44	4.5	730
				2.0	75		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	8.4	4.7	18	9.4	9.2	32	70	258	112	22	*7.0
2	8.6	8.6	b7	14	9.2	9.2	25	61	242	100	20	6.9
3	8.6	9.0	b9	b9	9.0	9.0	21	60	275	90	19	6.7
4	8.4	8.4	b10	b8.5	7.4	8.6	19	65	310	90	18	6.7
5	8.2	9.4	b11	b9.5	9.2	b7	*18	90	379	93	17	6.6
6	8.2	9.2	b10	9.8	9.0	9.4	30	107	427	100	16	6.5
7	8.0	9.0	9.4	9.4	9.6	9.6	48	121	496	95	15	6.4
8	7.6	8.6	8.6	9.2	11	12	64	143	546	82	15	6.4
9	7.6	9.8	b10	9.0	10	*13	69	136	598	80	14	6.5
10	7.7	20	b9	9.0	7.2	13	77	150	614	87	13	6.4
11	*8.8	16	b7	9.0	b8	14	60	201	586	77	12	6.3
12	13	18	b10	8.8	b9.5	13	52	*232	556	70	12	6.1
13	14	20	b12	*9.0	b9.5	11	58	203	468	65	11	6.1
14	12	16	12	9.0	9.4	11	54	147	376	64	11	9.0
15	10	18	12	9.0	9.6	11	45	132	328	60	11	22
16	10	22	b9	9.0	10	b9	44	135	289	57	11	15
17	9.8	19	b10	9.0	11	11	44	136	*260	51	10	21
18	9.4	17	b9.5	8.8	9.2	12	40	147	245	47	9.8	13
19	9.6	16	b9.5	8.0	b8	12	35	212	238	43	9.5	11
20	14	14	b12	8.6	b8.5	10	32	355	238	40	9.2	9.5
21	13	13	b11	8.6	*8.8	11	42	421	242	37	9.0	8.9
22	12	12	*b13	8.6	9.2	12	68	367	225	40	8.9	8.7
23	12	12	b12	8.8	9.2	11	63	319	194	50	8.6	8.6
24	11	12	b12	8.8	9.2	11	61	286	155	50	8.4	8.3
25	9.8	12	9.4	8.8	9.2	11	54	250	136	39	8.3	8.1
26	7.8	*12	11	8.6	9.2	11	56	260	129	*34	8.1	8.1
27	7.6	12	8.0	8.4	9.0	13	44	235	138	32	8.0	7.9
28	9.2	10	7.7	8.4	9.0	20	42	240	142	30	7.9	8.9
29	9.0	7.6	9.0	8.8	-	30	45	292	162	28	7.8	9.4
30	9.2	4.1	13	8.8	------	23	58	325	124	26	7.5	8.9
31	9.8	------	16	9.2	------	22	------	295	------	24	7.1	------
Total	302.5	383.1	313.8	289.4	256.5	389.0	1,400	6,193	9,376	1,893	365.1	270.9
Mean	9.76	12.8	10.1	9.34	9.16	12.5	46.7	200	313	61.1	11.8	9.03
Ac-ft	600	760	622	574	509	772	2,780	12,280	18,600	3,750	724	537

Calendar year 1954: Max 544 Min 4.1 Mean 85.9 Ac-ft 62,190
Water year 1954-55: Max 614 Min 4.1 Mean 58.7 Ac-ft 42,510

Peak discharge (base, 200 cfs).--May 12 (12:30 a.m.) 272 cfs (3.17 ft); May 20 (11 p.m.) 493 cfs (3.88 ft); June 10 (11 p.m.) 666 cfs (4.34 ft).

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

North Fork John Day River near Dale, Oreg.

Location.--Lat 44°59'55", long 118°56'25", in SE¼SE¼ sec. 35, T. 6 S., R. 31 E., on right bank a quarter of a mile downstream from Desolation Creek and three-quarters of a mile northeast of Dale.

Drainage area.--525 sq mi.

Records available.--October 1929 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,775.63 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--26 years, 381 cfs (275,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,520 cfs June 10 (gage height, 6.46 ft); minimum, 34 cfs Dec. 1 (gage height, 2.03 ft).
1929-55: 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, which are fair. Several small diversions for irrigation and mining above station. Since 1865 water has been diverted above station at times to North Fork Burnt River. Flow regulated by Olive Lake (capacity, about 5,500 acre-ft) and Upper Reservoir on Lake Creek (capacity, about 700 acre-ft). Some diurnal fluctuation at low flow caused by logging operations above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	31	4.0	620
2.2	51	5.0	1,230
2.5	100	6.0	2,060
3.0	220	7.0	3,110
3.5	390		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	71	48	130	90	68	145	277	1,170	448	108	*44
2	62	70	80	110	85	75	138	280	1,080	410	102	44
3	59	68	100	85	85	70	119	277	1,200	374	98	43
4	58	64	110	80	75	70	108	290	1,380	374	94	43
5	57	59	119	80	70	60	102	414	1,680	402	90	41
6	58	62	110	90	80	75	128	*585	1,900	398	87	40
7	57	59	87	90	80	80	192	665	2,080	426	83	39
8	54	59	65	90	83	80	253	774	2,130	358	79	40
9	57	64	65	85	85	*85	287	738	2,280	336	78	40
10	57	89	60	80	95	85	318	798	2,280	402	76	41
11	*59	89	55	75	100	90	274	990	2,110	343	73	40
12	76	92	60	75	90	87	244	1,170	1,920	308	68	39
13	79	98	65	*e0	80	78	244	1,040	1,680	284	67	39
14	70	87	65	90	70	76	229	798	1,380	268	67	47
15	65	89	55	90	75	76	202	685	1,170	244	64	79
16	65	108	50	90	*75	70	200	635	1,010	247	62	76
17	64	104	50	85	80	80	195	630	*900	226	61	87
18	65	94	50	85	80	80	182	705	828	205	58	75
19	67	89	55	90	85	78	170	1,020	786	190	58	61
20	73	83	60	95	80	75	160	1,700	762	180	55	57
21	73	79	70	90	80	76	168	2,090	756	168	54	51
22	71	79	*90	85	81	81	220	1,790	720	170	52	51
23	71	78	100	90	83	79	223	1,520	665	202	51	51
24	70	79	100	90	78	78	226	1,330	590	250	51	49
25	67	79	90	90	76	78	215	1,150	525	192	51	47
26	65	*79	85	90	75	78	220	1,170	502	*165	50	48
27	59	81	80	85	73	83	195	1,080	535	150	50	47
28	67	75	70	80	67	104	185	1,060	520	140	49	51
29	68	64	90	85	-	131	190	1,320	615	133	47	55
30	65	51	110	90	------	128	220	1,510	498	126	47	52
31	71	------	130	90	------	119	------	1,380	------	117	46	------
Total	2,019	2,342	2,424	2,740	2,256	2,573	5,952	29,871	35,652	8,236	2,076	1,517
Mean	65.1	78.1	78.2	88.4	80.6	83.9	198	964	1,188	266	67.0	50.6
Ac-ft	4,000	4,650	4,810	5,430	4,470	5,100	11,810	59,250	70,710	16,340	4,120	3,010

Calendar year 1954: Max 2,480 Min 48 Mean 383 Ac-ft 277,500
Water year 1954-55: Max 2,280 Min 39 Mean 268 Ac-ft 193,700

Peak discharge (base, 1,200 cfs).--May 12 (2 a.m.) 1,280 cfs (5.07 ft); May 21 (1 a.m.) 2,310 cfs (6.25 ft); May 30 (7 to 10 a.m.) 1,550 cfs (5.41 ft); June 10 (2 a.m.) 2,520 cfs (6.46 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 2, 3, Dec. 9 to Feb. 7, Feb. 10-21, Mar. 4-11, 16-18, 20.

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 1955.

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

Average discharge.--5 years, 42.8 cfs (30,990 acre-ft per year).

Extremes.--Maximum discharge during year, 664 cfs May 5 (gage height, 2.98 ft); minimum, 0.4 cfs Sept. 1, 2, 5-8.
1950-55: Maximum discharge, 1,220 cfs May 8, 1952 (gage height, 3.40 ft), from rating curve extended above 400 cfs by logarithmic plotting; maximum gage height, 3.70 ft about Feb. 1, 1951 (ice jam); minimum discharge, that of Sept. 1, 2, 5-8, 1955.

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

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 4				May 5 to Sept. 30			
0.5	0.8	1.0	23	0.4	0.2	1.1	31
.6	2.1	1.2	46	.5	.7	1.3	55
.7	4.8	1.5	103	.6	1.9	1.6	110
.8	9.3	1.9	213	.7	4.3	2.0	220
.9	16	2.3	395	.8	8.5	2.5	420
				.9	14	3.0	675

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	1.7	b2.4	2.4	2.6	b3.8	27	335	51	5.3	1.7	*0.5
2	1.9	1.7	2.1	b2.4	2.6	3.9	30	295	45	5.0	1.7	.5
3	1.9	1.7	2.4	b2.2	b2.6	b3.6	30	300	41	4.6	1.3	.5
4	1.9	1.7	2.1	b2.4	b2.2	b3.4	27	365	41	6.5	1.2	.5
5	1.9	1.7	2.4	2.8	2.4	a2.8	*33	426	41	8.0	1.2	.4
6	1.9	1.9	2.1	2.8	b2.6	a3.2	43	398	39	8.5	1.2	.4
7	1.7	1.9	2.6	2.8	2.6	a3.6	104	343	35	8.0	1.2	.4
8	1.7	1.9	3.1	2.8	b2.8	a4.2	210	291	31	6.1	1.2	.5
9	1.7	2.4	2.1	2.8	b3.0	a5.0	330	230	28	6.1	1.3	.5
10	1.7	3.4	2.4	2.6	b2.6	*4.8	390	211	24	6.1	1.0	.5
11	*1.9	2.8	b2.1	2.6	b3.0	4.8	240	211	22	5.3	.8	.6
12	2.4	3.1	1.5	2.6	3.6	b5.5	190	*196	20	5.0	.8	.7
13	2.8	2.8	1.7	2.8	3.4	b5.0	193	163	16	4.0	.8	.8
14	2.4	2.8	1.9	*2.8	b3.4	b5.0	154	127	16	4.3	.8	1.1
15	2.1	3.1	b2.1	2.8	3.1	b5.5	121	127	14	3.4	.8	1.3
16	1.9	3.4	a1.6	b2.8	b3.0	b5.0	103	152	13	3.4	1.0	1.6
17	1.9	3.1	a1.6	2.8	b3.0	b5.5	92	152	*12	3.2	.8	1.6
18	2.1	3.4	a1.7	b2.8	b3.0	b5.5	82	137	10	3.2	.7	1.3
19	1.9	3.6	a1.6	b2.8	b2.8	5.5	72	142	9.5	3.2	.8	1.2
20	2.1	3.1	a1.5	2.8	b3.0	b5.0	67	169	8.0	2.5	.8	1.3
21	2.1	2.8	a1.5	b2.8	*3.1	4.5	98	160	7.5	2.5	.8	1.2
22	2.1	2.6	*1.5	2.8	3.1	4.2	160	132	6.1	2.5	.8	1.2
23	2.1	2.6	1.5	2.8	3.1	b4.6	157	*110	6.1	3.2	1.0	1.2
24	1.9	2.4	1.9	b2.8	3.1	4.8	187	95	5.3	3.4	.8	1.2
25	1.9	2.6	2.1	2.8	b3.4	4.8	183	80	5.3	*2.7	.6	1.2
26	1.7	*2.6	2.1	b2.8	3.6	b5.0	157	78	5.7	2.7	.7	1.2
27	1.7	2.6	2.1	b2.8	b3.4	5.2	128	69	5.7	2.3	.7	1.2
28	1.7	2.6	1.7	b2.8	b3.6	7.2	121	63	7.0	2.3	.7	1.4
29	1.7	2.4	1.7	b2.6	-	13	176	65	7.0	2.1	.7	1.4
30	1.7	b2.1	2.1	2.6	------	17	295	68	5.7	1.9	.8	1.3
31	1.7	------	2.4	2.6	------	21	------	61	------	1.9	.7	------
Total	60.0	76.5	61.6	83.8	83.7	181.9	4,200	5,751	577.9	129.2	29.4	28.7
Mean	1.94	2.55	1.99	2.70	2.99	5.87	140	186	19.3	4.17	0.95	0.96
Ac-ft	119	152	122	166	166	361	8,330	11,410	1,150	256	58	57

Calendar year 1954: Max 316 Min 1.1 Mean 32.3 Ac-ft 23,390
Water year 1954-55: Max 426 Min 0.4 Mean 30.9 Ac-ft 22,350

Peak discharge (base, 250 cfs).--Apr. 9 (11 p.m.) 462 cfs (2.42 ft); Apr. 30 (10 p.m.) 480 cfs (2.45 ft); May 5 (9 p.m.) 664 cfs (2.98 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, and records for station near Ukiah and Willow Creek near Heppner.
b Stage-discharge relation affected by ice.

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 1955 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.--21 years (1914-17, 1919-23, 1940-44, 1945-55), 106 cfs (76,740 acre-ft per year).

Extremes.--Maximum discharge during year, 1,110 cfs May 5 (gage height, 3.88 ft); minimum, 2.4 cfs Aug. 25, 26, Sept. 1-8; minimum gage height, 1.21 ft Nov. 4.
1914-17, 1919-24, 1932-55: Maximum discharge, 2,350 cfs Dec. 12, 1946 (gage height, 4.58 ft); minimum observed, 1 cfs Aug. 1-9, 1932, June 24 to July 2, 1940.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions for irrigation of about 80 acres above station.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 5				May 6 to Sept. 30			
1.2	2.5	2.2	105	1.2	2.0	2.1	77
1.3	4.5	2.5	195	1.3	3.8	2.5	175
1.4	7.4	3.0	415	1.4	6.6	3.0	375
1.5	12	3.5	750	1.5	11	3.5	730
1.7	26	4.0	1,240	1.6	16	4.0	1,260
1.9	51			1.8	34		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	6.1	6	5.5	7.5	8.6	50	558	169	18	5.1	2.6
2	5.8	6.1	5.5	5.5	7.5	9.1	50	494	149	16	4.8	2.4
3	5.8	6.1	6	5.0	7.5	9	50	494	143	15	4.8	2.4
4	5.8	6.1	5.5	6	7	8	44	572	160	16	4.6	2.4
5	5.5	5.8	6	7	7.5	6.5	*40	798	191	23	4.0	2.4
6	5.2	6.1	5.5	8	8.6	8	70	730	194	23	4.0	2.4
7	5.2	6.1	6	8	9.1	9	276	624	197	23	4.0	2.8
8	5.2	6.1	6.5	8	10	10	477	600	188	18	4.0	3.0
9	5.2	7.0	6.5	8	9	11	649	484	178	16	4.3	2.8
10	5.2	9.6	6	7.5	8	*12	734	466	166	18	3.8	2.8
11	*5.5	8.6	5.0	7.5	9	12	454	490	146	15	3.4	2.8
12	7.4	9.1	4.0	7.5	9.5	13	375	*466	123	14	3.2	2.8
13	9.1	9.1	4.6	8	10	12	380	375	99	13	3.4	3.0
14	7.8	8.6	5.0	*9.1	10	12	311	281	77	13	3.4	4.8
15	7.4	9.1	5.5	9.1	10	13	243	258	62	11	3.2	5.1
16	7.0	10	4.0	8.6	10	12	203	299	52	11	3.4	6.0
17	6.4	9.6	4.0	8.6	9	13	184	316	*44	9.7	3.4	6.3
18	6.1	10	4.0	8.2	8	13	160	316	39	8.9	*3.0	5.7
19	7.4	10	3.6	8.2	7	13	139	355	33	8.5	3.0	4.8
20	7.8	9.6	3.4	8.5	6	12	128	454	31	8.1	2.6	4.6
21	7.8	8.6	3.2	9.1	*5.5	11	204	442	27	7.7	2.6	4.3
22	7.8	8.2	*3.2	8.6	6	10	324	355	24	7.7	2.8	4.0
23	7.4	7.8	3.2	8.6	7	11	306	*294	22	9.3	3.2	4.0
24	7.4	*7.4	3.8	8.6	7.5	12	347	250	20	11	2.8	3.8
25	6.7	7.0	4.2	8.6	8	12	329	214	19	*7.7	2.8	3.8
26	7.4	7.0	4.2	8.2	8.2	12	288	207	18	6.9	2.6	4.0
27	7.4	7.0	4.2	8	8.6	13	223	188	20	6.9	2.8	4.0
28	7.0	6.7	3.8	8	8.5	17	215	172	21	6.9	2.8	4.8
29	7.0	6.4	3.8	8	-	30	286	191	24	6.0	2.8	4.8
30	6.4	5.5	3.8	7.5	------	40	454	224	19	5.7	3.2	4.8
31	6.1	------	4.6	7.5	------	44	------	204	------	5.4	2.8	------
Total	205.0	230.4	144.6	242.5	229.5	428.2	7,995	12,171	2,655	379.4	106.6	114.2
Mean	6.61	7.68	4.66	7.82	8.20	13.8	266	393	88.5	12.2	3.44	3.81
Ac-ft	407	457	287	481	455	849	15,860	24,140	5,270	753	211	227

Calendar year 1954: Max 635 Min 3.2 Mean 68.3 Ac-ft 49,410
Water year 1954-55: Max 798 Min 2.4 Mean 68.2 Ac-ft 49,400

Peak discharge (base, 550 cfs).--Apr. 9 (11 p.m.) 930 cfs (3.71 ft); Apr. 30 (11:30 p.m.) 734 cfs (3.48 ft); May 5 (8 p.m.) 1,110 cfs (3.88 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 30 to Jan. 13, Jan. 20, Jan. 27 to Feb. 5, Feb. 8-13, 16-25, 28, Mar. 3 to Apr. 6.

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 1955.

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.--26 years, 228 cfs (165,100 acre-ft per year).

Extremes.--Maximum discharge during year, 942 cfs May 21 (gage height, 4.76 ft); minimum, 4.4 cfs Dec. 1 (result of freezeup).
1929-55: 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 good except those for periods of ice effect or no gage-height record, which are fair. Several small diversions above station for irrigation.

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

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	8.5	3.0	185
1.6	12	3.5	325
1.8	21	4.0	520
2.2	52	4.5	775
2.5	91	5.0	1,140

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	37	11	b60	47	54	328	552	395	161	40	14
2	31	37	b30	b50	48	58	244	516	364	145	37	14
3	34	37	b46	b44	b48	59	185	506	388	132	36	14
4	34	37	54	b50	b48	b55	161	534	419	126	34	14
5	34	37	50	b46	46	b46	139	670	475	139	33	14
6	34	37	50	b48	44	48	208	*823	542	134	32	13
7	33	41	44	b50	46	62	378	793	580	139	32	13
8	33	43	26	b48	54	78	520	823	615	119	30	14
9	34	40	b18	b46	b55	*96	580	720	640	108	28	14
10	34	60	b18	b46	b60	94	692	687	640	115	27	14
11	*36	58	b15	b46	b55	103	538	736	615	106	25	15
12	41	49	15	b46	b48	96	407	787	560	94	24	15
13	44	52	b32	*b46	49	96	459	714	516	88	23	15
14	44	49	48	b48	*52	78	502	575	439	80	a22	20
15	39	50	48	b48	52	71	419	520	378	73	a22	36
16	37	66	34	b46	b55	59	364	585	*332	71	a21	42
17	37	58	13	b48	b55	70	439	529	289	66	a20	45
18	37	50	b12	b48	b50	88	403	520	271	59	a19	42
19	37	48	b21	b48	b48	101	350	570	247	54	a20	35
20	40	47	b28	51	45	75	304	758	232	49	a20	30
21	40	46	b36	52	46	79	370	842	222	45	a18	30
22	38	45	b42	50	48	82	529	731	212	42	a17	29
23	37	44	*b44	48	48	98	538	630	192	68	a17	30
24	37	*44	b44	47	51	91	542	565	171	80	a16	29
25	37	44	b42	48	52	88	471	493	161	66	a15	29
26	37	45	b38	b48	53	86	463	480	157	*51	a15	28
27	35	46	b28	b48	52	112	392	447	161	49	a15	28
28	35	46	b36	b46	b50	177	350	415	161	48	a14	30
29	36	44	b44	45	-	325	364	451	208	45	a14	37
30	37	18	b55	45	------	238	435	471	171	43	a15	34
31	37	------	b65	46	------	188	------	447	------	41	*14	------
Total	1,130	1,355	1,087	1,486	1,405	3,041	12,074	18,890	10,753	2,636	715	737
Mean	36.5	45.2	35.1	47.9	50.2	98.1	402	609	358	85.0	23.1	24.6
Ac-ft	2,240	2,690	2,160	2,950	2,790	6,030	23,950	37,470	21,330	5,230	1,420	1,460

Calendar year 1954: Max 970 Min 11 Mean 193 Ac-ft 140,100
Water year 1954-55: Max 842 Min 11 Mean 152 Ac-ft 109,700

Peak discharge (base, 760 cfs).--Apr. 10 (5 a.m.) 787 cfs (4.52 ft); May 8 (8 a.m.) 887 cfs (4.68 ft); May 21 (6 a.m.) 942 cfs (4.76 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for North Fork John Day River near Dale and at Monument.

b Stage-discharge relation affected by ice.

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

Location.--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 of gorge and 6 miles southwest of Fox.

Drainage area.--90.2 sq mi.

Records available.--October 1930 to September 1955.

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.--25 years, 23.1 cfs (16,720 acre-ft per year).

Extremes.--Maximum discharge during year, 179 cfs May 21 (gage height, 3.22 ft); no flow Aug. 11 to Sept. 30.

1930-55: Maximum discharge, 1,860 cfs Mar. 25, 1952 (gage height, 5.85 ft, former site and datum), from rating curve extended above 200 cfs by slope-area determination of peak flow; no flow at times.

Revisions.--The maximum discharge for the water year 1953 has been revised to 675 cfs Mar. 24, 1953 (gage height, 5.15 ft), superseding figure published in WSP 1288.

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

Revisions (water years).--WSP 754: 1932(M). WSP 1348: Drainage area at former site.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 20				May 21 to Sept. 30			
0.8	0	1.5	17	0.9	0	1.7	30
.9	.2	1.7	28	1.0	.4	2.0	50
1.0	.6	2.0	50	1.1	2.5	2.5	93
1.1	1.9	2.5	93	1.2	6.5	3.0	148
1.2	4.3	3.0	148	1.4	14	3.5	230
1.3	7.6						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.2	0.6	1.0	1.2	1.5	14	47	49	3.7	0.7	
2	.1	.2	.8	.9	1.3	1.6	13	47	42	3.3	.5	
3	.1	.2	1.2	.8	1.2	1.7	11	46	38	2.5	.4	
4	.1	.2	1.6	.9	.9	1.4	14	44	36	2.2	.4	
5	.1	.2	1.7	1.0	1.0	.9	21	48	34	2.2	.3	
6	.1	.2	1.6	1.0	1.4	1.2	*40	*56	31	2.5	.2	
7	.2	.2	1.6	1.1	1.9	1.6	60	64	27	2.5	.1	
8	.2	.2	1.1	1.3	1.7	2.5	80	71	22	2.2	.1	
9	.2	.2	1.1	1.2	1.4	2.3	100	74	19	2.5	.1	
10	.2	.3	1.0	1.2	1.0	2.1	112	74	16	2.5	.1	
11	*.2	1.0	.8	1.0	1.2	1.8	80	83	14	2.5	0	
12	.3	1.6	.7	1.1	1.5	1.9	60	*97	12	1.8	0	
13	.3	1.4	.8	*1.2	1.7	1.7	69	99	11	1.0	0	
14	.3	1.7	.9	1.1	2.1	1.6	64	85	10	.7	0	
15	.3	1.9	.9	1.2	1.8	1.6	52	91	9.7	.7	0	
16	.3	2.1	.8	1.1	*1.6	1.7	52	128	*8.5	.7	0	
17	.3	2.1	.7	1.0	1.6	1.8	89	116	7.7	.5	0	
18	.2	1.9	.4	1.0	1.2	1.7	95	101	5.7	.5	0	
19	.3	1.7	.4	.8	.8	1.6	82	105	4.5	.3	0	
20	.3	1.4	.4	.9	1.4	1.4	52	135	3.7	.3	0	
21	.3	1.7	.4	1.0	1.5	1.6	61	158	1.5	.3	0	
22	.3	*2.1	.4	1.2	1.5	2.0	84	144	1.5	.4	0	
23	.3	1.7	*.5	1.4	1.5	1.9	80	117	1.5	.7	0	
24	.2	1.4	.7	1.2	1.5	2.2	57	101	1.5	1.0	0	
25	.2	1.4	.9	1.3	1.4	3.0	48	88	1.2	.7	0	
26	.2	1.4	.8	1.0	1.4	3.6	55	80	1.0	.7	0	
27	.2	1.2	.7	1.1	1.4	4.4	47	78	1.0	1.2	0	
28	.2	1.4	.6	1.2	1.3	6	40	66	2.9	*1.2	0	
29	.2	1.4	.7	1.7	~	8	38	60	3.3	1.0	0	
30	.2	.9	.8	1.6	------	11	40	59	3.7	1.0	0	
31	.2	------	.9	1.5	------	15	-----	56	------	.8	0	------
Total	6.7	33.5	26.5	35.0	39.4	92.3	1,690	2,618	419.9	44.1	2.9	0
Mean	0.22	1.12	0.85	1.13	1.41	2.98	56.3	84.5	14.0	1.42	0.09	0
Ac-ft	13	66	53	69	78	183	3,350	5,190	833	87	5.8	0

Calendar year 1954: Max 80 Min 0 Mean 13.2 Ac-ft 9,560
Water year 1954-55: Max 158 Min 0 Mean 13.7 Ac-ft 9,930

Peak discharge (base, 150 cfs).--May 21 (12:30 p.m.) 179 cfs (3.22 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 4-12, Jan. 14 to Feb. 15, Feb. 17 to Apr. 5, Apr. 7-9; discharge estimated on basis of weather records and records for nearby streams. Stage-discharge relation affected by ice Dec. 15, 16, 22-28, Jan. 2, 3, Apr. 6.

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 1955.

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.--29 years (1925-27, 1928-55), 1,133 cfs (820,300 acre-ft per year).

Extremes.--Maximum discharge during year, 5,650 cfs May 21 (gage height, 7.61 ft); minimum, 27 cfs Dec. 1 (result of freezeup).
1925-55: 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.

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

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

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.5	43	4.5	1,140
2.8	101	6.0	3,080
3.1	192	8.0	6,310
3.7	490		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	152	59	270	178	192	1,410	2,820	2,540	750	175	68
2	131	152	70	239	178	200	1,350	2,900	2,240	718	165	67
3	131	152	104	b190	178	200	1,020	2,720	2,200	638	155	65
4	128	a150	185	b180	b170	196	858	2,630	2,400	588	149	65
5	128	a160	178	b180	b170	b160	718	3,410	d2,700	616	140	63
6	131	a160	192	b180	b170	b170	1,000	*4,300	d3,000	646	134	63
7	131	a150	182	b190	182	*234	2,020	4,190	d3,200	670	128	61
8	128	a150	131	b200	185	370	3,230	4,440	d3,400	630	128	51
9	125	a150	104	b180	222	497	3,950	3,870	d3,600	560	123	65
10	125	a170	85	b170	b240	448	4,300	3,690	d3,600	553	114	67
11	128	a200	80	*b170	b250	497	3,170	4,010	3,470	574	112	67
12	*131	a200	101	b180	239	497	2,470	4,330	3,140	518	109	70
13	149	a200	114	185	222	436	2,760	3,910	2,810	460	106	70
14	165	a210	155	185	*211	375	2,510	3,080	2,330	436	101	78
15	161	a190	165	185	207	325	2,100	2,560	1,980	402	101	85
16	152	a200	117	185	203	310	1,760	2,860	*1,700	392	99	140
17	143	a220	65	189	222	320	1,900	3,220	1,480	392	92	161
18	143	a220	b60	189	234	345	1,890	3,040	1,340	365	90	158
19	146	a200	b55	b180	230	397	1,620	3,350	1,240	330	87	165
20	149	a190	70	b190	222	335	1,420	4,330	1,170	290	90	155
21	152	a190	b90	200	207	345	1,630	5,310	1,140	266	87	140
22	158	*189	140	196	203	350	2,880	4,780	1,100	252	76	134
23	155	d180	*168	189	203	414	2,840	4.060	1,040	257	78	131
24	155	d170	192	185	200	375	2,690	3,520	951	408	76	131
25	155	d170	196	182	207	365	2,410	3,050	862	370	72	128
26	155	d170	178	182	211	360	2,270	2,780	790	285	68	125
27	152	d180	b130	b170	203	386	1,880	2,720	806	*262	67	114
28	140	d180	b130	b160	189	630	1,680	2,450	798	234	67	112
29	140	d170	140	b160	-	1,260	1,670	2,580	933	219	65	114
30	149	134	189	185	------	1,330	2,090	2,930	888	203	67	123
31	149	------	b240	178	------	978	------	2,920	------	192	*68	------
Total	4,416	5,309	4,065	5,804	5,736	13,297	63,476	106,760	58,848	13,476	3,189	3,036
Mean	142	177	131	187	205	429	2,116	3,444	1,962	435	103	101
Ac-ft	8,760	10,530	8,060	11,510	11,380	26,370	125,900	211,800	116,700	26,730	6,330	6,020

Calendar year 1954: Max 4,920 Min 55 Mean 953 Ac-ft 689,700
Water year 1954-55: Max 5,310 Min 51 Mean 787 Ac-ft 570,100

Peak discharge (base, 4,900 cfs).--Apr. 9 (2 a.m.) 5,190 cfs (7.34 ft); May 21 (10 a.m.) 5,650 cfs (7.61 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 stations upstream and downstream.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed on basis of appearance of recorder record and records 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 1955 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.--27 years (1925-26, 1929-55), 1,709 cfs (1,237,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,640 cfs May 21 (gage height, 9.17 ft); minimum, 64 cfs Sept. 10.
1929-55: Maximum discharge, 28,900 cfs Mar. 19, 1932 (gage height, 16.75 ft); minimum, 20 cfs Sept. 6, 1931.

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

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 22 to Mar. 17)

1.2	56	3.0	572
1.4	86	4.0	1,110
1.7	143	5.0	1,860
2.0	215	7.0	4,050
2.5	370	9.0	7,300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	243	330	304	695	433	417	1,650	3,560	3,620	1,270	229	83
2	261	330	276	632	436	440	2,320	4,010	3,190	1,150	210	83
3	270	333	288	527	417	440	1,840	3,790	3,000	1,090	192	81
4	270	330	343	377	392	429	1,520	3,750	3,130	1,000	184	80
5	270	326	406	384	330	384	1,310	4,420	3,420	966	182	80
6	270	333	402	456	414	350	1,240	5,640	3,860	*1,040	172	80
7	270	326	421	436	444	*367	2,080	5,980	4,130	1,000	163	73
8	267	320	392	433	484	468	3,660	6,200	4,330	1,020	156	70
9	261	323	353	421	527	730	4,800	5,800	4,480	924	150	70
10	264	333	333	440	568	790	5,160	5,510	4,580	848	145	67
11	276	353	292	*410	444	765	4,810	5,460	4,480	894	135	72
12	*282	417	285	433	444	837	3,720	5,870	4,180	848	131	72
13	295	417	339	464	444	800	3,520	5,610	3,840	765	125	72
14	326	429	350	436	448	710	3,560	4,810	3,390	700	123	81
15	333	433	392	440	*452	623	3,270	4,000	3,000	647	123	90
16	336	429	377	433	468	563	2,770	4,120	2,630	572	121	99
17	326	448	267	421	497	536	2,760	4,820	2,290	514	115	127
18	317	464	246	429	527	554	3,040	4,630	2,060	476	*108	172
19	314	444	235	399	421	595	2,800	4,960	1,880	429	100	*177
20	310	425	258	399	421	647	2,450	5,700	1,760	395	97	184
21	320	414	a280	417	410	581	*2,370	7,070	1,670	343	97	170
22	330	402	a300	429	436	604	3,600	7,030	1,560	307	95	156
23	333	*395	a340	421	436	632	4,340	6,160	1,480	279	93	152
24	333	388	a370	425	429	686	4,010	5,380	1,370	333	86	154
25	336	384	a370	417	429	681	3,700	4,700	1,250	417	84	156
26	333	384	a360	414	425	671	3,470	4,120	1,170	402	86	154
27	330	392	346	381	425	656	3,180	4,000	1,120	336	80	150
28	326	395	343	370	406	775	2,770	3,690	1,190	298	81	145
29	323	392	363	377	-	1,340	2,630	3,460	1,220	279	86	152
30	320	374	410	414	- - - -	2,210	2,850	3,780	1,480	264	86	156
31	330	- - -	501	429	- - - -	1,700	- - - - -	*3,960	- - - - -	243	84	- - - - -
Total	9,375	11,463	10,542	13,559	12,407	21,981	91,200	151,990	80,760	20,049	3,919	3,458
Mean	302	382	340	437	443	709	3,040	4,903	2,692	647	126	115
Ac-ft	18,600	22,740	20,910	26,890	24,610	43,600	180,900	301,500	160,200	39,770	7,770	6,860

Calendar year 1954: Max 6,560 Min 161 Mean 1,525 Ac-ft 1,104,000
Water year 1954-55: Max 7,070 Min 67 Mean 1,180 Ac-ft 854,400

Peak discharge (base, 5,200 cfs).--Apr. 9 (11 a.m.) 6,090 cfs (8.32 ft); May 8 (3.30 p.m.) 6,580 cfs (8.60 ft); May 21 (4:30 p.m.) 7,640 cfs (9.17 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, records for station at McDonald Ferry, and weather records.

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 1955.

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.--50 years (1905-55), 1,969 cfs (1,425,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,800 cfs May 22 (gage height, 5.91 ft); minimum, 33 cfs Sept. 11 (gage height, 1.00 ft).

1904-55: Maximum discharge, 27,800 cfs Feb. 6, 1907 (gage height, 10.8 ft); maximum gage height, 13.2 ft Feb. 8, 1950, from floodmark (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, from floodmarks).

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

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

Rating table, water year 1954-55, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

0.9	35	2.5	990
1.1	80	3.0	1,540
1.3	145	4.0	3,130
1.6	280	5.0	5,300
2.0	540	6.0	8,070

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	348	439	446	446	524	1,890	2,810	*3,950	1,310	280	53
2	245	348	439	532	484	492	1,560	3,440	3,700	1,380	265	51
3	250	360	418	683	500	476	2,040	4,040	3,280	1,240	245	47
4	265	*348	360	647	500	492	1,960	3,850	3,040	1,160	230	45
5	280	354	342	572	500	508	1,600	3,780	3,090	1,080	212	47
6	290	360	360	411	492	492	1,410	4,270	3,340	*1,030	185	37
7	290	360	446	384	453	*476	1,290	5,550	3,780	1,010	181	39
8	295	360	453	468	446	425	1,480	5,910	4,080	1,050	181	47
9	290	360	468	476	500	432	3,400	6,120	4,290	1,050	181	43
10	300	354	468	*524	548	532	4,750	5,780	4,450	1,050	165	45
11	300	342	418	484	588	845	5,110	5,280	4,590	950	145	35
12	295	360	397	508	665	910	4,940	5,300	4,520	872	124	41
13	295	372	390	460	532	890	3,870	5,780	4,180	900	124	39
14	305	418	354	476	484	950	3,500	5,580	3,910	818	114	49
15	305	468	366	516	492	910	3,700	4,840	3,520	728	110	53
16	320	476	404	500	508	827	3,320	4,250	3,070	692	101	55
17	354	484	*411	484	508	764	2,870	4,840	2,710	629	*104	65
18	366	492	524	476	516	701	2,650	5,400	2,340	556	104	78
19	360	500	508	460	556	647	2,960	5,130	2,080	500	98	80
20	354	532	348	446	588	656	2,900	5,280	1,900	460	86	*101
21	354	524	320	446	532	692	*2,560	5,970	1,780	418	78	110
22	348	492	b340	446	468	746	2,580	7,300	1,660	390	65	149
23	348	476	342	484	476	656	3,540	7,210	1,580	360	58	161
24	342	468	b360	516	484	683	4,520	6,200	1,490	325	53	157
25	342	460	378	484	492	719	4,160	5,380	1,410	295	51	149
26	342	453	b420	476	492	773	3,910	4,770	1,330	290	58	138
27	342	439	418	476	508	755	3,600	4,210	1,260	360	60	138
28	360	439	b420	468	516	746	3,400	4,040	1,190	397	62	142
29	354	446	432	453	-	755	2,940	3,760	1,130	366	62	145
30	348	446	446	446	- - - -	970	2,740	3,520	1,190	330	60	142
31	354	-	446	439	- -	1,800	-----	3,740	- - - - -	305	58	- -
Total	9,838	12,639	12,635	15,087	14,274	22,244	91,150	153,330	83,840	22,301	3,900	2,481
Mean	317	421	408	487	510	718	3,038	4,946	2,795	719	126	82.7
Ac-ft	19,510	25,070	25,060	29,920	28,310	44,120	180,800	304,100	166,300	44,230	7,740	4,920

Calendar year 1954: Max 6,480 Min 145 Mean 1,580 Ac-ft 1,144,000
Water year 1954-55: Max 7,300 Min 35 Mean 1,216 Ac-ft 880,100

Peak discharge (base, 6,300 cfs).--May 9 (4 p.m.) 6,500 cfs (5.46 ft); May 22 (5:30 p.m.) 7,800 cfs (5.91 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used Aug. 22 to Sept. 21.

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 1955.

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.--17 years (1938-55), 149 cfs (107,900 acre-ft per year).

Extremes.--Maximum discharge during year, 245 cfs Oct. 1 (gage height, 1.86 ft); minimum, 62 cfs Mar. 5, caused by temporary storage behind ice jam upstream (gage height, 1.01 ft).

1937-55: Maximum discharge, 357 cfs 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).

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

Revisions (water years).--WSP 1248: 1951.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.1	80
1.2	100
1.5	169
2.0	269

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	192	159	140	109	94	92	86	94	127	147	176
2	243	*192	*159	138	109	94	92	86	94	129	147	176
3	241	190	157	134	107	92	90	88	94	129	150	176
4	239	190	157	131	107	90	90	90	94	129	*150	176
5	238	187	155	131	107	92	90	92	94	129	150	178
6	238	187	155	129	107	90	92	92	94	129	150	176
7	236	187	152	129	109	90	92	94	94	131	152	176
8	234	187	150	129	111	90	92	92	94	136	152	176
9	232	185	150	127	107	90	94	92	94	136	155	176
10	230	183	147	127	107	90	92	92	94	134	157	176
11	228	183	145	124	104	90	94	94	92	134	157	176
12	228	180	145	122	102	92	92	94	92	*134	162	176
13	226	178	147	122	102	92	90	92	92	134	162	178
14	*222	180	145	124	100	90	88	90	92	134	164	*178
15	220	180	143	127	100	92	88	90	94	134	169	183
16	218	180	140	124	98	90	88	90	*96	134	169	185
17	216	178	140	124	98	88	86	90	98	134	169	183
18	214	176	138	122	98	88	86	92	100	134	171	178
19	216	176	138	122	96	88	88	94	102	134	171	176
20	212	176	136	122	96	88	88	98	104	136	171	174
21	212	174	136	122	94	88	88	96	107	136	174	171
22	210	174	136	122	94	90	88	94	107	136	174	169
23	207	174	136	120	94	88	86	94	109	138	174	169
24	205	171	136	120	94	90	86	*94	111	140	174	169
25	203	171	136	*118	94	90	86	94	113	140	174	167
26	201	171	134	115	92	90	86	94	115	143	174	164
27	201	169	134	113	92	90	84	94	115	145	174	162
28	199	169	131	111	94	92	86	94	122	145	174	162
29	199	169	131	111	-	*92	86	94	122	145	174	159
30	196	162	138	111	-----	92	86	94	122	145	174	157
31	194	-----	140	111	-----	92	------	94	------	145	176	------
Total	6,803	5,371	4,446	3,822	2,822	2,804	2,666	2,864	3,043	4,209	5,091	5,198
Mean	219	179	143	123	101	90.5	88.9	92.4	101	136	164	173
Ac-ft	13,490	10,650	8,820	7,580	5,600	5,560	5,290	5,680	6,040	8,350	10,100	10,310

Calendar year 1954: Max 310 Min 111 Mean 192 Ac-ft 139,100
Water year 1954-55: Max 245 Min 84 Mean 135 Ac-ft 97,470

* Discharge measurement made on this day.

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 1955.

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.--19 years (1923-25, 1938-55), 64.0 cfs (46,330 acre-ft per year).

Extremes.--Maximum discharge during year, 74 cfs at times during period Oct. 1-13; minimum, 46 cfs sometime during period Apr. 3 to May 24.
1923-25, 1937-55: Maximum discharge, 137 cfs May 10, July 26, 27, July 31 to Aug. 2, 1951; maximum gage height, 1.23 ft Oct. 30, 1952 (backwater from culvert installation); minimum discharge recorded, 28 cfs Mar. 22, Apr. 5-10, Nov. 18, 21, 1941.

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

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	68	60	56	53	50	48	51	55	53	64	58
2	74	*68	*60	55	53	50	48	51	55	53	64	58
3	73	68	60	55	53	50	48	51	56	53	66	58
4	73	68	60	55	53	50	48	51	56	53	*66	56
5	73	68	60	55	53	50	48	51	58	53	66	56
6	72	68	60	55	53	50	48	51	60	55	66	56
7	72	68	58	55	53	50	48	51	60	55	64	56
8	72	68	58	55	53	50	49	51	60	55	64	56
9	71	68	58	55	53	50	49	51	58	55	64	56
10	71	68	58	55	53	50	49	52	58	55	64	56
11	71	68	58	55	55	49	49	52	58	55	62	56
12	70	68	56	55	55	49	49	52	56	*55	62	58
13	70	68	56	55	55	49	49	52	56	55	62	58
14	*70	68	56	55	55	49	49	52	55	55	62	*56
15	70	68	56	55	53	49	49	52	55	55	62	56
16	70	66	56	55	53	49	49	52	*53	55	62	56
17	70	66	56	55	53	49	49	52	53	55	62	56
18	69	66	56	55	51	49	49	52	53	55	62	56
19	69	66	56	55	51	49	50	52	53	55	62	56
20	69	66	56	55	51	49	50	53	53	55	62	56
21	69	64	56	55	51	49	50	53	53	55	60	56
22	69	64	56	55	51	49	50	53	53	55	58	56
23	68	64	56	55	51	48	50	53	53	55	58	56
24	68	62	56	55	51	48	50	*53	53	56	58	56
25	68	62	56	*55	51	48	50	53	53	56	58	56
26	68	62	56	55	50	48	50	53	53	56	58	56
27	68	60	56	53	50	48	50	53	53	58	58	56
28	68	60	56	53	50	48	50	53	53	58	58	56
29	68	60	56	53	-	*48	50	53	53	60	58	56
30	68	60	56	53	- - - -	48	51	55	53	60	58	56
31	68	- -	56	53	- - -	48	- - - -	55	- - - -	62	58	- -
Total	2,173	1,968	1,770	1,696	1,467	1,520	1,476	1,619	1,651	1,721	1,908	1,690
Mean	70.1	65.6	57.1	54.7	52.4	49.0	49.2	52.2	55.0	55.5	61.5	56.3
Ac-ft	4,310	3,900	3,510	3,360	2,910	3,010	2,930	3,210	3,270	3,410	3,780	3,350

Calendar year 1954: Max 96 Min 56 Mean 74.0 Ac-ft 53,590
Water year 1954-55: Max 74 Min 48 Mean 56.6 Ac-ft 40,950

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-13, 15-25, Feb. 19 to Mar. 28, Apr. 3 to May 23, June 30 to July 11; discharge interpolated for the very small recorded ranges in stage. Shifting-control method used Oct. 14, 26-31, Nov. 1 to Jan. 1, Mar. 29 to Apr. 2, May 24 to Sept. 30.

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 1955 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.--17 years (1938-55), 22.1 cfs (16,000 acre-ft per year).

Extremes.--Maximum discharge during year, 133 cfs June 13 (gage height, 2.14 ft); minimum, 0.1 cfs Dec. 25-28.
1937-55: 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 poor. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 18, 19)

0.34	0.1	1.0	17
.4	.3	1.2	29
.5	1.0	1.5	55
.6	2.4	2.0	115
.7	4.5	2.2	141
.8	7.5		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.2	0.3	0.2	5.7	1.8	7.9	11	47	73	16	1.6
2	.3	**.2	**.3	.2	5.4	2.0	7.9	11	48	71	15	1.4
3	.3	.2	.2	.2	5.4	2.0	7.9	11	51	68	14	1.3
4	.2	.2	.2	.2	5.4	2.0	7.5	11	54	66	*13	1.1
5	.2	.2	.2	.2	5.4	2	7.2	10	60	63	12	1.1
6	.2	.2	.2	.2	5.4	2	6.9	10	67	59	11	1.0
7	.2	.2	.2	.2	5.4	2	6.6	10	76	57	10	1.0
8	.2	.2	.2	.2	5.7	2	6.6	10	84	53	9.9	.7
9	.2	.2	.2	.2	6.3	2.5	6.3	9.9	95	52	9.1	.7
10	.2	.2	.2	.2	6	2.5	6.6	10	106	50	8.7	.6
11	.2	.2	.2	.2	5.5	3	6.9	10	118	47	7.9	.5
12	.2	.2	.2	.2	5	3	7.2	11	125	*45	7.5	.4
13	.2	.2	.2	.2	5	2.5	7.5	11	132	44	6.6	.4
14	.2	.2	.2	.2	4.5	2.5	7.5	13	132	43	6.3	**.5
15	.2	.2	.2	.2	4.3	2.5	7.5	15	128	42	6.0	.6
16	.2	.2	.2	.2	4.1	3	7.5	16	*123	41	5.7	.8
17	.2	.2	.2	.2	4.1	3	7.5	18	118	39	5.4	.8
18	.2	.2	.2	.2	4.1	3	7.9	19	110	36	4.8	.6
19	.2	.3	.2	.2	4.1	3.5	8.3	20	105	35	4.5	.6
20	.2	.3	.2	.2	4	4	9.1	22	101	32	4.3	.5
21	.2	.3	.2	.9	3.5	4.5	9.5	26	98	31	4.1	.4
22	.2	.3	.2	9.5	3	5	10	28	95	30	3.9	.4
23	.2	.3	.2	9	3	5	10	30	94	28	3.4	.3
24	.2	.3	.2	9	2.5	5.5	10	*32	89	26	3.2	.3
25	.2	.2	.1	*8.7	2.5	6	9.9	33	86	25	2.8	.3
26	.2	.2	.1	6.9	2	6.5	11	35	83	23	2.4	.2
27	.2	.2	.1	6.9	2	7	11	36	80	22	2.3	.2
28	.2	.2	.1	6.9	1.9	7.5	12	38	80	21	2.0	.2
29	.2	.2	.2	6.9	-	*8.3	12	40	80	19	2.0	.2
30	.2	.3	.2	6.3	----	8.3	12	42	77	18	1.7	.2
31	.2	-	.2	5.7	---	8.3	-----	44	------	17	1.7	------
Total	6.5	6.7	6.0	80.7	121.2	122.7	255.7	642.9	2,742	1,276	207.2	18.9
Mean	0.21	0.22	0.19	2.60	4.33	3.96	8.52	20.7	91.4	41.2	6.68	6.30
Ac-ft	13	13	12	160	240	243	507	1,280	5,440	2,530	411	37

Calendar year 1954: Max 102 Min 0.1 Mean 24.5 Ac-ft 17,750
Water year 1954-55: Max 132 Min 0.1 Mean 15.0 Ac-ft 10,890

* Discharge measurement made on this day.
** Field estimate made on this day.
Note.--No gage-height record Oct. 1-13, 15-25, Nov. 14-16, Jan. 3-7, 23, 24, Feb. 10-14, 20-28, Mar. 5-28; discharge interpolated or estimated on basis of weather records at Wickiup.

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 bridge, 1½ 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 1955 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 bridge 150 ft upstream at different datum.

Average discharge.--17 years (1938-55), 7.57 cfs (5,480 acre-ft per year).

Extremes.--Maximum discharge during year, 66 cfs June 10 (gage height, 1.68 ft); minimum, 0.2 cfs at times Oct. 1 to Nov. 13, Aug. 24 to Sept. 30.
1923-25, 1937-55: 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 fair except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.2	0.1	1.0	17
.3	.3	1.3	33
.4	1.2	1.5	48
.5	2.8	1.7	68
.7	7.2		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	0.5	1.0	1.0	1.1	2.8	3.6	34	10	0.5	0.2
2	.2	**.2	**.6	.9	.9	1.0	3.0	3.4	31	9.5	.5	.2
3	.2	.2	.5	.8	.9	1.0	3.0	3.5	29	9.2	.5	.2
4	.2	.2	.4	.8	.9	1.0	3.0	3.6	31	9	**.4	.2
5	.2	.2	.4	.8	.9	.9	3.0	4.0	37	8.3	.4	.2
6	.2	.2	.5	.8	.9	1.0	2.8	4.2	45	8.0	.4	.2
7	.2	.2	.6	.8	1.0	1.1	2.8	4.6	51	7.5	.4	.2
8	.2	.2	.6	.8	1.1	1.2	2.8	5.0	53	7	.4	.2
9	.2	.2	.6	.8	1.1	1.3	2.8	5.5	51	6.7	.3	.2
10	.3	.2	.5	.8	1.0	1.4	2.8	5.8	56	6	.3	.2
11	.3	.2	.5	.8	1.0	1.5	3.0	6.7	62	5	.3	.2
12	.4	.2	.5	.8	1.0	1.5	3.2	7.8	57	*4.6	.3	.2
13	.2	.2	.5	.8	1.0	1.5	3.2	8.9	51	3.8	.3	.2
14	.2	.3	.5	.8	1.0	1.5	3.2	9.2	46	3.6	.3	**.2
15	.2	.4	.5	.8	1.0	1.5	3.0	10	41	3.0	.3	.3
16	.2	.4	.5	.8	1.0	1.5	3.0	11	*36	2.6	.3	.4
17	.2	.4	.5	.9	1.0	1.5	3.0	12	31	1.9	.3	.3
18	.2	.4	.5	.9	1.0	1.4	3.0	13	28	1.6	.3	.2
19	.3	.4	.5	.9	.9	1.3	3.0	15	25	1.3	.3	.2
20	.3	.4	.5	.9	.9	1.2	3.2	18	22	1.2	.3	.2
21	.3	.4	.5	.9	.9	1.1	3.4	22	20	1.1	.3	.2
22	.3	.4	.5	.9	.9	1.3	3.5	24	18	.8	.3	.2
23	.3	.4	.4	.9	1.0	1.4	3.6	26	17	.8	.3	.2
24	.2	.4	.4	1.0	1.0	1.5	3.6	*27	15	.8	.2	.2
25	.2	.4	.4	**1.0	1.0	1.5	3.5	26	14	.6	.3	.2
26	.2	.4	.5	1.0	1.0	1.5	3.4	26	13	.6	.2	.2
27	.2	.4	.5	1.0	1.0	1.6	3.2	24	12	.6	.2	.2
28	.2	.4	.6	1.0	1.0	1.6	3.0	26	12	.6	.2	.2
29	.2	.4	.7	1.0	-	*1.7	3.0	26	11	.6	.2	.2
30	.2	.4	.8	1.0	------	1.8	3.3	30	11	.5	.2	.2
31	.2	------	.9	1.0	------	2.0	------	34	------	.5	.2	------
Total	7.1	9.3	16.4	27.4	27.3	42.4	93.1	445.8	960	117.3	9.7	6.4
Mean	0.23	0.31	0.53	0.88	0.98	1.37	3.10	14.4	32.0	3.78	0.31	0.21
Ac-ft	14	18	33	54	54	84	185	884	1,900	233	19	13

Calendar year 1954: Max 45 Min 0.2 Mean 7.98 Ac-ft 5,780
Water year 1954-55: Max 62 Min 0.2 Mean 4.83 Ac-ft 3,490

* Discharge measurement made on this day.
** Field estimate made on this day.

Note.--No gage-height record Nov. 28 to Dec. 1, Feb. 5 to Mar. 28, Apr. 16-18, 22, 23, 25-30, May 3, June 24, 25, 27, June 29 to July 2, July 4, 7, 8, 10, 11, July 28 to Aug. 3, Aug. 16-23, Sept. 4-13; discharge interpolated or estimated on basis of weather records, records for Little Deschutes River near Lapine, and unpublished records for Big Marsh Creek at Hoey Ranch near Crescent. Stage-discharge relation affected by ice Dec. 8, Dec. 10 to Feb. 4, Mar. 29-31, Apr. 4.

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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 near 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 1955.

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.--20 years (1922-25, 1938-55), 23.2 cfs (16,800 acre-ft per year).

Extremes.--Maximum discharge during year, 32 cfs Oct. 1-12, Sept. 2; maximum gage height, 1.72 ft Apr. 10 (backwater from reservoir); minimum discharge, 14 cfs May 7-17, 21-29. 1922-25, 1937-55: Maximum discharge, 59 cfs July 4, 1949; maximum gage height, 3.78 ft May 18, 1954 (backwater from reservoir); practically no flow Nov. 14, 1941.

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

Rating tables, water year 1954-55, except period of backwater (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 15-22)

Oct. 1 to Apr. 14		Apr. 15 to Sept. 30	
1.3	14	1.2	14
1.5	42	1.4	40

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	26	23	20	20	20	19	15	15	20	26	30
2	32	*26	*23	20	20	20	19	15	15	20	26	30
3	32	24	23	20	20	20	19	15	15	20	26	30
4	32	24	23	20	20	20	19	15	15	21	*26	30
5	32	24	23	20	20	20	18	15	15	22	26	30
6	32	24	23	20	20	20	18	15	15	22	26	30
7	32	24	22	20	20	20	18	14	15	24	26	30
8	32	24	20	20	20	20	18	14	16	24	26	30
9	32	24	20	20	20	20	17	14	16	24	25	30
10	32	23	20	20	20	20	17	14	18	24	24	30
11	32	23	20	20	20	20	17	14	18	24	24	29
12	32	23	20	20	20	20	17	14	18	*24	24	27
13	30	23	20	20	20	20	16	14	18	25	24	26
14	*30	23	20	20	20	20	16	14	18	25	24	*26
15	30	23	20	20	20	20	16	14	18	25	24	26
16	28	23	20	20	20	20	16	14	*18	26	25	26
17	28	23	20	20	20	20	15	14	18	25	25	26
18	27	23	20	20	20	20	15	15	18	25	26	24
19	27	23	20	20	20	20	15	*15	18	25	26	24
20	27	23	20	20	20	20	15	15	18	26	26	24
21	27	23	20	20	20	20	15	14	18	27	27	22
22	27	23	20	20	20	20	15	14	19	27	29	22
23	27	23	20	20	20	20	15	14	19	26	29	22
24	27	23	20	22	20	20	15	14	20	26	30	22
25	27	23	20	*22	20	20	15	14	20	26	30	22
26	27	23	20	22	20	20	15	14	19	26	30	22
27	27	23	20	22	20	20	15	14	19	26	30	22
28	27	23	20	22	20	20	15	14	20	26	30	22
29	26	23	20	22	- -	*20	15	14	20	26	30	22
30	26	23	20	20	- - - -	20	15	15	20	26	30	22
31	26	- - -	20	20	- - - -	20	- - - - -	15	- - - - - -	26	30	- - - -
Total	905	703	640	632	560	620	490	445	529	759	830	778
Mean	29.2	23.4	20.6	20.4	20.0	20.0	16.3	14.4	17.6	24.5	26.8	25.9
Ac-ft	1,800	1,390	1,270	1,250	1,110	1,230	972	883	1,050	1,510	1,650	1,540

Calendar year 1954: Max 44 Min 20 Mean 32.3 Ac-ft 23,350
Water year 1954-55: Max 32 Min 14 Mean 21.6 Ac-ft 15,660

* Discharge measurement made on this day.
Note.--Backwater from Crane Prairie Reservoir Feb. 9 to Apr. 14.

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 1955 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 Stage 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.--15 years (1937-51, 1954-55), 1.40 cfs (1,010 acre-ft per year).

Extremes.--Maximum discharge during year, 26 cfs sometime during period May 19 to June 16 (gage height, 1.27 ft); no flow at times.
1923-24, 1937-55: 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 poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0	8	5.3		
2								0	8.5	4.1		
3								0	9	3.6		
4								0	10	2.6		
5								0	11	2.0		
6								0	13	2.0		
7								0	14	1.9		
8								0	16	1.9		
9								0	17	1.4		
10								0	18	1.2		
11								0	20	.9		
12								0	19	*.4		
13								0	17	0		
14								0	15	0		
15								0	14	0		
16								.1	*13	0		
17								.1	12	0		
18								.2	11	0		
19								**.3	10	0		
20								.5	9.5	0		
21								.8	9	0		
22								1	8.5	0		
23								1.5	8	0		
24								2	8	0		
25								2.5	7.5	0		
26								3	6.9	0		
27								4	6.6	0		
28								4.5	8.5	0		
29					-			5	9.0	0		
30					----			6	6.0	0		
31		---			---		------	7	------	0		------
Total	0	0	0	0	0	0	0	38.5	343.0	27.3	0	0
Mean	0	0	0	0	0	0	0	1.24	11.4	0.88	0	0
Ac-ft	0	0	0	0	0	0	0	76	680	54	0	0

Calendar year 1954: Max - Min - Mean - Ac-ft -
Water year 1954-55: Max 20 Min 0 Mean 1.12 Ac-ft 810

* Discharge measurement made on this day.
** Field estimate made on this day.
Note.--No gage-height record May 16 to June 25 except staff-gage readings May 19, June 16; discharge estimated on basis of recorded range in stage and records for Deer Creek near Lapine.

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 1955.

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.--34 years (1914-15, 1922-55), 197 cfs (142,600 acre-ft per year).

Extremes.--Maximum discharge during year, 754 cfs Oct. 1 (gage height, 2.69 ft); minimum, 17 cfs Dec. 9 (gage height, 0.43 ft).
1914-17, 1922-55: 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. No diversion above station. Flow regulated since Nov. 4, 1922, by Crane Prairie Reservoir (see p. 67).

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 10				Apr. 10 to Sept. 30	
0.5	24	2.0	417	1.4	211
.7	52	2.5	650	1.7	310
1.0	104	3.0	945	2.1	463
1.5	236				

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	754	112	117	28	28	27	27	252	242	275	321	275
2	749	*112	117	28	28	27	27	252	242	300	321	275
3	744	112	117	28	28	27	27	252	242	200	*321	275
4	738	112	117	28	28	27	27	252	242	300	321	275
5	732	112	117	28	28	27	27	252	245	300	317	275
6	*727	114	119	28	28	27	27	252	245	300	317	275
7	722	114	119	28	28	27	27	249	245	300	317	275
8	716	114	119	28	28	27	27	249	245	300	317	272
9	710	114	*74	28	28	27	27	249	245	296	317	272
10	705	117	29	28	28	27	126	249	245	296	314	272
11	694	117	29	28	28	27	430	249	282	296	310	272
12	688	117	29	28	28	27	426	249	306	*296	310	272
13	683	117	29	28	28	27	422	249	306	296	310	272
14	678	117	29	28	28	27	422	249	306	296	310	272
15	672	117	29	28	28	27	422	249	306	296	306	268
16	666	117	29	28	28	27	418	249	*306	296	300	268
17	656	117	28	28	28	27	418	249	306	296	292	268
18	331	117	28	28	28	27	418	249	306	296	278	268
19	110	117	28	28	28	27	414	245	306	296	278	268
20	110	119	28	28	28	27	414	245	306	296	278	268
21	110	119	28	28	28	27	414	245	306	300	278	265
22	112	117	28	28	27	27	414	*245	306	324	278	255
23	112	117	28	28	27	27	410	245	306	328	278	255
24	112	117	28	26	27	27	410	245	303	328	278	255
25	112	117	28	28	27	27	410	245	286	328	278	255
26	112	117	28	28	27	27	406	245	272	324	275	255
27	112	117	28	28	27	27	406	242	272	324	275	255
28	112	117	28	28	27	27	350	242	268	324	275	255
29	112	117	28	28	-	*27	252	242	268	321	275	245
30	112	117	28	28	-----	27	252	242	268	321	*275	233
31	112	-----	28	28	-----	27	-----	242	-----	321	275	-----
Total	13,815	3,477	1,639	868	777	837	8,297	7,670	8,329	9,470	9,195	7,965
Mean	446	116	52.9	28.0	27.8	27.0	277	247	278	305	297	266
Ac-ft	27,400	6,900	3,250	1,720	1,540	1,660	16,460	15,210	16,520	18,780	18,240	15,800

Calendar year 1954: Max 814 Min 28 Mean 238 Ac-ft 172,100
Water year 1954-55: Max 754 Min 27 Mean 198 Ac-ft 143,500

* Discharge measurement made on this day.

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 1955 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.--19 years (1922-25, 1938-45, 1946-55), 38.7 cfs (28,020 acre-ft per year).

Extremes.--Maximum discharge during year, 56 cfs Oct. 1-8 (gage height, 1.31 ft); minimum, 29 cfs July 10-23.

1922-25, 1938-45, 1946-55: Maximum discharge, 87 cfs Oct. 28, 1950; maximum gage height, 1.56 ft Nov. 23, 1953; minimum discharge, 16 cfs July 22-25, 1941, and at times December 1941 to March 1942.

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

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss July 6 to Aug. 25)

Oct. 1 to Dec. 8		Dec. 9 to Sept. 30	
1.2	45	0.8	25
1.3	55	1.0	38
1.4	66	1.3	62

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	55	53	51	47	44	43	42	39	33	30	34
2	56	*55	*53	51	47	44	43	42	39	32	30	34
3	56	55	53	51	47	44	43	42	39	32	30	34
4	56	55	53	50	47	44	43	44	39	31	*30	34
5	56	55	53	50	47	44	43	46	38	31	30	34
6	56	55	53	50	47	44	43	45	38	30	30	34
7	56	55	53	50	47	44	43	44	38	30	30	34
8	56	55	53	49	47	44	44	43	38	30	30	34
9	55	55	54	49	47	44	45	42	38	30	30	35
10	55	55	54	48	47	44	44	41	38	29	30	35
11	55	55	54	48	47	44	43	41	38	29	30	35
12	55	55	53	48	47	44	42	41	38	*29	31	35
13	55	55	53	48	47	44	42	40	38	29	31	35
14	*55	55	53	48	47	44	42	40	38	29	31	*35
15	55	55	53	48	47	44	42	40	38	29	31	35
16	55	55	53	48	47	43	42	40	*38	29	31	36
17	55	55	52	48	47	43	42	40	38	29	31	36
18	55	55	52	48	46	43	42	39	37	29	31	36
19	55	55	52	48	46	43	42	*39	37	29	32	36
20	55	55	51	48	45	43	42	39	37	29	32	36
21	55	55	51	48	45	43	42	39	37	29	32	36
22	55	55	51	48	45	43	42	39	36	29	32	36
23	55	55	51	48	45	43	42	39	35	29	32	36
24	55	54	51	47	45	43	42	39	34	30	32	36
25	55	54	51	*47	45	43	42	39	34	30	32	36
26	55	54	51	47	45	43	42	39	34	30	33	36
27	55	54	51	47	45	43	42	39	34	30	33	36
28	55	54	51	47	45	43	42	39	34	30	33	36
29	55	53	51	47	-	*43	42	39	34	30	33	36
30	55	53	51	47	- - - -	43	42	39	33	30	33	36
31	55	- - -	51	47	- - -	43	- - - - -	39	- - - - -	30	33	- - -
Total	1,713	1,641	1,619	1,499	1,296	1,348	1,275	1,259	1,106	925	969	1,057
Mean	55.3	54.7	52.2	48.4	46.3	43.5	42.5	40.6	36.9	29.8	31.3	35.2
Ac-ft	3,400	3,250	3,210	2,970	2,570	2,670	2,530	2,500	2,190	1,830	1,920	2,100

Calendar year 1954: Max 60 Min 46 Mean 52.7 Ac-ft 38,150
Water year 1954-55: Max 56 Min 29 Mean 43.0 Ac-ft 31,140

* Discharge measurement made on this day.

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 downstream from 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 1955.

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

Average discharge.--22 years (1933-55), 80.1 cfs (57,990 acre-ft per year).

Extremes.--Maximum discharge during year, 202 cfs June 13 (gage height, 0.91 ft); minimum, 25 cfs Aug. 30, 31, Sept. 1.
1911-14, 1923-24, 1933-55: Maximum discharge, 416 cfs Nov. 24, 1953 (gage height, 1.44 ft); maximum gage height, 2.03 ft Jan. 5, 1947, (ice jam); minimum discharge recorded, about 10 cfs Mar. 4, 5, 1951, Feb. 26, 1954 (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).--WSP 794: 1933-34.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 16		Nov. 17 to Sept. 30			
0.4	53	0.2	20	0.6	102
.5	77	.3	32	.9	198
		.4	49		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	58	56	123	78	75	84	78	120	132	58	26
2	55	60	56	123	a75	93	87	72	117	129	*56	27
3	55	58	56	111	a75	93	87	72	120	120	54	27
4	53	60	56	108	a70	a90	78	70	123	117	49	26
5	53	58	54	108	a70	a85	72	*67	126	*111	49	27
6	53	58	63	102	70	a80	*72	67	*138	102	49	28
7	55	58	63	96	72	a75	70	67	148	96	49	28
8	55	58	*63	93	78	70	67	70	158	93	47	27
9	55	60	63	90	75	67	70	65	171	90	46	27
10	58	60	60	87	67	72	72	65	188	87	46	28
11	60	63	60	84	*67	72	75	67	191	*87	46	27
12	63	65	60	78	67	78	78	70	195	87	44	26
13	65	65	67	81	65	78	78	72	198	87	40	28
14	65	67	65	78	63	a75	81	75	191	87	39	37
15	63	70	67	87	60	a75	78	81	184	90	37	37
16	63	72	67	93	63	a70	78	78	174	90	35	46
17	63	72	60	90	65	a70	75	78	167	87	35	46
18	63	70	60	84	60	*a70	78	78	158	84	35	44
19	70	70	60	81	58	a70	81	81	151	81	34	44
20	70	70	56	87	58	a70	84	87	148	78	34	42
21	70	67	58	84	58	a65	87	93	148	75	34	37
22	70	67	58	87	60	a70	93	96	148	75	32	35
23	70	65	60	84	56	a75	90	99	145	72	32	35
24	65	65	65	84	56	84	84	102	142	72	34	34
25	63	65	67	81	58	84	81	102	138	67	28	32
26	60	65	67	78	60	81	93	108	135	65	27	32
27	*60	63	65	75	60	75	90	108	135	65	27	32
28	60	60	63	72	63	75	87	105	142	63	27	35
29	60	58	67	70	-	87	87	108	142	60	*27	34
30	60	56	87	72	------	81	84	117	135	60	27	31
31	58	------	111	72	------	81	------	120	------	58	26	------
Total	1,888	1,903	1,980	2,743	1,827	2,386	2,421	2,618	4,576	2,667	1,203	985
Mean	60.9	63.4	63.9	88.5	65.2	77.0	80.7	84.5	153	86.0	38.8	32.8
Cfsm	1.56	1.63	1.64	2.27	1.67	1.97	2.07	2.17	3.92	2.20	0.995	0.841
In.	1.80	1.81	1.89	2.62	1.74	2.28	2.31	2.50	4.36	2.54	1.15	0.94
Ac-ft	3,740	3,770	3,930	5,440	3,620	4,730	4,800	5,190	9,080	5,290	2,390	1,950

Calendar year 1954: Max 184 Min 53 Mean 94.4 Cfsm 2.42 In. 32.86 Ac-ft 68,350
Water year 1954-55: Max 198 Min 26 Mean 74.5 Cfsm 1.91 In. 25.94 Ac-ft 53,930

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for Salmon Creek near Oakridge.

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 1955.

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

Average discharge.--17 years, 735 cfs (532,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,220 cfs July 23, 24 (gage height, 7.65 ft); minimum, 12 cfs Oct. 15-25 (when gate was closed for outlet inspection and repair); minimum daily, 12 cfs Oct. 16-24.
1938-55: Maximum discharge, 2,220 cfs Sept. 8, 9, 1951, July 23, 24, 1955; maximum gage height, 7.79 ft Sept. 8, 9, 1951; minimum discharge, about 10 cfs Oct. 20, 1948, Jan. 17, 1952, Sept. 1, 2, 9, 18, Nov. 1-4, 1953 (when gate was closed for outlet inspection and repair); minimum daily, 10 cfs Jan. 17, 1952.

Remarks.--Records good. Flow regulated by Crane Prairie Reservoir, and since Dec. 24, 1942, by Wickiup Reservoir (see p. 67). During period Jan. 6 to Feb. 13, a total of 28,770 acre-ft, released from Wickiup Reservoir, bypassed station and was returned to river 2 miles downstream.

Revisions (water years).--WSP 1288: 1949(m).

Rating tables, water year, 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from ice or debris Oct. 22-26, 31, Nov. 1-4, 7-12, 16, 19-28, 30, Dec. 1-5, 9-17, 19-24, Jan. 13-19)

Oct. 1 to Jan. 31				Feb. 1 to Sept. 30			
1.0	10	2.5	232	1.2	25	3.0	410
1.2	25	3.0	370	1.5	58	5.0	1,050
1.5	56	5.0	1,020	2.0	145	7.0	1,900
2.0	127			2.5	265	7.7	2,250

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	889	15	27	g31	71	368	581	749	1,620	1,530	1,840	1,590
2	892	16	27	g31	32	467	472	752	*1,770	1,480	1,890	1,580
3	892	16	27	g31	32	476	419	752	1,820	1,450	1,900	1,580
4	896	16	27	g31	31	461	419	774	1,820	1,510	1,900	1,580
5	896	17	27	g31	31	437	419	819	1,820	1,600	1,860	*1,590
6	900	17	27	*31	31	398	419	854	1,830	1,610	1,830	1,580
7	900	18	27	g31	136	398	419	952	1,830	1,620	1,820	1,580
8	903	18	*28	g31	284	398	660	1,040	1,830	1,610	1,790	1,530
9	903	19	28	g31	398	*431	791	1,150	1,840	1,560	1,780	1,490
10	889	19	28	g31	*479	443	791	1,290	1,840	1,560	1,780	1,580
11	878	20	27	g31	g518	443	770	1,290	1,840	1,670	1,780	1,660
12	882	21	26	31	g602	467	707	1,300	1,830	1,860	1,790	1,660
13	777	22	25	31	g710	476	710	1,300	1,830	*1,900	1,750	1,660
14	452	23	24	30	g710	509	734	1,300	1,800	2,010	1,740	1,660
15	a88	23	24	30	g320	527	798	1,290	1,730	2,120	1,740	1,610
16	a12	23	24	30	g265	488	798	1,220	1,720	2,170	1,730	1,510
17	a12	*23	24	30	g265	449	802	1,150	1,710	2,160	1,700	1,430
18	12	23	24	31	268	434	805	1,160	1,660	2,120	1,700	1,210
19	12	23	25	31	268	434	808	1,170	1,670	2,070	1,680	931
20	12	23	25	31	268	431	812	1,260	*1,750	2,080	1,630	938
21	*12	23	25	33	268	416	812	1,370	1,890	2,100	1,640	886
22	12	24	25	34	268	410	780	*1,370	1,930	2,120	1,640	830
23	12	25	25	29	268	650	749	1,410	1,930	2,160	1,630	816
24	12	25	26	23	268	864	749	1,410	1,820	2,220	1,640	805
25	13	25	27	23	268	864	*749	1,430	1,720	*2,170	1,640	777
26	13	25	29	25	268	864	749	1,460	1,710	2,060	1,640	774
27	13	26	g30	26	290	861	749	1,460	1,680	2,060	1,630	704
28	14	26	g30	26	308	861	749	1,450	1,620	1,940	1,630	671
29	14	26	g30	28	-	858	749	1,460	1,560	1,910	1,620	677
30	14	26	g30	30	-------	722	749	1,470	1,530	1,820	1,600	656
31	14	-------	g30	33	-------	584	-------	1,540	-------	1,840	1,600	-------
Total	12,240	646	828	926	7,925	16,889	20,718	37,402	52,950	58,090	53,540	37,545
Mean	395	21.5	26.7	29.9	283	545	691	1,207	1,765	1,874	1,727	1,252
Ac-ft	24,280	1,280	1,640	1,840	15,720	33,500	41,090	74,190	105,000	115,200	106,200	74,470
(†)	-	-	-	17,590	10,180	-	-	-	-	-	-	-

Calendar year 1954: Max 1,960 Min 12 Mean 810 Ac-ft 586,400
Water year 1954-55: Max 2,220 Min 12 Mean 821 Ac-ft 594,400

* Discharge measurement made on this day.
† Discharge, in acre-feet, of Wickiup spillway during period Jan. 6 to Feb. 13 which by-passed gage and returned to river 2 miles downstream.
a No gage-height record; discharge estimated on basis of regulation notes.
g Computed from daily staff-gage readings.

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 1955 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.--17 years (1938-55), 151 cfs (109,300 acre-ft per year).

Extremes.--Maximum discharge during year, 200 cfs Oct. 1-8 (gage height, 1.68 ft); minimum, 140 cfs Sept. 20-27.
1938-55: Maximum discharge, 250 cfs July 28, 1952 (gage height, 1.94 ft); minimum, 68 cfs Apr. 6, 1942.

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

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

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.3	132
1.7	204

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	200	185	185	172	172	172	172	172	165	158	165	158
2	200	185	*185	172	172	172	172	172	165	158	163	158
3	200	185	185	172	172	172	172	172	165	158	163	158
4	200	185	185	172	172	172	172	172	163	158	*163	156
5	200	185	185	172	172	172	*172	172	163	160	163	154
6	*200	185	185	172	172	172	172	172	163	160	162	154
7	200	187	183	174	172	172	174	172	163	160	162	154
8	200	185	183	174	172	172	174	172	165	162	162	153
9	198	185	183	174	172	172	174	172	165	163	162	153
10	198	187	181	176	172	172	174	172	165	165	162	151
11	198	187	181	176	172	172	172	172	165	167	162	149
12	196	187	181	178	172	172	172	172	165	*167	162	149
13	196	187	180	178	172	172	172	172	165	167	162	149
14	196	187	180	*178	*172	172	172	172	165	167	162	147
15	196	189	178	178	172	172	172	172	167	167	162	147
16	196	189	176	178	172	172	172	172	*167	165	162	146
17	194	189	176	178	172	172	172	172	165	165	162	146
18	194	189	174	178	171	172	172	172	165	165	162	144
19	193	189	174	178	171	172	172	*172	165	165	162	142
20	191	189	174	176	171	172	172	172	165	165	162	142
21	191	189	174	176	171	172	172	172	163	165	162	142
22	189	*189	174	174	171	172	172	172	163	165	162	140
23	189	187	172	172	171	172	172	171	163	165	162	140
24	189	185	172	172	171	172	172	171	162	165	162	140
25	187	185	172	172	171	172	172	169	162	165	162	140
26	187	185	172	172	172	172	172	169	160	165	161	140
27	187	185	171	172	172	172	172	167	160	165	161	142
28	185	185	171	172	172	172	172	167	160	165	161	144
29	185	185	171	172	-	172	172	167	158	165	160	144
30	185	185	172	172	- - - -	172	172	167	158	165	*160	144
31	185	- - -	172	172	- - - - - -	172	- - - - - -	165	- - - - - -	165	160	- - - - - -
Total	6,005	5,596	5,507	5,404	4,808	5,332	5,168	5,297	4,905	5,077	5,020	4,426
Mean	194	187	178	174	172	172	172	171	164	164	162	148
Ac-ft	11,910	11,100	10,920	10,720	9,540	10,580	10,250	10,510	9,730	10,070	9,960	8,780

Calendar year 1954: Max 234 Min 171 Mean 199 Ac-ft 144,000
Water year 1954-55: Max 200 Min 140 Mean 171 Ac-ft 124,100

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 24 to Feb. 13, Aug. 25-29; 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 left bank 450 ft downstream from dam at outlet of Crescent Lake and 14 miles west of Crescent. Prior to July 15, 1955, at site 150 ft upstream.

Drainage area.--60.7 sq mi.

Records available.--January 1911 to July 1915, July 1927 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 4,825 ft, based on comparative gage readings at former site. 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. June 1936 to July 14, 1955, water-stage recorder and Parshall flume at site 150 ft upstream at datum 4,826.72 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--30 years (1911-14, 1928-55), 52.4 cfs (39,940 acre-ft per year).

Extremes.--Maximum discharge during year, 273 cfs sometime during period July 24 to Aug. 2 (gage height, 2.92 ft, from recorded range in stage); minimum daily, 2 cfs Sept. 21-30.
1911-15, 1927-55: Maximum discharge, 313 cfs July 9, 1929, Aug. 9, 1936; no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Flow regulated since 1922 by Crescent Lake (see p. 67), storage being released for diversion below station through Deschutes County Municipal Improvement District Canal at Bend. No diversion above station.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year, 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris May 13-17; shifting-control method used July 15-24)

Oct. 1 to July 14				July 15 to Sept. 30			
0.1	2	1.0	47	0.1	2	1.0	44
.2	4	1.5	89	.2	4	1.5	88
.3	7	2.0	142	.3	6	2.0	144
.5	15	2.5	203	.5	14	2.5	211
.7	26			.7	24	3.0	285

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	51	50	120	104	82	96	34	7	4	242	108
2	102	47	71	119	104	83	95	30	7	4	*242	106
3	96	44	110	119	103	83	94	15	7	4	234	100
4	90	43	109	119	100	82	93	12	7	4	226	88
5	86	40	107	119	95	82	91	16	7	**4	256	57
6	54	39	112	118	95	81	90	10	7	4	248	*75
7	25	28	133	118	94	80	89	9.3	7	4	238	94
8	31	13	133	117	76	80	88	8.5	7	4	226	90
9	36	7.0	132	117	88	90	87	8.1	7	4	218	90
10	40	6.7	130	116	90	105	87	7.8	7	3	222	90
11	38	7.0	129	119	90	105	87	7.4	6	3	230	90
12	73	7.4	128	121	89	107	87	7.0	6	3	221	65
13	130	8.9	128	118	88	110	86	9.2	6	3	211	5
14	130	7.8	127	116	87	111	86	8.9	6	3	198	5
15	130	70	127	105	87	110	85	7.0	6	*2.8	*190	5
16	100	148	127	93	88	108	83	9.7	6	3.0	182	4
17	60	141	126	80	87	106	82	9.3	6	2.8	174	4
18	60	132	124	60	86	104	82	8	6	2.4	169	4
19	60	83	123	70	86	102	81	8	6	2.4	164	3
20	60	112	122	109	85	101	82	8	5	2.4	160	3
21	60	112	122	114	84	98	79	8	5	*38	150	2
22	60	111	122	113	81	99	77	8	5	100	148	2
23	60	109	109	113	79	100	76	8	5	*210	145	2
24	60	104	106	113	77	101	76	8	5	248	137	2
25	60	92	120	112	77	100	74	8	5	246	131	2
26	60	86	118	112	82	99	76	8	5	245	125	2
27	63	76	118	111	89	97	72	8	5	245	122	2
28	62	71	118	111	86	81	56	7	5	244	121	2
29	57	63	117	111	-	92	42	7	5	244	*116	2
30	53	60	118	109	------	99	35	7	5	243	109	2
31	51	----	116	107	------	97	------	7	------	243	108	------
Total	2,150	1,919.8	3,632	3,399	2,477	2,975	2,414	317.2	179	2,372.8	5,663	1,106
Mean	69.4	64.0	117	110	88.5	96.0	80.5	10.2	6.0	76.5	183	36.9
Ac-ft	4,260	3,810	7,200	6,740	4,910	5,900	4,790	629	355	4,710	11,230	2,190

Calendar year 1954: Max 236 Min 6.7 Mean 134 Ac-ft 96,710
Water year 1954-55: Max 256 Min 2 Mean 78.4 Ac-ft 56,720

* Discharge measurement made on this day.
** Field estimate made on this day.
Note.--No gage-height record Oct. 13-26, Nov. 30, Dec. 1, Jan. 17, 18, 26, 27, Mar. 8, 9, May 18 to July 4, July 6-14, 19, July 25 to Aug. 1, Aug. 20, 21, Sept. 8-30; discharge estimated on basis of field estimates, regulation notes, weather records, and records for Little Deschutes River near Lapine.

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 1955.

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 1½ 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.--31 years (1924-55), 187 cfs (135,400 acre-ft per year).

Extremes.--Maximum discharge during year, 311 cfs June 14 (gage height, 3.81 ft); maximum gage height, 4.53 ft Dec. 20 (ice jam); minimum discharge, 49 cfs Sept. 26-30 (gage height, 1.66 ft).
1910-13, 1918, 1920, 1924-55: 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 following page).

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

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 11		Mar. 12 to Sept. 30	
2.2	93	1.6	43
3.0	172	2.0	84
4.0	293	3.0	205
		3.9	324

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	169	119	110	260	180	170	234	155	247	141	276	130
2	165	120	100	250	180	170	227	158	254	138	266	128
3	165	118	124	230	170	160	214	162	249	140	*264	126
4	161	114	162	210	160	150	205	*153	239	138	267	122
5	158	112	174	*200	160	140	*196	142	234	129	261	118
6	155	111	173	180	*170	130	193	178	232	120	266	*106
7	150	110	*179	160	180	140	200	192	236	113	275	84
8	127	108	185	160	190	150	210	195	248	108	273	98
9	117	105	179	160	200	150	227	210	258	106	264	92
10	115	102	185	160	200	155	245	217	271	103	250	78
11	115	106	191	160	190	170	241	227	280	*98	244	82
12	115	106	182	165	170	180	235	248	300	94	247	78
13	116	103	178	170	160	175	223	270	307	88	244	77
14	*162	102	175	170	160	170	223	280	311	86	243	71
15	178	103	176	165	160	171	214	280	307	82	236	69
16	179	107	170	160	160	182	205	261	296	77	224	75
17	174	203	165	155	160	*179	201	241	276	75	212	75
18	148	225	160	150	150	169	198	234	249	74	204	72
19	144	212	160	140	140	170	200	234	*222	72	196	67
20	146	183	160	120	140	169	198	239	200	66	188	62
21	144	176	160	130	140	164	201	252	183	*61	184	57
22	141	180	160	150	150	167	206	264	169	67	178	55
23	138	175	155	160	170	166	209	274	165	110	171	53
24	133	174	150	160	160	180	208	288	166	132	167	51
25	131	172	140	160	150	192	205	286	165	221	162	51
26	128	165	140	155	150	205	201	274	162	260	156	50
27	128	156	140	150	160	208	195	266	162	276	152	49
28	127	149	150	155	170	223	188	256	152	286	148	49
29	128	142	180	160	-	247	187	245	147	286	144	49
30	124	126	210	175	------	235	171	238	146	292	140	49
31	122	------	240	180	------	236	------	238	------	287	135	------
Total	4,404	4,184	5,113	5,260	4,630	5,473	6,260	7,157	6,833	4,326	6,637	2,323
Mean	142	139	165	170	165	177	209	231	228	140	214	77.4
Ac-ft	8,740	8,300	10,140	10,430	9,180	10,860	12,420	14,200	13,550	8,580	13,160	4,610

Calendar year 1954: Max 869 Min 100 Mean 331 Ac-ft 239,300
Water year 1954-55: Max 311 Min 49 Mean 172 Ac-ft 124,200

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 1, 2, Dec. 16 to Mar. 13.

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 1955. Staff gage read once daily. Datum of gage is 4,400.0 ft above mean sea level (levels by Bureau of Reclamation). Maximum contents observed during year, 49,330 acre-ft Apr. 10 (elevation, 4,443.76 ft); minimum observed, 18,240 acre-ft Sept. 28-30 (elevation, 4,436.22 ft). Maximum contents observed during period 1922-55, 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.

Revisions.--WSP 1218: Drainage area.

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 1955. Tape gage read daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Maximum contents observed during year, 199,900 acre-ft Mar. 14 (elevation, 4,337.66 ft); minimum observed, 4,010 acre-ft Sept. 19 (elevation, 4,278.97 ft). Maximum contents observed during period 1942-55, 200,400 acre-ft Apr. 5, 1954 (elevation, 4,337.70 ft); minimum observed since reservoir first filled in March 1949, 523 acre-ft Oct. 18, 1952 (elevation, 4,270.86 ft).

Reservoir is formed by rock-faced, earth-fill dam completed by Bureau of Reclamation in August 1949. 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 trashrack structure elevation, 4,259.75 ft. Water is diverted from Deschutes River at Bend and is 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 1955. 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, 38,730 acre-ft July 18 (elevation, 4,836.75 ft); minimum observed, 21,260 acre-ft Apr. 17, 20, 24, May 1 (elevation, 4,832.00 ft). Maximum contents observed during period 1922-55, 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).--WSP 739: 1923 (maximum contents). WSP 1218: Drainage area.

Month-end elevation and contents, water year October 1954 to September 1955

Date	Crane Prairie Reservoir			Wickiup Reservoir			Crescent Lake		
	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	4,440.00	32,660	-	4,323.38	88,700	-	4,832.40	22,700	-
Oct. 31.....	4,437.80	25,980	-6,680	4,329.76	126,200	+37,500	-	a25,650	+2,950
Nov. 30.....	4,439.68	31,350	+7,370	4,333.80	160,200	+34,000	4,832.9	24,510	-1,140
Dec. 31.....	-	a39,040	+7,690	4,336.81	190,600	+30,400	-	a25,300	+790
Calendar year 1954.	-	-	-3,770	-	-	+17,000	-	-	-17,080
Jan. 31.....	-	a45,450	+6,410	4,337.51	198,300	+7,700	-	a24,200	-1,100
Feb. 28.....	-	a46,920	+1,470	4,337.52	198,400	+100	-	a23,060	-1,140
Mar. 31.....	-	a49,010	+2,090	4,337.14	194,200	-4,200	-	a21,920	-1,140
Apr. 30.....	-	a38,220	-10,790	4,337.52	198,400	+4,200	-	a21,350	-570
May 31.....	4,440.04	32,830	-5,390	4,334.45	166,400	-32,000	-	a26,000	+4,650
June 30.....	4,439.46	30,460	-2,370	4,327.74	112,200	-54,200	4,835.90	35,570	+9,570
July 31.....	4,438.04	24,880	-5,580	4,315.67	63,110	-49,090	4,835.54	34,220	-1,350
Aug. 31.....	4,436.68	19,800	-5,080	4,296.69	23,180	-39,930	4,832.68	23,710	-10,510
Sept.30.....	4,436.22	18,240	-1,560	4,284.27	8,100	-15,080	-	b24,500	+790
Water year 1954-55...	-	-	-14,420	-	-	-80,600	-	-	+1,800

* Gage usually read 7 to 8 a.m.
† Gage read at irregular times.
a No gage-height record; contents interpolated.
b No gage-height record; contents estimated from observer's notes.

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 1955. 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 a 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.--38 years (1906-13, 1924-55), 1,371 cfs (992,600 acre-ft per year).

Extremes.--Maximum discharge during year, 2,840 cfs July 26 (gage height, 4.70 ft); minimum, 720 cfs Dec. 27 (gage height, 1.00 ft, from recorded range in stage).
1906-14, 1920-21, 1924-55: Maximum discharge, 5,000 cfs (estimated) Nov. 27, 1909 (gage height not determined); minimum, 448 cfs sometime during period Jan. 11 to Feb. 3, 1950 (from recorded range in stage); minimum daily, 480 cfs Feb. 12, 1948.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. 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 preceding page).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.0	720	4.0	2,350
2.0	1,170	4.7	2,840
3.0	1,720		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,830	780	760	890	1,160	1,090	1,490	1,580	2,350	2,290	2,650	2,260
2	1,760	776	750	870	1,200	1,160	1,470	1,560	2,430	2,260	2,660	2,250
3	1,750	776	800	862	1,150	1,250	1,360	1,560	2,530	2,220	2,650	2,240
4	1,740	772	810	836	1,140	1,240	1,290	1,560	2,580	2,180	2,670	2,220
5	1,740	772	820	840	1,110	1,220	1,280	1,580	2,600	2,190	2,680	2,220
6	1,740	768	860	836	1,100	1,180	1,270	1,590	2,600	2,270	2,670	2,220
7	1,740	768	860	898	1,120	1,180	1,270	1,660	2,600	2,290	2,640	2,220
8	1,740	768	858	1,010	1,250	1,200	1,280	*1,760	2,600	2,290	2,630	2,200
9	1,730	768	858	1,060	1,400	1,240	1,510	1,830	2,600	2,290	2,610	2,170
10	1,710	764	836	1,070	1,500	1,270	*1,650	1,940	2,600	2,260	*2,600	2,120
11	1,700	764	832	1,080	1,550	1,280	1,680	2,060	2,620	2,220	2,590	2,120
12	1,680	776	849	1,080	1,600	1,300	1,660	2,090	2,620	2,270	2,580	2,210
13	1,680	772	862	1,080	1,650	1,320	1,600	2,120	2,640	*2,410	2,570	2,240
14	1,610	768	854	1,080	1,680	1,300	1,580	2,150	2,650	2,500	2,560	2,260
15	1,340	772	849	1,100	1,500	1,300	1,610	2,170	2,650	2,540	2,540	2,270
16	1,050	768	828	1,100	1,120	*1,320	1,660	2,180	2,620	2,620	2,520	2,240
17	885	768	788	1,100	1,100	1,300	1,650	2,120	2,600	2,710	2,500	2,160
18	858	832	776	1,100	1,090	1,260	1,660	2,030	2,560	2,720	2,480	2,070
19	836	898	768	1,090	1,080	1,240	1,650	2,010	2,530	2,710	2,450	1,940
20	*820	898	*808	1,080	1,060	1,230	1,670	2,010	2,470	2,670	2,440	1,650
21	820	880	816	1,070	1,040	1,230	1,680	2,060	2,490	2,650	2,400	1,600
22	812	858	832	1,060	1,040	1,220	1,670	2,190	2,570	2,650	2,380	1,540
23	804	862	836	1,100	1,050	1,220	1,640	2,210	2,610	2,670	2,360	1,470
24	796	862	849	1,120	1,080	1,460	1,610	2,250	2,640	2,700	2,350	1,450
25	792	862	832	1,120	1,080	1,690	1,610	2,290	2,580	2,780	2,340	1,430
26	792	862	812	1,120	1,060	1,710	1,620	2,300	2,500	2,820	2,340	1,410
27	788	850	800	1,130	1,050	1,710	1,600	2,320	2,460	2,820	2,340	1,400
28	784	840	800	1,120	1,080	1,740	1,600	2,320	2,440	2,790	2,330	1,340
29	784	830	810	1,100	-	1,770	1,620	2,310	2,400	2,760	2,310	1,300
30	784	800	840	1,120	------	1,770	1,610	2,290	2,330	2,740	2,310	1,290
31	784	-----	880	1,140	------	1,610	-----	2,290	------	2,680	2,290	------
Total	38,679	24,234	25,533	32,262	34,000	42,010	46,550	62,390	76,470	77,970	77,440	57,510
Mean	1,248	808	824	1,041	1,214	1,355	1,552	2,013	2,549	2,515	2,498	1,917
Ac-ft	76,720	48,070	50,640	63,990	67,440	83,330	92,330	123,700	151,700	154,700	153,600	114,100

Calendar year 1954: Max 2,970 Min 750 Mean 1,773 Ac-ft 1,283,000
Water year 1954-55: Max 2,820 Min 750 Mean 1,630 Ac-ft 1,180,000

*Discharge measurement made on this day.

Note.--No gage-height record Nov. 27 to Dec. 7, Dec. 28, to Jan. 2, Jan. 10 to Feb. 15, Mar. 5, June 4-19, Aug. 13-27; discharge estimated on basis of records for station below Lava Island adjusted for flow in Arnold Canal.

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 1955.

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

Average discharge.--29 years, 1,174 cfs (849,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,610 cfs July 26 (gage height, 3.48 ft); minimum, 670 cfs Nov. 3-5, 7, 8, 11.
1926-55: Maximum discharge, 2,780 cfs June 28-30, 1952 (gage height, 3.64 ft); minimum, 416 cfs Jan. 18, 1950 (gage height, 0.79 ft).

Remarks.--Records good. Arnold Canal diverts water above station for irrigation (see following page). Flow regulated by Crescent Lake, Crane Prairie and Wickiup Reservoirs (see p. 67).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.3	670
2.0	1,190
3.0	2,120
3.5	2,630

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,640	683	728	835	1,060	988	1,380	1,450	2,070	2,100	2,440	2,100
2	1,560	683	722	828	1,110	1,030	1,360	1,420	2,170	2,070	2,440	2,090
3	1,540	670	761	828	1,060	1,110	1,270	1,420	2,240	2,050	2,430	2,070
4	1,530	670	761	800	1,040	1,130	1,190	1,420	2,350	1,990	2,450	2,060
5	1,530	670	748	794	1,040	1,120	1,170	1,420	2,380	1,990	2,460	2,050
6	1,520	676	787	794	1,040	1,080	1,170	1,430	2,380	2,060	2,460	2,060
7	1,530	670	807	828	1,050	1,060	1,180	1,470	2,380	2,100	2,430	2,050
8	1,520	670	821	926	1,140	1,090	*1,170	*1,560	2,380	2,120	2,420	2,020
9	1,500	676	821	980	1,290	1,140	1,360	1,620	2,380	2,120	2,410	2,000
10	1,500	676	807	988	1,380	1,170	1,510	1,700	2,380	2,100	2,400	1,960
11	1,490	676	800	1,000	1,440	1,200	1,550	1,800	2,390	2,070	*2,380	1,940
12	1,470	683	814	1,010	1,490	1,230	1,520	1,850	2,400	2,080	2,370	2,020
13	1,460	683	821	1,010	1,550	1,240	1,440	1,870	2,410	2,200	2,370	2,070
14	1,410	683	821	1,010	1,570	1,230	1,430	1,890	2,420	*2,290	2,360	2,100
15	1,170	696	814	1,040	*1,390	*1,230	1,450	1,920	2,420	2,330	2,340	2,100
16	912	742	800	1,040	1,040	1,240	1,490	1,930	2,390	2,410	2,330	*2,100
17	768	742	*774	1,040	980	1,230	1,500	1,900	*2,360	2,480	2,310	2,040
18	735	787	735	1,040	972	1,160	1,500	1,810	2,340	2,500	2,280	1,950
19	*728	856	735	1,030	956	1,140	1,500	1,780	2,300	2,490	2,250	1,840
20	709	863	774	1,020	940	1,130	1,500	1,780	2,240	2,460	2,240	1,570
21	702	849	768	988	926	1,130	1,510	1,800	2,250	2,440	2 200	1,500
22	696	828	761	980	933	1,120	1,510	1,900	2,330	2,430	2,180	1,450
23	690	828	761	1,030	933	1,100	1,500	1,940	2,380	2,440	2,170	1,380
24	683	828	780	1,040	933	1,310	1,460	1,970	2,410	2,450	2,160	1,360
25	683	828	800	1,040	926	1,540	1,460	2,020	2,380	2,520	2,150	1,300
26	676	821	780	1,040	919	1,560	1,470	2,020	2,300	2,590	2,150	1,310
27	676	807	742	1,040	912	1,570	1,460	2,050	2,260	2,600	2,150	1,300
28	676	761	768	1,040	956	1,600	1,450	2,050	2,250	2,580	2,140	1,240
29	676	754	774	1,030	-	1,630	1,470	2,040	2,210	2,530	2,130	1,180
30	676	748	800	1,050	------	1,630	1,470	2,040	2,140	2,510	2,120	1,180
31	676	------	828	1,060	------	1,510	------	2,030	------	2,460	2,110	------
Total	33,732	22,207	24,213	30,179	30,976	38,648	42,400	55,300	69,690	71,560	71,230	53,420
Mean	1,088	740	781	974	1,106	1,247	1,413	1,784	2,323	2,308	2,298	1,781
Ac-ft	66,910	44,050	48,030	59,860	61,440	76,660	84,100	109,700	138,200	141,900	141,300	106,000

Calendar year 1954: Max 2,650 Min 670 Mean 1,616 Ac-ft 1,170,000
Water year 1954-55: Max 2,600 Min 670 Mean 1,489 Ac-ft 1,078,000

* Discharge measurement made on this day.

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

Records of monthly discharge of these canals, published as a group, are available from October 1926 to September 1955; records for each canal published separately prior to 1926.

Diversions, in acre-feet, water year October 1954 to September 1955

Month	Arnold Canal	Central Oregon Canal	Deschutes County Municipal Improvement District Canal	North Unit Main Canal	North Canal	Swalley Canal	Total
October	3,920	21,070	2,980	9,510	18,910	4,140	60,530
November	1,780	1,640	0	0	1,330	1,490	6,240
December	549	2,030	0	0	817	680	4,080
January	389	2,280	0	0	2,420	609	5,700
February	192	2,250	0	0	2,260	452	5,150
March	926	8,350	0	20,720	5,160	962	36,120
April	3,210	15,850	827	29,690	24,310	3,870	77,760
May	5,530	30,550	3,650	31,870	28,440	5,800	105,800
June	6,620	35,660	1,040	52,030	32,490	7,250	135,100
July	7,070	37,870	4,200	49,650	34,200	7,230	140,200
August	7,100	37,790	7,620	47,450	34,210	7,540	141,700
September	5,710	30,940	6,150	24,690	27,440	6,870	101,800
Water year 1954-55	43,000	226,300	26,470	265,600	212,000	46,890	820,200

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 1955.

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.--41 years, 595 cfs (430,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,620 cfs Feb. 14 (gage height, 3.66 ft); minimum, 18 cfs Apr. 16.
1914-55: 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 good. Six large canals divert water above station for irrigation (see preceding page). 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. 67).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 14				Feb. 15 to Sept. 30			
1.3	58	2.0	310	1.0	21	2.0	320
1.5	102	3.0	990	1.3	62	3.0	990
1.7	165	3.7	1,660	1.6	145	3.6	1,550

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	370	662	718	704	1,050	790	355	234	62	177	75	36
2	300	648	690	655	1,120	812	355	198	75	157	73	35
3	270	641	725	718	1,090	910	284	198	82	138	54	33
4	260	648	739	798	1,080	950	145	161	185	100	52	30
5	230	641	718	805	1,070	1,040	121	114	221	84	*48	37
6	245	627	739	798	1,070	1,100	135	121	165	121	50	36
7	270	627	739	820	1,090	1,070	103	114	95	89	55	36
8	265	634	746	926	1,160	1,090	89	145	60	92	64	32
9	270	634	760	974	1,300	1,130	145	145	*52	121	57	30
10	290	634	768	990	1,370	1,170	*234	106	66	169	55	29
11	300	627	775	998	1,420	1,030	306	177	77	153	47	38
12	290	634	790	1,010	1,480	1,020	221	128	62	77	38	48
13	300	641	798	990	1,520	926	111	142	50	98	57	62
14	280	634	760	990	*1,570	895	75	157	62	92	57	80
15	196	634	620	1,020	1,460	926	84	198	77	*57	48	118
16	255	676	568	1,040	1,070	790	115	262	118	77	42	190
17	151	669	669	1,040	1,010	620	135	325	108	84	35	239
18	116	732	711	1,050	982	548	108	266	138	69	*35	190
19	122	820	718	1,030	974	503	106	190	118	62	32	128
20	113	842	*746	1,030	958	430	95	103	71	60	37	164
21	90	828	725	998	934	288	106	103	60	44	41	198
22	92	798	711	916	888	221	121	153	87	40	37	181
23	100	798	683	768	630	181	125	114	106	45	35	114
24	95	790	434	782	510	302	77	89	181	54	32	121
25	83	790	424	732	510	382	73	100	257	75	31	111
26	68	782	466	711	478	284	73	89	198	60	30	98
27	68	490	732	683	490	262	82	103	177	71	31	135
28	62	270	746	760	605	194	108	177	177	66	31	138
29	62	260	760	918	-	216	173	198	221	75	35	73
30	62	355	790	1,050	------	252	239	125	190	82	40	71
31	163	------	828	1,050	------	275	------	71	------	69	47	------
Total	5,838	19,466	21,796	27,754	28,889	20,607	4,499	4,806	3,598	2,758	1,401	2,831
Mean	188	649	703	895	1,032	665	150	155	120	89.0	45.2	94.4
Ac-ft	11,580	38,610	43,230	55,050	57,300	40,870	8,920	9,530	7,140	5,470	2,780	5,620

Calendar year 1954: Max 1,640 Min 42 Mean 619 Ac-ft 447,800
Water year 1954-55: Max 1,570 Min 29 Mean 395 Ac-ft 286,100

* 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 1955.

Gage.--Water-stage recorder. Datum of gage is 3,566.82 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.--37 years (1913-14, 1916-21, 1923-35, 1936-55), 102 cfs (73,840 acre-ft per year).

Extremes.--Maximum discharge during year, 584 cfs June 11; minimum daily, 54 cfs Mar. 31, Apr. 2, 3.
1906-8, 1911-55: 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 Oct. 19 to May 29, Aug. 29 to Sept. 30. Crater Creek Canal diverts flow of tributaries of Soda Creek into head of Tumalo Creek.

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

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	82	65	72	70	68	56	60	154	165	*112	87
2	81	82	66	70	67	70	54	61	157	145	106	82
3	78	82	67	70	66	66	54	61	189	129	96	80
4	78	80	67	70	66	65	57	64	224	123	88	78
5	79	80	68	70	68	62	56	66	252	132	92	78
6	79	82	72	70	67	60	57	73	289	130	90	75
7	81	82	70	70	68	61	*61	75	314	134	92	72
8	*80	82	70	70	68	*62	62	*78	340	152	94	70
9	78	82	70	68	67	62	66	85	392	159	91	66
10	87	80	70	*66	66	62	67	94	*448	*151	87	66
11	86	82	70	65	66	62	62	109	521	142	87	67
12	84	83	70	66	66	62	61	117	519	174	86	68
13	83	82	72	70	64	62	61	111	480	222	85	70
14	83	82	*70	70	*62	62	61	105	412	262	84	84
15	83	83	70	70	62	62	61	105	347	275	85	86
16	81	80	70	70	64	62	60	103	296	255	84	*87
17	84	80	70	70	66	60	58	103	281	188	83	76
18	73	78	70	70	65	60	58	109	296	176	83	70
19	83	78	70	68	62	60	60	126	308	169	85	67
20	85	76	70	70	60	60	60	160	324	164	85	66
21	111	*73	68	70	60	58	60	180	362	150	84	64
22	124	72	68	70	62	57	61	170	365	148	85	64
23	94	72	68	68	64	57	58	182	313	140	81	66
24	87	72	68	68	65	56	58	145	268	153	81	66
25	85	76	67	68	66	57	58	152	250	132	80	62
26	80	73	66	68	68	57	60	150	249	119	81	62
27	80	70	65	67	68	56	60	145	261	130	79	61
28	80	68	68	67	70	57	80	155	308	112	74	62
29	80	66	70	67	-	60	60	185	218	103	89	62
30	80	65	72	68	------	56	60	201	200	116	90	61
31	82	------	75	70	------	54	------	182	------	115	88	------
Total	2,610	2,325	2,142	2,136	1,833	1,875	1,787	3,672	9,337	4,865	2,707	2,125
Mean	84.2	77.5	69.1	68.9	65.5	60.5	59.6	118	311	157	87.3	70.8
Ac-ft	5,180	4,610	4,250	4,240	3,640	3,720	3,540	7,280	18,520	9,650	5,370	4,210

Calendar year 1954: Max 359 Min 65 Mean 123 Ac-ft 89,330
Water year 1954-55: Max 521 Min 54 Mean 103 Ac-ft 74,210

* Discharge measurement made on this day.

Note.--No gage-height record on river station Nov. 16-20, Feb. 13, Sept. 10-15; discharge estimated on basis of weather records at Bend, recorded range in stage, records for Squaw Creek near Sisters, and unpublished records for Tumalo feed canal. Stage-discharge relation affected by ice Nov. 29 to Dec. 3, Dec. 10, 11, 16-21, 26-30, Jan. 2-12, 14, 15, 20, 28, Feb. 3, 4, 10-12, 18-25, Mar. 3-7, 14-17, 20.

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 1955.

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.--43 years (1906-18, 1919-20, 1925-55), 104 cfs (75,290 acre-ft per year).

Extremes.--Maximum discharge during year, 438 cfs June 11 (gage height, 2.58 ft); maximum gage height, 3.10 ft Jan. 11 (backwater from ice); minimum discharge, 33 cfs Mar. 1, 22, Apr. 4.
1906-55: 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.--WSP 1218: Drainage area.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Aug. 25 to Sept. 30)

Oct. 1 to Jan. 13		Jan. 14 to Sept. 30	
1.2	41	1.0	34
1.5	102	1.5	130
1.7	150	2.0	260
		2.5	410

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	70	50	64	42	34	42	40	140	175	*168	82
2	76	68	54	60	40	40	39	40	145	162	162	84
3	76	66	56	60	40	44	37	*42	170	155	148	84
4	74	66	58	60	42	45	37	45	208	158	142	86
5	*74	64	60	60	44	40	37	52	239	160	140	88
6	74	66	60	56	45	40	39	55	269	158	140	92
7	89	64	58	55	47	42	42	59	293	160	142	92
8	78	66	56	55	52	45	*45	63	317	*175	148	*88
9	72	66	56	54	44	45	54	63	335	175	140	80
10	89	64	55	*52	42	44	52	72	389	170	130	78
11	91	74	55	50	40	*44	47	88	404	172	130	76
12	80	70	56	52	40	42	47	92	395	188	130	72
13	76	66	58	55	42	42	47	82	*362	215	121	80
14	74	74	*60	50	45	40	45	72	323	254	117	92
15	74	74	58	50	*45	40	44	68	281	272	112	84
16	74	64	55	50	47	40	44	64	251	251	112	94
17	76	70	54	50	47	40	40	63	251	200	110	72
18	70	70	52	50	46	40	42	78	269	195	110	66
19	76	70	50	50	45	40	40	102	269	195	115	63
20	76	70	52	50	40	40	40	121	278	192	112	61
21	140	*70	55	*50	42	40	44	128	302	192	110	57
22	125	70	58	47	45	37	45	123	299	195	106	57
23	95	68	56	45	45	40	44	123	266	195	100	57
24	84	66	54	42	45	42	42	117	228	192	96	55
25	80	74	50	42	42	44	40	115	210	175	90	55
26	78	66	50	42	40	39	40	112	210	175	88	54
27	78	62	52	42	38	37	40	110	212	175	84	52
28	76	56	55	42	36	40	39	115	248	162	82	57
29	74	54	58	43	-	44	39	140	195	165	82	55
30	72	50	60	44	------	39	40	168	188	178	84	54
31	70	------	65	44	------	39	------	150	------	160	84	------
Total	2,517	1,998	1,726	1,566	1,208	1,268	1,273	2,762	7,946	5,746	3,635	2,167
Mean	81.2	66.6	55.7	50.5	43.1	40.9	42.4	89.1	265	185	117	72.2
Ac-ft	4,990	3,960	3,420	3,110	2,400	2,520	2,520	5,480	15,760	11,400	7,210	4,300

Calendar year 1954: Max 341 Min 50 Mean 123 Ac-ft 88,700
Water year 1954-55: Max 404 Min 34 Mean 92.6 Ac-ft 67,070

Peak discharge (base, 300 cfs).--June 11 (8 p.m.) 438 cfs (2.58 ft); July 15 (8:30 p.m.) 347 cfs (2.29 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 19, 20, Dec. 1-13, Dec. 27 to Jan. 9, Jan. 18-20; discharge estimated on basis of weather records at Bend, recorded range in stage, and records for Tumalo Creek near Bend and Lake Creek near Sisters. Stage-discharge relation affected by ice Dec. 16-23, 25-26, Jan. 10-17, 26-29, Feb. 2-4, 10-13, 18-23, 25-28, Mar. 4-8, 13-18, 20, 23, 24.

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 upstream from Crooked River, 4 miles northwest of Culver, and at mile 116.5.

Drainage area.--2,723 sq mi.

Records available.--July 1952 to September 1955.

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

Extremes.--Maximum discharge during year, 2,180 cfs Feb. 14 (gage height, 4.16 ft); minimum, 446 cfs Aug. 21 (gage height, 1.24 ft).
1952-55: Maximum discharge, 2,330 cfs Nov. 23, 1953 (gage height, 4.37 ft); minimum, that of Aug. 21, 1955.

Remarks.--Records excellent. Slight regulation by Crescent Lake, Crane Prairie, and Wickiup Reservoirs (see p. 67). Many diversions for irrigation above station. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.2	430
2.0	760
3.0	1,320
4.2	2,210

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	796	693	992	1,330	1,590	1,240	738	674	514	618	506	466
2	769	1,080	1,220	1,150	1,600	1,320	796	662	502	598	506	474
3	710	1,090	1,240	1,190	1,660	1,370	792	634	530	590	498	462
4	688	1,090	1,290	1,270	1,630	1,480	692	630	550	570	494	458
5	679	1,090	1,270	1,320	1,630	1,470	606	610	684	542	478	458
6	662	1,090	1,270	1,320	1,600	1,660	574	570	715	522	474	458
7	674	1,100	1,270	1,300	1,630	1,650	594	570	674	*558	470	462
8	688	1,100	*1,270	1,380	1,650	1,620	562	554	630	534	478	466
9	679	1,110	1,290	1,500	1,800	1,660	542	582	602	530	486	466
10	702	1,120	1,260	1,530	1,880	1,620	578	590	646	554	478	466
11	715	1,110	1,260	1,510	1,970	1,640	670	542	760	598	482	462
12	724	1,100	1,310	*1,560	2,040	1,400	706	610	805	586	478	458
13	728	1,100	1,340	1,540	2,070	*1,480	*679	578	751	510	466	466
14	733	1,100	1,340	1,510	2,140	1,370	602	582	646	534	474	502
15	697	1,100	1,200	1,560	2,070	1,390	514	618	602	558	490	514
16	642	1,160	1,030	1,590	1,760	1,320	518	658	570	538	474	566
17	688	1,190	1,040	1,590	1,510	1,200	550	728	574	542	*470	638
18	602	1,190	1,140	1,590	1,470	1,070	578	760	558	514	466	662
19	574	1,300	1,190	1,590	1,510	1,020	550	697	578	502	458	622
20	582	1,340	1,240	1,580	1,510	960	558	630	574	490	458	582
21	*570	1,290	1,290	1,570	1,490	875	562	566	542	482	454	586
22	610	1,250	1,260	1,510	1,490	760	566	*558	558	474	458	628
23	618	1,240	1,270	1,310	1,380	706	566	614	594	466	462	622
24	582	1,240	1,150	1,220	1,100	674	570	578	574	466	458	566
25	570	1,280	890	1,220	984	855	526	542	606	466	458	574
26	550	1,310	905	1,190	1,020	825	522	550	670	490	458	558
27	522	1,220	1,030	1,210	1,010	782	510	538	630	494	458	546
28	522	865	1,260	1,180	1,010	742	530	542	626	494	454	574
29	514	792	1,320	1,370	-	674	554	626	638	494	454	594
30	514	760	1,300	1,550	------	670	630	666	650	498	458	538
31	510	------	1,350	1,800	------	692	------	610	------	514	462	------
Total	19,814	33,500	37,487	43,840	44,204	36,195	17,935	18,869	18,553	16,326	14,618	15,892
Mean	639	1,117	1,209	1,414	1,579	1,168	598	609	618	527	472	530
Ac-ft	39,300	66,450	74,350	86,960	87,680	71,790	35,570	37,430	36,800	32,380	28,990	31,520

Calendar year 1954: Max 2,250 Min 510 Mean 1,114 Ac-ft 806,800
Water year 1954-55: Max 2,140 Min 454 Mean 869 Ac-ft 629,200

* Discharge measurement made on this day.

Beaver Creek near Paulina, Oreg.

Location.--Lat 44°09'50", long 119°55'20", in NE¼ sec. 26, T. 16 S., R. 23 E., on right bank three-quarters of a mile downstream from Paulina Creek, 1¼ miles downstream from Wolf Creek, and 3 miles northeast of Paulina.

Drainage area.--450 sq mi, approximately.

Records available.--October 1945 to September 1955 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.--13 years (1942-55), 98.0 cfs (70,950 acre-ft per year).

Extremes.--Maximum discharge during year, 781 cfs Mar. 28 (gage height, 3.46 ft); minimum, 0.4 cfs Aug. 6-8.
1941-55: 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. No regulation. Diversions for irrigation of about 6,400 acres above station. Two small ditches divert above station for irrigation of about 250 acres below station.

Revisions.--WSP 1348: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.1	0.3	1.2	77
.2	2.0	1.5	131
.3	4.8	2.0	260
.5	13	2.8	535
.8	34		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	7.8	9.4	28	13	17	281	110	12	3.0	1.5	5.2
2	5.5	7.8	11	19	13	18	227	127	5.8	4.2	1.5	5.2
3	5.5	7.8	14	16	14	18	142	136	4.2	2.7	1.5	4.8
4	5.2	7.8	14	13	13	18	103	133	3.9	2.4	.9	4.8
5	5.2	7.8	16	13	13	17	82	154	2.7	2.7	.6	4.8
6	5.5	8.2	17	13	13	16	110	176	2.4	*3.0	.4	4.5
7	5.5	8.2	*16	12	13	17	208	184	2.0	2.7	.4	4.5
8	5.5	8.2	14	11	14	38	278	174	1.5	3.0	.4	4.5
9	6.6	8.2	13	12	16	64	308	128	1.1	3.6	.5	4.5
10	7.0	8.6	13	12	18	65	281	96	1.1	2.7	.5	4.5
11	7.0	8.6	11	*13	19	77	232	94	1.3	2.2	.5	4.5
12	7.0	9.0	11	13	18	*72	*176	90	.9	2.2	.5	4.5
13	7.4	9.0	13	13	18	53	138	84	.9	2.0	.5	4.5
14	7.4	9.4	14	14	17	38	129	70	.9	2.0	.6	4.5
15	7.4	10	14	14	17	32	118	55	.9	1.5	.5	4.5
16	7.4	10	11	14	17	32	105	58	1.7	1.3	.5	5.2
17	7.4	9.9	9.4	13	17	34	106	83	1.5	1.1	.5	4.8
18	7.4	10	9.0	13	17	39	106	77	.7	1.3	*.5	3.9
19	*7.4	11	9.0	14	16	46	86	58	.7	1.3	.5	3.6
20	7.8	11	9.4	13	16	38	80	60	.7	1.1	.5	3.9
21	7.8	11	9.4	14	15	35	77	*65	.6	1.3	.6	3.9
22	7.8	11	9.4	14	16	36	112	65	.6	1.1	.6	3.9
23	7.8	11	9.4	14	16	47	123	58	.9	1.3	.5	3.9
24	7.8	11	11	14	17	86	114	50	1.5	1.1	.5	3.9
25	7.8	11	10	14	17	94	116	38	1.7	1.1	.5	3.9
26	7.8	11	10	14	17	135	110	28	1.7	1.1	.5	3.9
27	7.8	12	9.0	13	17	193	94	26	1.5	1.5	.5	3.6
28	7.8	12	9.0	12	17	530	86	28	1.5	1.3	.6	3.3
29	7.8	11	9.9	12	-	504	101	18	2.4	1.3	.6	3.6
30	7.8	10	12	12	------	290	106	16	2.2	1.3	.6	3.6
31	8.2	------	20	12	------	164	------	21	------	1.5	4.1	------
Total	216.8	289.3	367.3	428	444	2,863	4,335	2,562	61.5	59.9	22.9	128.7
Mean	6.99	9.64	11.8	13.8	15.9	92.4	144	82.6	2.05	1.93	0.74	4.29
Ac-ft	430	574	729	849	881	5,680	8,600	5,080	122	119	45	255

Calendar year 1954: Max 926 Min 0.3 Mean 65.3 Ac-ft 47,260
Water year 1954-55: Max 530 Min 0.4 Mean 32.3 Ac-ft 23,360

Peak discharge (base, 600 cfs).--Mar. 28 (9 p.m.) 781 cfs (3.46 ft).
* Discharge measurement made on this day.

Crooked River near Post, Oreg.

Location.--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 1955.

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.--15 years (1940-55), 330 cfs (238,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,550 cfs Apr. 8 (gage height, 4.01 ft); minimum, 4.5 cfs Aug. 31.
1908-11, 1939-55: Maximum discharge, 7,550 cfs Mar. 26, 1952 (gage height, 7.31 ft), from rating curve extended above 3,800 cfs; minimum, 4 cfs Aug. 20, 1953.

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

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.8	5	2.5	350
1.0	16	3.0	570
1.2	32	3.5	980
1.5	74	4.0	1,540
2.0	185		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	57	60	85	75	95	457	582	203	27	9.5	7.5
2	42	58	70	80	75	95	484	644	180	27	9.0	7.5
3	42	57	75	65	70	90	346	665	169	26	8.5	7.5
4	42	57	78	55	65	80	266	740	197	24	8.5	8.0
5	42	55	74	60	65	80	218	970	177	26	8.5	8.5
6	43	57	78	60	75	80	266	1,180	163	*38	7.0	8.5
7	42	58	*68	60	80	80	573	1,180	148	38	8.0	8.5
8	42	58	70	60	85	104	980	1,200	127	35	7.5	8.5
9	42	58	55	60	90	130	1,140	950	106	32	8.5	8.5
10	38	61	45	65	85	132	1,180	920	90	41	7.5	8.0
11	41	61	50	*65	80	139	930	970	76	48	7.5	7.5
12	43	64	70	65	85	*153	*672	940	61	41	8.0	7.5
13	45	66	70	65	85	146	637	716	50	35	8.5	8.0
14	48	68	70	65	85	116	565	550	45	30	9.0	11
15	48	72	70	65	85	100	439	470	43	27	9.0	12
16	48	78	45	65	85	88	406	498	42	25	9.5	15
17	47	76	45	65	85	92	374	520	39	21	9.5	15
18	44	69	45	65	85	98	343	511	37	19	*9.5	15
19	*48	72	50	60	80	116	287	565	34	17	8.5	13
20	48	69	60	65	75	104	259	644	31	15	8.0	13
21	51	66	60	70	80	94	444	*732	27	13	9.0	12
22	51	64	60	70	80	98	700	612	24	13	8.5	13
23	52	64	60	75	85	116	624	516	22	12	8.5	13
24	52	63	60	75	85	125	600	444	23	11	9.0	14
25	52	64	60	75	85	188	520	378	22	11	8.5	16
26	52	63	65	70	85	233	488	329	22	11	8.0	17
27	55	63	40	65	95	326	382	301	23	13	8.0	17
28	54	63	60	65	95	646	382	259	24	13	8.0	16
29	55	55	80	75	-	880	488	239	24	12	8.5	16
30	55	50	85	75	----	618	493	252	24	11	8.5	16
31	55	-----	85	75	------	398	-----	236	------	11	7.5	------
Total	1,460	1,886	1,963	2,085	2,285	5,840	15,943	19,713	2,253	723	261.5	348.0
Mean	47.1	62.9	63.3	67.3	81.6	188	531	636	75.1	23.3	8.44	11.6
Ac-ft	2,900	3,740	3,890	4,140	4,530	11,580	31,620	39,100	4,470	1,430	519	690

Calendar year 1954: Max 3,060 Min 7.5 Mean 237 Ac-ft 171,500
Water year 1954-55: Max 1,200 Min 7.0 Mean 150 Ac-ft 108,600

Peak discharge (base, 2,000 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to Dec. 3, Dec. 8 to Mar. 7.

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 1955. 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.--20 years (1908-14, 1941-55), 376 cfs (272,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,530 cfs Apr. 10 (gage height, 4.06 ft); minimum, 0.5 cfs Aug. 15.
1908-14, 1940-55: 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 table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.89	0.6	1.6	52
.9	.7	2.0	128
1.0	1.7	2.5	281
1.1	4.5	3.0	565
1.2	10	4.0	1,460
1.3	18		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	62	48	106	86	b110	409	565	226	23	4.1	2.3
2	43	63	65	90	86	b110	509	658	201	24	6.9	2.3
3	42	63	75	86	84	b100	457	702	177	30	6.9	2.3
4	43	63	84	60	79	b100	350	734	166	32	6.4	2.1
5	44	63	88	57	77	b100	281	902	186	30	4.5	1.9
6	44	63	86	79	81	b95	236	1,200	169	*31	2.3	1.9
7	43	63	*b80	72	86	94	370	1,260	145	56	1.6	1.7
8	42	63	b70	70	96	130	762	1,320	128	62	1.7	1.6
9	44	65	b75	b75	106	147	1,160	1,120	110	65	1.9	1.6
10	47	66	b60	b75	110	163	1,220	984	96	60	1.9	1.6
11	47	68	51	*b75	104	*174	1,090	984	72	55	2.3	1.7
12	44	73	79	b75	100	166	*790	1,010	63	62	1.4	1.9
13	52	72	82	b75	102	172	672	875	49	63	.9	2.1
14	54	75	82	b75	106	158	658	695	44	55	.6	3.1
15	52	75	79	b75	110	130	551	579	40	48	1.2	3.8
16	60	77	50	b75	115	115	450	544	36	40	2.8	4.5
17	52	81	53	b75	b110	106	420	593	37	36	2.6	4.5
18	51	81	51	b75	b100	108	386	600	34	30	1.9	3.8
19	*51	77	54	b75	90	113	350	642	26	28	*1.7	3.8
20	51	77	68	b70	90	128	294	672	27	24	1.6	3.4
21	52	77	68	79	90	119	290	*766	24	15	1.4	2.8
22	55	73	70	86	102	110	600	750	20	15	1.3	2.3
23	58	73	77	90	100	113	688	628	19	11	1.2	2.1
24	58	72	73	90	102	135	635	544	16	7.4	1.1	1.9
25	58	72	63	88	104	152	600	469	19	5.4	1.0	1.7
26	57	72	72	86	104	213	530	403	20	5.8	1.0	1.9
27	57	72	43	77	b110	262	482	350	22	8.9	1.2	1.9
28	57	72	55	75	b110	375	392	307	24	8.6	1.7	2.1
29	60	b70	70	75	-	824	450	262	27	9.4	2.1	2.1
30	62	b65	82	81	------	750	523	247	23	9.4	2.6	2.3
31	62	------	92	84	------	523	------	247	------	4.8	2.3	------
Total	1,586	2,108	2,145	2,426	2,740	6,095	16,605	21,612	2,246	952.7	72.1	73.0
Mean	51.2	70.3	69.2	78.3	97.9	197	553	697	74.9	30.7	2.33	2.43
Ac-ft	3,150	4,180	4,250	4,810	5,430	12,090	32,940	42,870	4,450	1,890	143	145

Calendar year 1954: Max 3,440 Min 1.6 Mean 269 Ac-ft 195,000
Water year 1954-55: Max 1,320 Min 0.6 Mean 161 Ac-ft 116,300

Peak discharge (base, 2,500 cfs).--No peak above base.
* 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 1955.

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. Aug. 2-27, 1945, staff gage at present site at datum 1.11 ft higher.

Average discharge.--38 years, 1,519 cfs (1,100,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,760 cfs May 8 (gage height, 4.14 ft); minimum, 1,130 cfs June 25; minimum daily, 1,320 cfs Aug. 3-5, 8-12.
1917-55: 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; 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 1955 are given in WSP 1403.

Revisions (water years).--WSP 864: 1922, 1925, 1928, 1932, 1936-37.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 10		Apr. 11 to Sept. 30	
2.6	1,370	2.4	1,260
3.0	1,640	3.0	1,690
4.0	2,520	4.0	2,610

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,410	1,480	1,410	1,420	1,400	1,520	1,820	1,950	1,600	1,370	1,350	1,380
2	1,420	1,440	1,380	1,440	1,390	1,480	1,700	1,990	1,560	1,380	1,340	1,380
3	1,420	1,410	1,390	1,460	1,400	1,460	1,780	2,060	1,560	1,380	1,320	1,390
4	1,430	1,410	1,410	1,440	1,390	1,430	1,720	2,060	1,530	1,390	1,320	1,400
5	1,440	1,410	1,420	1,400	1,400	1,410	1,660	2,070	1,520	*1,380	1,320	1,390
6	1,460	1,410	*1,430	1,400	1,390	1,430	1,630	2,250	1,530	1,420	1,340	1,380
7	1,450	1,410	1,430	1,390	1,390	1,400	1,500	2,510	1,490	1,400	1,330	1,390
8	1,450	1,410	1,420	1,410	1,390	1,410	1,590	2,510	1,480	1,420	1,320	1,400
9	1,440	1,410	1,420	1,410	1,390	1,430	2,010	2,580	1,420	1,420	1,320	1,400
10	1,440	1,410	1,420	*1,410	1,410	1,450	2,430	2,350	1,400	1,420	1,320	1,400
11	1,440	1,420	1,400	1,400	1,410	1,460	*2,500	2,270	1,380	1,420	1,320	1,400
12	1,450	1,420	1,400	1,400	1,410	1,530	2,370	2,290	1,370	1,410	1,320	1,400
13	1,450	1,420	1,400	1,400	1,410	1,570	2,150	2,310	1,350	1,380	1,330	1,410
14	1,460	1,430	1,420	1,400	1,410	*1,480	2,060	2,180	1,350	1,380	1,330	1,420
15	1,480	1,430	1,410	1,410	1,410	1,460	2,000	2,060	1,340	1,380	1,340	1,420
16	1,470	1,420	1,420	1,400	1,410	1,440	1,880	1,980	1,360	1,390	*1,340	1,480
17	1,460	1,430	1,390	1,400	1,420	1,420	1,810	2,000	1,360	1,380	1,350	1,540
18	1,480	1,420	1,390	1,400	1,410	1,410	1,780	2,010	1,360	1,380	1,350	1,540
19	1,500	1,420	1,390	1,390	1,390	1,410	1,740	2,010	1,350	1,400	1,340	1,530
20	*1,480	1,420	1,400	1,390	1,400	1,430	1,730	*2,030	1,350	1,390	1,340	1,520
21	1,480	1,420	1,400	1,390	1,410	1,450	1,670	2,040	1,350	1,360	1,350	1,500
22	1,470	1,410	1,400	1,390	1,410	1,450	1,670	2,100	1,340	1,340	1,360	1,480
23	1,470	1,410	1,410	1,400	1,410	1,440	1,970	2,080	1,340	1,340	1,360	1,530
24	1,470	1,410	1,410	1,410	1,410	1,420	2,020	1,980	1,340	1,350	1,360	1,510
25	1,470	1,410	1,420	1,420	1,450	1,460	2,020	1,910	1,340	1,350	1,360	1,500
26	1,470	1,400	1,440	1,440	1,480	1,520	2,000	1,900	1,340	1,350	1,360	1,480
27	1,470	1,400	1,410	1,450	1,460	1,530	1,930	1,840	1,360	1,350	1,360	1,470
28	1,480	1,400	1,420	1,480	1,470	1,570	1,910	1,780	1,360	1,360	1,370	1,440
29	1,480	1,410	1,400	1,470	-	1,740	1,860	1,730	1,360	1,380	1,380	1,400
30	1,480	1,410	1,410	1,450	------	2,150	1,910	1,660	1,370	1,380	1,380	1,400
31	1,480	-------	1,420	1,430	------	2,040	------	1,620	------	1,380	1,390	------
Total	45,250	42,510	43,690	43,900	39,530	46,800	56,820	64,110	42,160	42,830	41,670	43,260
Mean	1,460	1,417	1,409	1,416	1,412	1,510	1,894	2,068	1,405	1,382	1,344	1,442
Ac-ft	89,750	84,320	86,660	87,070	78,410	92,830	112,700	127,200	83,620	84,950	82,650	85,800

Calendar year 1954: Max 4,460 Min 1,350 Mean 1,672 Ac-ft 1,210,000
Water year 1954-55: Max 2,580 Min 1,320 Mean 1,514 Ac-ft 1,096,000

* 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 1955.

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.--39 years (1915-18, 1919-55), 50.9 cfs (36,850 acre-ft per year).

Extremes.--Maximum discharge during year, 169 cfs June 13, 14 (gage height, 2.44 ft); minimum, 22 cfs Aug. 22 (gage height, 0.80 ft).
1911-13, 1915-55: 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 fair. No diversion above station; occasional regulation by storage in Suttle Lake.

Revisions (water years).--WSP 1124: 1943, 1947. WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	27
1.0	33
1.5	67
2.0	113
2.5	178

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	43	36	47	40	46	43	50	101	80	*43	36
2	43	41	35	46	40	48	43	49	100	84	43	37
3	40	37	37	45	40	47	43	*48	97	73	42	37
4	43	32	38	44	40	46	34	48	95	69	41	37
5	*42	32	37	44	40	45	29	47	96	65	41	38
6	42	32	38	43	40	44	49	47	100	61	43	38
7	41	34	38	44	40	43	58	48	105	60	42	39
8	41	40	38	44	41	42	*54	47	121	*61	41	*39
9	41	38	38	44	42	42	52	48	136	61	41	38
10	41	39	38	*43	41	42	52	51	150	59	41	38
11	41	38	38	43	41	43	51	53	163	58	42	38
12	41	38	38	42	42	44	51	60	164	58	41	38
13	42	38	38	43	42	45	46	62	*168	58	41	38
14	42	40	*38	43	41	46	41	63	168	56	41	38
15	41	40	41	43	*41	45	42	70	160	54	40	39
16	41	40	40	43	42	43	43	73	150	53	40	41
17	40	41	40	43	42	43	44	73	141	53	38	41
18	42	41	40	42	41	42	45	72	131	51	32	40
19	42	40	39	41	41	42	46	71	122	47	34	40
20	44	40	40	42	41	41	47	74	102	44	29	39
21	44	*38	40	41	41	41	48	74	92	44	28	38
22	43	36	40	41	41	44	49	77	129	42	29	38
23	43	34	40	41	41	45	49	81	121	43	35	39
24	43	34	40	40	41	46	48	90	111	43	35	39
25	42	35	41	40	42	46	48	96	105	43	35	38
26	42	35	41	40	43	46	50	101	100	44	34	38
27	42	36	41	39	43	44	51	98	95	44	35	38
28	42	37	41	39	43	44	51	95	77	43	35	38
29	41	36	41	39	-	44	51	92	71	44	35	38
30	40	35	43	39	------	44	51	92	73	44	35	38
31	42	------	47	39	------	44	------	99	------	43	35	------
Total	1,298	1,120	1,220	1,307	1,153	1,367	1,409	2,149	3,544	1,682	1,167	1,151
Mean	41.9	37.3	39.4	42.2	41.2	44.1	47.0	69.3	118	54.3	37.6	38.4
Ac-ft	2,570	2,220	2,420	2,590	2,290	2,710	2,790	4,260	7,030	3,340	2,310	2,280

Calendar year 1954: Max 107 Min 32 Mean 61.1 Ac-ft 44,200
Water year 1954-55: Max 168 Min 28 Mean 50.9 Ac-ft 36,810

* 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 1955. Prior to October 1921, published as "at Hubbards Ranch."

Gage.--Water-stage recorder. Datum of gage is 1,910 ft above mean sea level (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 present datum.

Average discharge.--34 years (1921-55), 1,449 cfs (1,049,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,230 cfs June 11 (gage height, 1.22 ft); minimum, 1,350 cfs Mar. 5.
1921-55: Maximum discharge, 5,780 cfs Jan. 7, 1923 (gage height, 3.32 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 good. No regulation or diversion above station. Stream is spring fed. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.4	1,310
1.0	1,980
1.2	2,200

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,550	1,510	1,450	1,520	1,450	1,460	1,490	1.520	1,680	1,700	1,600	1,390
2	1,550	1,500	1,450	1,500	1,440	1,450	1,480	1,520	1,680	1,670	1,600	1,400
3	1,550	1,500	1,460	1,490	1,440	1,440	1,460	1,510	1,740	1,660	1,550	1,400
4	1,550	1,490	1,460	1,480	1,440	1,430	1,460	1,520	1,830	1,650	1,550	1,410
5	1,550	1,490	1,460	1,480	1,430	1,410	1,450	1,530	1,910	1,640	1,550	1,410
6	1,550	1,490	1,490	1,480	1,440	1,430	1,460	1,540	1,980	1,640	1,550	1,430
7	1,560	1,490	1,480	1,460	1,490	1,430	1,490	1,540	2,000	*1,650	1,550	1,440
8	1,550	1,510	*1,480	1,480	1,520	1,430	1,500	1,550	2,030	1,650	1,550	1,430
9	1,550	1,500	1,480	1,490	1,490	1,420	1,530	1,550	2,100	1,650	1,550	1,430
10	1,560	1,490	1,460	1,480	1,450	1,420	1,530	1,570	2,160	1,650	1,550	1,430
11	1,600	1,490	1,460	1,460	1,450	1,420	1,520	1,600	2,180	1,650	1,550	1,440
12	1,580	1,490	1,460	*1,490	1,450	1,430	1,530	1,620	2,180	1,650	1,550	1,440
13	1,560	1,490	1,490	1,490	1,450	*1,440	*1,520	1,580	2,110	1,650	1,550	1,460
14	1,550	1,510	1,480	1,480	1,450	1,440	1,500	1,570	2,030	1,650	1,550	1,490
15	1,550	1,510	1,480	1,490	1,440	1,430	1,500	1,560	1,950	1,700	1,550	1,510
16	1,550	1,500	1,450	1,490	1,440	1,430	1,500	1,560	1,860	1,700	1,550	1,540
17	1,560	1,540	1,450	1,490	1,440	1,430	1,500	1,560	1,840	1,650	*1,530	1,490
18	1,550	1,530	1,450	1,480	1,430	1,430	1,490	1,570	1,860	1,650	1,520	1,480
19	1,560	1,530	1,450	1,480	1,440	1,420	1,500	1,630	1,850	1,600	1,510	1,460
20	1,550	1,510	1,450	1,480	1,430	1,420	1,510	1,700	1,840	1,600	1,510	1,460
21	*1,640	1,500	1,450	1,480	1,440	1,420	1,510	1,710	1,840	1,600	1,480	1,460
22	1,620	1,500	1,460	1,480	1,440	1,480	1,510	*1,680	1,890	1,600	1,460	1,460
23	1,540	1,490	1,460	1,480	1,440	1,460	1,500	1,680	1,860	1,550	1,450	1,480
24	1,510	1,490	1,460	1,480	1,460	1,490	1,500	1,670	1,780	1,600	1,430	1,460
25	1,510	1,500	1,450	1,460	1,450	1,480	1,510	1,680	1,770	1,600	1,430	1,460
26	1,500	1,490	1,440	1,460	1,450	1,450	1,520	1,700	1,760	1,550	1,410	1,460
27	1,510	1,490	1,430	1,460	1,440	1,450	1,500	1,680	1,780	1,600	1,410	1,460
28	1,510	1,480	1,440	1,460	1,450	1,460	1,520	1,670	1,780	1,600	1,410	1,480
29	1,510	1,480	1,480	1,460	-	1,520	1,520	1,710	1,720	1,600	1,400	1,460
30	1,510	1,460	1,540	1,460	- - - -	1,490	1,520	1,760	1,700	1,600	1,400	1,450
31	1,510	- - - -	1,570	1,460	- - - - -	1,490	- - - - -	1,720	- - - - -	1,600	1,390	- - - - -
Total	48,000	44,950	45,470	45,830	40,580	44,800	45,030	49,960	56,670	50,560	46,640	43,570
Mean	1,548	1,498	1,467	1,478	1,449	1,445	1,501	1,612	1,889	1,631	1,505	1,452
Ac-ft	95,210	89,160	90,190	90,900	80,490	88,860	89,320	99,090	112,400	100,300	92,510	86,420

Calendar year 1954: Max 2,120 Min 1,430 Mean 1,709 Ac-ft 1,237,000
Water year 1954-55: Max 2,180 Min 1,390 Mean 1,540 Ac-ft 1,115,000

* Discharge measurement made on this day.
Note.--No gage-height record July 8 to Aug. 16; discharge estimated on basis of recorded range in stage and records for Deschutes River near Madras.

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, 7½ miles northwest of Madras and at mile 101.6 (river-profile survey).

Drainage area.--7,800 sq mi, approximately (revised).

Records available.--October 1923 to September 1955.

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.--32 years, 4,343 cfs (3,144,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,490 cfs Feb. 15 (gage height, 3.02 ft); minimum, 3,740 cfs Aug. 21, Sept. 11 (gage height, 1.94 ft).
1923-55: 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 1955 are given in WSP 1403.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.9	3,680
3.0	5,460

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,210	4,080	4,290	4,800	4,900	4,640	4,530	4,510	4,310	4,210	4,000	3,760
2	4,230	4,500	4,580	4,590	4,900	4,730	4,450	4,530	4,230	4,180	3,940	3,770
3	4,150	4,480	4,590	4,610	4,970	4,730	4,510	4,560	4,290	4,150	3,890	3,770
4	4,130	4,470	4,640	4,680	4,920	4,780	4,370	4,580	4,390	4,130	3,880	3,770
5	4,120	4,470	4,660	4,680	4,920	4,750	4,180	4,580	4,560	*4,080	3,840	3,770
6	4,100	4,470	*4,700	4,680	4,920	4,930	4,130	4,700	4,730	4,080	3,860	3,770
7	4,130	4,470	4,660	4,630	5,000	4,970	4,040	4,920	4,680	4,100	3,860	3,780
8	4,150	4,480	4,640	4,730	5,040	4,950	4,080	4,950	4,630	4,150	3,830	3,780
9	4,130	4,480	4,660	4,860	5,100	4,980	4,470	5,050	4,610	4,150	3,830	3,780
10	4,160	4,480	4,640	*4,860	5,200	4,980	4,900	4,900	4,700	4,160	3,830	3,770
11	4,190	4,500	4,590	4,850	5,310	5,040	*5,040	4,780	4,850	4,190	3,820	3,760
12	4,190	4,480	4,660	4,880	5,360	4,850	4,970	4,900	4,900	4,190	3,820	3,760
13	4,180	4,480	4,710	4,900	5,390	4,980	4,730	4,860	4,810	4,130	3,820	3,780
14	4,190	4,530	4,750	4,830	5,440	*4,760	4,530	4,750	4,580	4,160	3,800	3,860
15	4,160	4,550	4,590	4,900	5,390	4,810	4,390	4,660	4,450	4,260	3,830	3,880
16	4,080	4,580	4,420	4,920	5,120	4,760	4,270	4,640	4,340	4,230	*3,820	4,020
17	4,150	4,660	4,390	4,920	4,850	4,630	4,210	4,700	4,320	4,150	3,800	4,100
18	*4,070	4,640	4,470	4,920	4,780	4,480	4,190	4,780	4,320	4,080	3,780	4,120
19	4,080	4,730	4,510	4,920	4,800	4,390	4,150	4,750	4,340	4,080	3,780	4,060
20	4,070	4,800	4,580	4,880	4,800	4,310	4,150	*4,750	4,310	4,060	3,770	3,980
21	4,130	4,730	4,630	4,880	4,800	4,210	4,120	4,730	4,260	4,000	3,770	3,940
22	4,190	4,660	4,590	4,830	4,800	4,130	4,120	4,750	4,350	3,980	3,770	3,940
23	4,120	4,640	4,630	4,640	4,680	4,040	4,370	4,810	4,390	3,980	3,780	4,000
24	4,040	4,630	4,550	4,560	4,400	4,020	4,470	4,660	4,290	4,000	3,770	3,920
25	4,020	4,680	4,320	4,560	4,340	4,190	4,430	4,560	4,310	3,980	3,770	3,900
26	4,010	4,710	4,320	4,550	4,400	4,290	4,420	4,580	4,370	3,980	3,770	3,880
27	3,980	4,640	4,340	4,580	4,390	4,240	4,340	4,500	4,320	4,020	3,770	3,860
28	3,980	4,320	4,640	4,560	4,390	4,260	4,340	4,430	4,340	4,000	3,770	3,860
29	3,980	4,180	4,680	4,710	-	4,400	4,320	4,500	4,290	4,010	3,770	3,840
30	3,980	4,150	4,730	4,880	- ----	4,760	4,420	4,560	4,260	4,020	3,760	3,770
31	3,960	------	4,850	4,950	------	4,710	------	4,420	------	4,010	3,770	------
Total	127,260	135,670	142,010	147,740	137,310	142,700	131,640	145,350	133,530	126,900	118,270	115,950
Mean	4,105	4,522	4,581	4,766	4,904	4,603	4,388	4,689	4,451	4,094	3,815	3,865
Ac-ft	252,400	269,100	281,700	293,000	272,400	283,000	261,100	288,300	264,900	251,700	234,600	230,000

Calendar year 1954: Max 9,210 Min 3,960 Mean 5,031 Ac-ft 3,642,000
Water year 1954-55: Max 5,440 Min 3,760 Mean 4,395 Ac-ft 3,182,000

* Discharge measurement made on this day.

White River below Tygh Valley, Oreg.

Location.--Lat 45°14'30", long 121°05'40", in NE¼NE¼ sec. 7, T. 4 S., R. 14 E., on left bank about 200 ft below Pacific Power & Light Co.'s plant at White River Falls and 4 miles east of Tygh Valley. Prior to Oct. 1, 1954, at site 700 ft downstream.

Drainage area.--393 sq mi.

Records available.--October 1917 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 870.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Pacific Power & Light Co.). Prior to July 28, 1931, at site 750 ft downstream at different datum. July 28, 1931 to Sept. 30, 1954, at site 700 ft downstream at different datums.

Average discharge.--38 years, 427 cfs (309,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,910 cfs June 10 (gage height, 4.80 ft); minimum, 13 cfs Aug. 12 (gage height, 0.77 ft); minimum daily, 124 cfs Sept. 12.
1917-55: 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.7	120	3.5	890
2.0	187	4.0	1,240
2.5	350	5.0	2,090
3.0	580		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	177	209	480	212	236	280	342	884	550	215	138
2	142	167	204	382	204	242	284	*350	832	545	207	134
3	142	167	204	331	195	236	280	342	918	490	193	144
4	144	170	201	298	201	218	274	354	1,060	462	193	144
5	*144	170	201	280	209	187	264	399	1,290	448	187	140
6	144	170	212	267	207	230	267	471	1,430	422	190	*140
7	144	172	207	251	312	239	284	525	1,460	399	190	138
8	142	172	198	251	476	245	320	608	1,510	390	190	134
9	144	*172	195	248	490	248	378	613	1,690	404	184	130
10	167	158	193	239	390	242	466	641	1,810	378	184	128
11	193	153	182	230	346	261	453	844	1,780	362	182	130
12	251	160	190	224	335	251	435	988	1,660	342	170	124
13	227	167	198	227	316	251	476	897	1,460	346	172	126
14	195	164	*190	224	302	245	444	799	1,240	342	172	134
15	172	182	198	224	291	236	404	728	1,090	327	170	140
16	182	190	180	221	291	233	390	740	*953	346	160	172
17	182	248	177	221	280	230	374	721	884	316	158	162
18	177	294	172	224	255	227	350	780	838	288	155	142
19	184	305	167	221	261	221	331	981	806	264	147	142
20	233	284	187	212	258	218	327	1,300	773	258	153	144
21	230	258	187	209	255	*218	346	1,300	799	248	147	142
22	261	242	190	215	258	239	374	1,170	825	230	142	144
23	221	230	209	239	245	251	382	1,070	786	233	136	160
24	201	227	215	236	245	245	394	988	708	236	136	153
25	193	227	201	233	239	242	378	932	647	*233	136	151
26	184	242	193	224	239	236	399	918	613	233	132	149
27	177	245	167	218	233	224	370	890	586	230	136	149
28	174	251	193	215	233	236	346	864	591	218	138	162
29	170	230	218	215	-	288	350	939	550	212	142	167
30	172	207	271	209	- - - -	298	346	1,070	535	215	138	162
31	174	- - -	570	*209	- - - - -	280	- - - - - -	988	- - - - - -	215	140	- - - - - -
Total	5,604	6,201	6,479	7,677	7,778	7,453	10,766	24,552	31,008	10,182	5,095	4,345
Mean	181	207	209	248	278	240	359	792	1,034	328	164	145
Ac-ft	11,120	12,300	12,850	15,230	15,430	14,780	21,350	48,700	61,500	20,200	10,110	8,620

Calendar year 1954: Max 1,600 Min 132 Mean 467 Ac-ft 338,000
Water year 1954-55: Max 1,810 Min 124 Mean 348 Ac-ft 252,200

Peak discharge (base, 1,200 cfs).--May 21 (2 a.m.) 1,390 cfs (4.19 ft); June 10 (11:30 p.m.) 1,910 cfs (4.80 ft).
* Discharge measurement made on this day.

1202

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 1955. 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.--50 years (1898-99, 1906-55), 5,797 cfs (4,197,000 acre-ft per year).

Extremes.--Maximum discharge during year, 8,380 cfs June 12 (gage height, 3.58 ft); minimum, 4,360 cfs Sept. 12 (gage height, 2.42 ft).
1897-99, 1906-55: 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. 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. Records of water temperatures for the water year 1955 are given in WSP 1403.

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

Revisions.--WSP 754: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.4	4,300
3.0	6,260
3.6	8,450

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,950	4,670	4,830	6,050	5,600	5,080	5,640	5,640	6,510	5,710	4,830	4,520
2	4,950	4,890	g4,800	5,770	5,570	5,400	5,540	5,710	6,190	5,640	4,760	4,520
3	4,950	5,180	g5,240	5,500	5,540	5,370	5,470	*5,710	6,120	5,540	4,730	4,490
4	4,890	5,180	g5,270	5,440	5,570	5,370	5,470	5,670	6,370	5,440	4,670	4,490
5	4,890	5,140	g5,310	5,470	5,570	5,370	5,270	5,710	6,870	5,370	4,670	4,520
6	4,860	5,140	g5,370	5,440	5,570	5,370	5,110	5,770	7,450	5,270	4,670	*4,490
7	4,860	5,140	5,370	5,400	5,600	5,670	5,050	6,020	7,780	5,240	4,700	4,460
8	*4,860	5,180	5,310	5,340	5,910	5,640	4,980	6,330	7,750	5,240	4,670	4,460
9	4,860	*5,180	5,310	5,470	6,120	5,600	5,110	6,480	7,820	5,340	4,670	4,460
10	4,890	g5,140	5,310	5,570	6,080	5,710	5,710	6,580	8,080	5,340	4,640	4,420
11	4,980	g5,140	5,270	5,570	6,050	5,710	6,190	6,550	8,230	5,310	4,610	4,420
12	5,050	g5,140	5,240	5,500	6,120	5,710	6,300	6,690	8,230	5,310	4,580	4,390
13	5,110	g5,140	5,270	5,570	6,160	5,640	6,160	7,020	8,080	5,270	4,580	4,390
14	5,020	g5,140	*5,400	5,570	6,160	5,570	5,940	6,840	7,600	5,240	4,580	4,490
15	5,020	g5,210	5,400	5,500	6,190	5,400	5,710	6,620	7,090	5,310	4,580	4,580
16	4,980	g5,240	5,240	5,570	6,080	5,540	5,500	6,510	*6,760	5,400	4,580	4,730
17	4,890	5,340	5,050	5,600	5,710	5,440	5,370	6,480	6,480	5,310	4,580	4,920
18	4,890	g5,540	5,020	5,570	5,500	5,340	5,270	6,550	6,300	5,140	4,580	4,950
19	4,760	g5,570	5,050	5,600	5,400	5,180	5,210	6,840	6,260	5,110	4,580	4,860
20	4,860	g5,640	5,180	5,540	5,440	5,110	5,180	7,270	6,220	5,080	4,580	4,800
21	4,890	g5,600	5,210	5,540	5,470	*5,050	5,210	7,560	6,160	4,980	4,550	4,670
22	5,050	g5,840	5,240	5,540	5,440	4,950	5,240	7,490	6,120	4,890	4,550	4,580
23	5,020	g5,440	5,240	5,500	5,440	4,950	5,240	7,380	6,220	4,860	4,520	4,580
24	4,890	5,370	5,310	5,310	5,270	4,860	5,570	7,200	6,190	4,860	4,490	4,640
25	4,760	5,340	5,140	5,210	5,080	4,830	5,640	6,910	6,020	4,860	4,490	4,550
26	4,730	g5,440	4,920	5,240	5,020	4,980	5,740	6,760	5,940	*4,800	4,490	4,520
27	4,730	5,440	4,890	5,210	5,080	4,980	5,600	6,730	5,940	4,880	4,490	4,520
28	4,700	5,370	4,950	5,240	5,050	5,020	5,500	6,580	5,880	4,860	4,490	4,520
29	4,700	4,980	5,340	5,240	-	5,140	5,570	6,510	5,840	4,860	4,490	4,550
30	4,700	4,890	5,370	5,400	------	5,500	5,570	6,730	5,740	4,860	4,490	4,520
31	4,670	------	5,740	*5,600	------	5,740	------	6,870	------	4,860	4,490	------
Total	151,360	157,650	161,590	170,070	157,790	165,220	165,060	203,710	202,240	160,160	142,380	137,010
Mean	4,883	5,255	5,213	5,486	5,635	5,330	5,502	6,571	6,741	5,166	4,593	4,567
Ac-ft	300,200	312,700	320,500	337,300	313,000	327,700	327,400	404,100	401,100	317,700	282,400	271,800

Calendar year 1954: Max 14,800 Min 4,610 Mean 6,471 Ac-ft 4,684,000
Water year 1954-55: Max 8,230 Min 4,390 Mean 5,409 Ac-ft 3,916,000

* Discharge measurement made on this day.
g Computed from once-daily Telemark readings.

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 1955. Prior to October 1936, published as "at The Dalles." Maximum stage for each year in period 1858 to 1877 from readings of gage at Lower Cascades Landing.

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, records based on staff gage at The Dalles, supplemented for a few short 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.--77 years, 194,900 cfs (141,100,000 acre-ft per year).

Extremes.--Maximum discharge during year, 548,000 cfs June 26 (gage height, 143.09 ft); minimum, 85,000 cfs Dec. 17 (gage height, 129.39 ft).

1858-1955: 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).

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. Many diversions for irrigation above station. Diurnal fluctuations caused by powerplant and gates at McNary Dam. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.

Cooperation.--Recorder inspected and gages read by Corps of Engineers.

Revisions (water years).--WSP 534: 1920(m). WSP 1094: 1894. WSP 1248: 1876(M), 1886, 1888-99, 1909.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

129.4	85,200	138	357,000
130	99,000	140	431,000
132	151,000	142	507,000
134	213,000	143	545,000
136	283,000		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*123,000	114,000	120,000	106,000	102,000	114,000	128,000	145,000	253,000	534,000	277,000	135,000
2	117,000	107,000	120,000	108,000	103,000	114,000	130,000	148,000	243,000	532,000	278,000	130,000
3	123,000	103,000	111,000	96,100	109,000	118,000	131,000	160,000	252,000	499,000	272,000	121,000
4	118,000	110,000	110,000	92,500	108,000	117,000	130,000	170,000	271,000	483,000	248,000	117,000
5	113,000	104,000	108,000	92,900	109,000	118,000	130,000	173,000	292,000	459,000	232,000	115,000
6	111,000	111,000	110,000	95,200	109,000	116,000	128,000	172,000	318,000	453,000	244,000	114,000
7	111,000	111,000	114,000	101,000	109,000	114,000	128,000	177,000	352,000	431,000	225,000	106,000
8	107,000	111,000	114,000	104,000	105,000	118,000	130,000	191,000	381,000	430,000	217,000	106,000
9	106,000	109,000	113,000	108,000	108,000	118,000	134,000	194,000	423,000	437,000	226,000	108,000
10	111,000	102,000	110,000	103,000	112,000	116,000	138,000	*194,000	445,000	416,000	215,000	107,000
11	99,200	111,000	108,000	103,000	111,000	118,000	139,000	191,000	475,000	406,000	206,000	105,000
12	103,000	107,000	111,000	104,000	114,000	119,000	146,000	193,000	469,000	410,000	191,000	105,000
13	101,000	107,000	109,000	102,000	113,000	126,000	150,000	203,000	488,000	406,000	191,000	110,000
14	107,000	106,000	104,000	100,000	111,000	122,000	146,000	212,000	512,000	424,000	187,000	112,000
15	105,000	107,000	100,000	96,400	105,000	119,000	150,000	217,000	520,000	418,000	173,000	113,000
16	111,000	107,000	93,600	105,000	99,000	118,000	146,000	205,000	516,000	412,000	155,000	113,000
17	114,000	111,000	86,700	107,000	104,000	117,000	146,000	190,000	507,000	401,000	161,000	116,000
18	113,000	117,000	94,300	103,000	106,000	118,000	140,000	179,000	487,000	404,000	167,000	117,000
19	106,000	117,000	95,000	97,600	108,000	119,000	136,000	179,000	492,000	410,000	144,000	119,000
20	101,000	119,000	98,500	100,000	111,000	116,000	137,000	180,000	*494,000	397,000	147,000	118,000
21	115,000	119,000	99,200	102,000	110,000	115,000	140,000	189,000	488,000	406,000	151,000	116,000
22	111,000	119,000	97,100	107,000	107,000	117,000	145,000	226,000	504,000	388,000	145,000	116,000
23	112,000	119,000	96,800	107,000	104,000	121,000	150,000	270,000	519,000	378,000	133,000	113,000
24	109,000	124,000	96,600	103,000	106,000	122,000	157,000	261,000	518,000	353,000	123,000	113,000
25	113,000	123,000	96,800	100,000	109,000	118,000	170,000	240,000	540,000	349,000	133,000	112,000
26	102,000	119,000	93,600	95,400	111,000	118,000	166,000	228,000	545,000	341,000	136,000	110,000
27	101,000	120,000	93,400	100,000	116,000	118,000	159,000	224,000	540,000	332,000	124,000	109,000
28	108,000	120,000	96,400	103,000	117,000	120,000	151,000	218,000	533,000	326,000	122,000	110,000
29	110,000	114,000	*97,600	108,000	-	121,000	149,000	214,000	534,000	298,000	124,000	110,000
30	107,000	115,000	99,200	109,000	------	127,000	145,000	229,000	531,000	295,000	136,000	108,000
31	110,000	------	103,000	108,000	------	*126,000	------	246,000	------	277,000	136,000	------
Total	‡3,398.2	‡3,383	‡3,199.8	‡3,167.1	‡3,036	‡3,678	‡4,275	‡6,218	‡13,442	‡12,505	‡5,619	‡3,404
Mean	109,600	112,800	103,200	102,200	108,400	118,600	142,500	200,600	448,100	403,400	181,300	113,500
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	‡6,740	‡6,710	‡6,347	‡6,282	‡6,022	‡7,295	‡8,479	‡12,330	‡26,660	‡24,800	‡11,150	‡6,752

Calendar year 1954: Max 561,000 Min 86,700 Mean 210,600 Cfsm 0.889 In. 12.06 Ac-ft 152,500,000
Water year 1954-55: Max 545,000 Min 86,700 Mean 179,000 Cfsm 0.755 In. 10.25 Ac-ft 129,600,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

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 1955 in reports of Geological Survey. October 1944 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

Gage.--Water-stage recorder. Altitude of gage is 2,720 ft (from river-profile map).

Average discharge.--11 years (1944-55), 342 cfs (247,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,730 cfs June 10 (gage height, 3.37 ft); minimum, 76 cfs Feb. 3 (gage height, 1.12 ft).
1944-55: Maximum discharge, 3,280 cfs May 27, 1948 (gage height, 4.28 ft); minimum, 48 cfs Nov. 14, 15, 1944, but may have been less during period of ice effect; minimum gage height, 0.98 ft Nov. 14, 15, 1944, Nov. 22, 1952.

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

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	71	2.4	710
1.3	125	2.7	965
1.5	195	3.1	1,380
1.8	330	3.4	1,770
2.1	500		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	116	170	173	125	113	132	158	750	500	207	108
2	108	113	169	155	113	120	125	173	790	440	203	108
3	108	110	173	142	110	120	108	188	900	412	188	105
4	108	110	165	140	110	120	105	211	1,100	394	180	102
5	*105	113	165	*130	119	110	110	258	1,400	389	180	99
6	105	125	180	130	125	130	122	315	1,450	*383	180	96
7	105	122	162	130	162	135	145	383	*1,510	378	175	94
8	110	128	155	125	176	132	176	452	*1,530	389	165	94
9	110	135	151	125	158	128	224	464	1,600	429	160	91
10	108	125	142	125	132	119	236	546	1,670	429	155	91
11	173	122	135	128	130	113	232	710	1,630	412	155	88
12	158	119	132	138	140	119	228	758	1,600	423	150	88
13	128	119	138	138	151	113	207	642	1,420	429	145	91
14	119	145	142	122	142	116	203	546	1,170	458	140	105
15	122	184	142	125	132	125	199	506	994	458	140	108
16	122	*184	119	122	128	122	203	488	866	458	*135	135
17	128	195	115	122	122	119	203	520	798	383	132	113
18	128	276	110	122	110	116	191	658	774	330	128	108
19	135	367	110	120	120	113	184	893	734	306	125	105
20	151	315	120	120	125	110	184	1,100	726	296	122	102
21	180	258	130	122	125	105	184	1,040	816	286	119	102
22	207	236	140	125	128	105	165	902	911	281	116	102
23	162	232	145	132	122	108	162	807	884	281	113	99
24	148	216	132	135	122	102	158	770	734	281	110	94
25	145	224	125	128	*119	102	158	750	650	263	110	94
26	135	250	120	122	119	102	158	730	600	245	110	91
27	128	245	110	119	116	102	151	720	579	250	108	*110
28	125	203	115	122	113	*105	145	700	600	228	110	138
29	122	191	130	122	-	132	148	760	565	220	110	113
30	119	184	145	116	------	119	145	860	520	228	108	105
31	119	------	203	122	------	116	------	800	------	211	110	------
Total	4,029	5,462	4,390	3,997	3,594	3,591	5,091	18,808	30,271	10,870	4,389	3,079
Mean	130	182	142	129	128	116	170	607	1,009	351	142	103
Cfsm	0.861	1.21	0.940	0.854	0.848	0.768	1.13	4.02	6.68	2.32	0.940	0.682
In.	0.99	1.35	1.08	0.98	0.89	0.88	1.25	4.63	7.46	2.68	1.08	0.76
Ac-ft	7,990	10,830	8,710	7,930	7,130	7,120	10,100	37,310	60,040	21,560	8,710	6,110

Calendar year 1954: Max 2,080 Min 105 Mean 374 Cfsm 2.48 In. 33.61 Ac-ft 270,700
Water year 1954-55: Max 1,670 Min 88 Mean 267 Cfsm 1.77 In. 24.03 Ac-ft 193,500

Peak discharge (base, 700 cfs).--May 11 (11 p.m.) 841 cfs (2.56 ft); May 20 (1 a.m.) 1,140 cfs (2.88 ft); June 10 (12 p.m.) 1,730 cfs (3.37 ft).
* Discharge measurement made on this day.
Note.--No gage-height record May 24 to June 6, Aug. 5-15; discharge estimated on basis of records for nearby stations. Stage-discharge relation affected by ice Dec. 1, 17-22, 26-29, Jan. 4-10, 19, 20, Feb. 3, 4, 11, 12, 18-21, Mar. 2-7, 20, 21.

Klickitat River near Glenwood, Wash.

Location.--Lat 46°05'20", 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.--June to September 1905 and July 1907 to June 1908 (discharge measurements only), Sept. 1908 to September 1955 (1908-9, 1920-28 fragmentary) in reports of Geological Survey. October 1909 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6. Prior to Oct. 29, 1909, published as "above and below Big Muddy River, near Klickitat."

Gage.--Water-stage recorder. Datum of gage is 1,703 ft above mean sea level, datum of 1929. Prior to July 19, 1910, staff gages, and July 19 to Dec. 16, 1910, water-stage recorder, at site 1½ miles upstream at different datum. Dec. 17, 1910, to Sept. 30, 1918, water-stage recorder at datum 1.50 ft higher and Oct. 1, 1918, to Nov. 6, 1928, water-stage recorder at datum 0.50 ft higher, at site 50 ft downstream. Nov. 7, 1928, to Sept. 30, 1934, at present site at datum 1 ft higher.

Average discharge.--46 years (1909-55), 840 cfs (608,100 acre-ft per year).

Extremes.--Maximum discharge during year, 3,500 cfs June 10 (gage height, 6.32 ft); minimum, 290 cfs Feb. 18 (gage height, 3.21 ft).

1909-55: 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 period 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 of about 7,000 acres below station in the vicinity of Glenwood. No regulation.

Revisions.--Revised figure of discharge, in cubic feet per second, for the water year 1927, superseding that published in WSP 654, is given herewith:

May 8, 1927..... 1,640

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
May 1927.....	3,450	1,450	2,190	6.08	7.02	135,000

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 6-28, Aug. 14 to Sept. 30)

3.2	305	4.5	1,280
3.5	485	5.0	1,750
3.8	705	5.5	2,270
4.1	940	6.5	3,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	459	452	548	a570	396	372	420	520	1,540	1,330	750	402
2	452	446	541	a540	378	384	420	548	1,600	1,240	682	408
3	446	440	548	a510	360	390	408	562	1,780	1,150	638	420
4	446	433	541	a490	384	354	390	*608	2,100	1,090	615	426
5	*440	446	555	*472	396	344	408	682	2,540	1,050	608	420
6	440	485	585	446	396	402	426	780	2,720	*1,040	615	433
7	452	478	541	440	492	402	459	884	2,830	1,020	600	440
8	466	492	520	459	615	396	506	1,010	*2,950	1,040	578	433
9	466	520	513	466	506	402	585	1,010	3,160	1,130	555	414
10	459	485	492	452	433	396	638	1,120	3,370	1,140	555	396
11	562	466	466	440	426	390	630	1,350	3,370	1,100	541	384
12	562	459	466	446	452	396	652	1,480	3,370	1,130	527	384
13	499	452	485	446	459	384	615	1,330	3,140	1,180	506	414
14	478	527	485	426	433	372	578	1,200	2,730	1,280	499	402
15	472	622	499	433	420	360	548	1,130	2,380	1,350	485	402
16	472	*615	426	426	408	372	541	1,100	2,120	1,330	*485	452
17	478	660	433	426	402	366	527	1,120	1,970	1,140	478	408
18	478	828	420	426	338	378	513	1,280	1,930	1,040	478	384
19	492	964	414	408	390	366	506	1,550	1,860	980	472	378
20	541	892	446	408	402	354	513	1,900	1,860	964	459	372
21	668	788	466	408	402	372	534	1,880	2,000	940	446	372
22	660	735	478	408	402	378	541	1,790	2,180	940	440	366
23	570	712	485	426	396	372	534	1,660	2,140	940	433	360
24	541	660	466	433	402	360	527	1,590	1,880	924	433	354
25	527	705	452	426	*384	366	527	1,550	1,690	852	433	354
26	499	735	408	414	390	360	527	1,520	1,560	836	426	354
27	492	735	378	408	384	360	506	1,460	1,510	796	414	*446
28	485	652	a400	396	384	*372	499	1,460	1,540	735	414	459
29	472	615	a450	408	-	466	506	1,610	1,470	735	408	402
30	466	548	a520	402	------	420	499	1,760	1,380	788	408	384
31	459	-----	a600	408	-----	408	-----	1,610	------	758	408	------
Total	15,399	18,047	15,027	13,667	11,630	11,814	15,483	39,054	66,670	31,968	15,789	12,023
Mean	497	602	485	441	415	381	516	1,260	2,222	1,031	509	401
Cfsm	1.38	1.67	1.35	1.22	1.15	1.06	1.43	3.50	6.17	2.86	1.41	1.11
In.	1.59	1.86	1.55	1.41	1.20	1.22	1.60	4.03	6.89	3.30	1.63	1.24
Ac-ft	30,540	35,800	29,810	27,110	23,070	23,430	30,710	77,460	132,200	63,410	31,320	23,850

Calendar year 1954: Max 3,270 Min 378 Mean 972 Cfsm 2.70 In. 36.63 Ac-ft 703,400
Water year 1954-55: Max 3,370 Min 338 Mean 730 Cfsm 2.03 In. 27.52 Ac-ft 528,700

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.

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.

Records available.--November 1944 to September 1948, October 1950 to September 1955 in reports of Geological Survey. December 1944 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (by barometer). Prior to Dec. 29, 1950, staff gage and crest-stage indicator at same site and datum.

Average discharge.--10 years (1945-55), 198 cfs (143,300 acre-ft per year).

Extremes.--Maximum discharge during year, 304 cfs Apr. 13 (gage height, 3.76 ft); minimum, 17 cfs Sept. 5, 6 (gage height, 2.28 ft).
1944-55: Maximum discharge, 7,000 cfs Jan. 7, 1948 (gage height, 9.40 ft, from high-water mark), from rating curve extended above 2,600 cfs; minimum observed, 17 cfs Aug. 3-6, 11, 16-27, Aug. 29 to Sept. 3, 1945, Aug. 30, 1947, Sept. 5, 6, 1955; minimum gage height observed, 1.24 ft Aug. 25, 26, 27, 1945.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions (water years).--WSP 1248: Drainage area. WSP 1348: 1945(M), 1946, 1947(M), 1948.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31		Jan. 1 to Sept. 30			
2.4	26	2.2	13	3.0	100
2.6	48	2.3	18	3.3	163
2.9	93	2.5	34	3.7	280
3.1	129	2.7	55		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	46	31	108	63	63	163	161	147	65	27	19.5
2	38	46	31	85	58	65	161	163	136	64	27	21
3	40	46	31	76	56	64	149	170	134	60	26	18
4	41	46	33	60	59	56	140	*173	134	59	25	19.5
5	40	47	35	62	64	54	132	183	142	55	25	17.5
6	*40	48	40	63	62	b58	136	202	149	54	25	18
7	40	52	35	60	65	62	149	210	*152	*54	24	19.5
8	38	52	32	59	*149	76	160	224	147	52	23	21
9	38	54	30	58	140	125	221	221	145	52	24	22
10	40	52	30	59	110	136	242	224	147	54	23	22
11	42	52	30	54	90	142	221	248	142	52	24	22
12	43	54	30	59	93	127	239	273	140	46	24	22
13	42	52	31	58	85	119	270	256	134	42	24	22
14	42	56	34	56	78	104	227	233	121	38	25	27
15	43	65	37	56	76	*88	207	218	111	36	22	30
16	43	66	34	54	72	90	193	215	106	36	*20	34
17	43	*59	31	59	65	90	178	215	98	36	*20	36
18	43	52	30	60	58	90	168	212	92	36	20	31
19	42	59	29	56	59	93	158	212	88	36	18.5	30
20	43	49	29	55	64	85	156	239	83	34	18.5	29
21	55	42	31	58	64	90	173	242	78	33	19.5	28
22	59	38	36	58	65	100	218	236	74	31	18.5	29
23	51	37	43	77	59	115	207	221	76	30	18	29
24	47	35	48	77	60	100	196	207	76	29	18	29
25	46	34	45	71	59	95	191	191	72	29	19.5	29
26	46	34	43	67	56	93	212	178	70	34	19.5	29
27	46	34	b42	65	54	93	199	168	67	40	19.5	31
28	46	33	*51	62	58	97	178	158	67	36	20	*34
29	46	32	56	62	-	166	170	154	67	32	19.5	34
30	46	32	85	60	----	170	166	156	64	30	20	32
31	46	----	123	62	----	163	------	154	----	30	20	----
Total	1,353	1,404	1,246	1,976	2,041	3,069	5,600	6,317	3,259	1,315	677.0	785.0
Mean	43.6	46.8	40.2	63.7	72.9	99.0	187	204	109	42.4	21.8	26.2
Ac-ft	2,680	2,780	2,470	3,920	4,050	6,090	11,110	12,530	6,460	2,610	1,340	1,560

Calendar year 1954: Max 1,760 Min 29 Mean 191 Ac-ft 138,400
Water year 1954-55: Max 273 Min 17.5 Mean 79.6 Ac-ft 57,600

Peak discharge (base, 1,600 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Dec. 3-26; discharge estimated on basis of weather records and records for stations on nearby streams.

Klickitat River near Pitt, Wash.

Location.--Lat 45°45'30", long 121°12'30", in SW¼ sec. 8, T. 3 N., R. 13 E., on left bank 2½ 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 1955. 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.--29 years (1909-11, 1928-55), 1,555 cfs (1,126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,020 cfs June 11 (gage height, 6.27 ft); minimum, 702 cfs Mar. 5, Sept. 25-27 (gage height, 3.89 ft).
1909-12, 1928-55: Maximum discharge, 25,500 cfs Dec. 22, 1933 (gage height, 12.50 ft, site and datum then in use, from graph based on gage readings), from rating curve extended above 3,400 cfs on basis of velocity-area study and gage-height curve of relation; minimum, 466 cfs Feb. 4, 1937.

Remarks.--Records excellent. Several small diversions above station for irrigation of about 7,500 acres mostly in vicinity of Glenwood. Measured flow of Hellroaring Irrigation Canal, 73.2 cfs Aug. 25, 1948. No regulation.

Revisions (water years).--WSP 1218: Drainage area. WSP 1349: 1910(M), 1929-33(M), 1934, 1935-38(M), 1940(M), 1942-43(M), 1946(M), 1948(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.8	625	5.0	1,950
4.2	990	5.5	2,700
4.6	1,430	6.5	4,470

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	863	872	980	1,200	900	890	1,410	1,350	2,090	1,600	1,050	746
2	854	863	980	1,090	872	890	1,380	1,370	2,090	1,500	1,020	746
3	854	863	990	1,040	845	881	1,310	1,420	2,270	1,430	960	764
4	836	854	990	950	836	809	1,240	*1,470	2,540	1,370	940	764
5	836	854	990	960	872	755	1,240	1,560	3,040	1,350	940	773
6	*836	890	1,030	960	872	836	1,280	1,620	3,240	1,330	940	773
7	827	900	1,010	920	950	863	1,330	1,710	*3,290	*1,330	930	791
8	863	890	990	920	*1,310	881	1,440	1,880	3,330	1,330	920	809
9	872	960	970	950	1,240	1,010	1,600	1,850	3,530	1,420	900	773
10	863	900	940	930	1,090	1,120	1,650	1,960	3,780	1,500	872	755
11	910	890	900	910	1,000	1,170	1,600	2,240	3,870	1,450	863	737
12	1,000	900	900	900	1,040	1,130	1,870	2,440	3,840	1,420	854	728
13	920	890	910	900	1,030	1,090	1,780	2,210	3,620	1,480	827	737
14	890	940	910	900	1,000	1,030	1,650	1,990	3,140	1,540	818	800
15	881	1,070	960	890	980	*980	1,550	1,890	2,720	1,670	800	773
16	881	1,080	900	890	950	990	1,530	1,840	2,380	1,690	809	854
17	881	*1,120	872	900	930	980	1,470	1,820	2,160	1,550	*809	818
18	881	1,280	854	910	836	1,000	1,410	1,950	2,090	1,370	818	773
19	881	1,440	845	881	845	990	1,370	2,270	2,010	1,290	818	755
20	930	1,440	881	872	881	940	1,380	2,730	1,960	1,270	800	746
21	1,010	1,290	890	863	872	960	1,480	2,700	2,080	1,230	791	737
22	1,140	1,200	900	863	881	1,090	1,600	2,600	2,330	1,210	782	728
23	1,030	1,180	910	940	863	1,070	1,540	2,420	2,360	1,220	782	719
24	980	1,130	920	960	863	1,010	1,500	2,300	2,080	1,220	782	710
25	940	1,110	890	970	854	1,000	1,490	2,210	1,840	1,160	782	710
26	910	1,190	863	940	854	980	1,590	2,160	1,740	1,130	782	702
27	910	1,190	791	910	845	980	1,490	2,050	1,690	1,120	764	737
28	900	1,120	*854	900	881	1,050	1,390	2,020	1,730	1,050	764	*863
29	890	1,080	900	890	-	1,420	1,390	2,150	1,710	1,020	755	800
30	881	1,010	1,010	890	- - - -	1,410	1,370	2,390	1,620	1,070	746	764
31	881	- - -	1,280	900	- - -	1,360	- - - - -	2,220	- - - - -	1,050	755	- - -
Total	28,031	31,396	29,010	28,899	26,192	31,565	44,330	62,790	76,160	41,370	26,173	22,885
Mean	904	1,047	936	932	935	1,018	1,478	2,025	2,539	1,335	844	763
Cfsm	0.701	0.812	0.726	0.722	0.725	0.789	1.15	1.57	1.97	1.03	0.654	0.591
In.	0.81	0.91	0.84	0.83	0.76	0.91	1.28	1.81	2.20	1.19	0.75	0.66
Ac-ft	55,600	62,270	57,540	57,320	51,950	62,610	87,930	124,500	151,100	82,060	51,910	45,390

Calendar year 1954: Max 6,600 Min 791 Mean 1,948 Cfsm 1.51 In. 20.51 Ac-ft 1,410,000
Water year 1954-55: Max 3,870 Min 702 Mean 1,230 Cfsm 0.953 In. 12.95 Ac-ft 890,200

Peak discharge (base, 4,000 cfs).--June 11 (6 a.m.) 4,020 cfs (6.27 ft).
* Discharge measurement made on this day.

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 1955.

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 half a mile upstream at different datum.

Average discharge.--23 years (1932-55), 544 cfs (393,800 acre-ft per year).

Extremes.--Maximum discharge during year, 6,350 cfs Dec. 30 (gage height, 8.60 ft); minimum, 159 cfs Oct. 9, Sept. 12 (gage height, 1.52 ft).
1913-14, 1932-55: 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 except those for period of no gage-height record, which are fair. Diversions above station for irrigation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.5	155	4.0	1,290
2.0	290	6.0	2,980
3.0	715	8.0	5,460

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	224	380	2,280	400	336	630	530	800	970	336	184
2	168	216	360	1,360	364	328	589	517	760	820	311	182
3	168	205	340	959	*342	318	530	*530	850	710	290	184
4	166	200	320	770	336	294	486	580	1,030	643	274	184
5	164	200	340	656	360	277	468	670	1,190	598	274	192
6	164	210	420	571	440	287	494	760	1,350	553	274	194
7	173	222	380	512	1,500	287	562	810	1,410	512	271	*194
8	*168	*222	340	472	2,900	300	674	888	1,550	530	264	180
9	162	230	320	436	1,580	318	994	825	1,840	530	252	175
10	197	208	300	400	1,040	414	1,110	888	1,830	508	247	173
11	368	216	300	380	810	526	904	1,160	1,730	499	244	170
12	661	290	320	360	688	508	1,060	1,200	1,540	517	236	168
13	376	268	*422	414	616	454	1,130	982	1,190	562	230	177
14	300	342	396	376	553	404	855	830	970	598	224	233
15	308	376	544	360	508	372	715	785	*830	594	224	244
16	268	602	445	350	472	350	670	780	738	571	222	* 384
17	250	1,250	400	350	440	339	602	785	710	486	219	280
18	224	1,300	368	325	396	328	548	970	720	436	219	227
19	297	1,100	346	308	380	318	517	1,390	710	409	219	208
20	311	800	325	308	360	308	490	1,590	775	392	216	194
21	706	550	314	294	350	314	530	1,330	882	380	208	184
22	648	460	356	325	342	*607	692	1,100	898	380	202	182
23	504	420	388	409	328	526	684	926	850	380	202	177
24	436	380	409	450	342	476	630	830	720	368	200	170
25	360	460	376	535	328	432	580	815	661	342	197	166
26	318	440	353	494	322	388	562	932	652	*360	194	164
27	287	600	325	458	300	368	499	976	643	364	190	192
28	264	500	328	427	325	384	468	893	710	325	187	258
29	250	420	584	404	-	558	476	1,020	715	332	187	210
30	238	400	3,140	384	------	576	499	1,140	738	360	190	192
31	238	------	4,300	396	------	580	-----	937	------	346	187	------
Total	9,312	13,311	18,239	16,523	17,122	12,275	19,648	28,369	29,992	15,375	7,190	6,022
Mean	300	444	588	533	612	396	655	915	1,000	496	232	201
Ac-ft	18,470	26,400	36,180	32,770	33,960	24,350	38,970	56,270	59,490	30,500	14,260	11,940

Calendar year 1954: Max 4,300 Min 162 Mean 576 Ac-ft 417,000
Water year 1954-55: Max 4,300 Min 162 Mean 530 Ac-ft 383,600

74-96

Peak discharge (base, 4,100 cfs).--Dec. 30 (9:30 p.m.) 6,350 cfs (8.60 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 18 to Dec. 12; discharge estimated on basis of records for Hood River near Hood River plus Pacific Power & Light Co.'s conduit near Hood River.

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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 1955.

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.--42 years, 1,080 cfs (781,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,990 cfs Dec. 30; minimum daily, 400 cfs Oct. 3-6.
1913-55: Maximum discharge, 34,000 cfs Jan. 6, 1923 (gage height, 11.1 ft, site then in use), no diversion by power conduit; minimum daily, 165 cfs Aug. 5, 1941.

Remarks.--Records good. Many diversions above station for irrigation. Daily discharge regulated by pondage at sawmill at Dee. All records presented herein include flow in Pacific Power & Light Co.'s conduit, which diverts water 3 miles above station and returns water to river a quarter of a mile below station.

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

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	408	609	808	2,980	*838	952	1,270	1,110	1,540	1,730	869	424
2	404	590	778	2,020	771	915	1,230	1,100	1,480	1,490	792	427
3	400	584	752	1,580	733	867	1,150	*1,090	1,600	1,320	705	450
4	400	573	735	1,340	728	794	1,080	1,150	1,960	1,240	667	476
5	400	567	748	1,200	783	730	1,040	1,280	2,250	1,180	653	483
6	400	589	829	1,080	789	763	1,060	1,420	2,490	1,090	682	494
7	412	599	792	1,010	1,930	765	1,120	1,470	2,520	1,030	681	*516
8	*416	*595	741	967	*3,660	791	1,260	1,590	2,660	1,080	666	476
9	404	615	723	931	2,310	823	1,590	1,510	2,990	1,120	626	464
10	450	587	698	875	1,670	923	1,830	1,560	3,110	1,060	601	449
11	686	581	672	847	1,380	1,160	1,610	1,980	2,960	1,040	596	447
12	1,060	641	700	820	1,250	1,140	1,810	2,100	2,860	1,050	581	425
13	700	632	*831	887	1,140	1,060	1,900	1,830	2,360	1,140	559	445
14	576	708	788	838	1,080	993	1,580	1,590	1,980	1,270	548	618
15	582	783	976	822	1,010	950	1,390	1,520	*1,710	1,380	539	624
16	560	914	846	798	972	911	1,350	1,490	1,530	1,430	525	944
17	555	1,770	790	813	934	873	1,250	1,480	1,470	1,200	524	691
18	515	1,880	752	806	883	857	1,180	1,670	1,490	1,060	490	585
19	582	1,730	724	749	851	811	1,110	2,140	1,480	1,000	519	539
20	624	1,340	693	746	838	808	1,090	2,600	1,510	949	532	529
21	1,180	1,100	678	733	802	798	1,110	2,290	1,670	921	506	506
22	1,170	995	727	754	773	*1,220	1,380	2,010	1,780	938	497	496
23	896	916	759	876	761	1,110	1,310	1,770	1,720	972	481	491
24	826	844	819	910	792	1,040	1,250	1,620	1,480	955	475	477
25	748	954	784	993	774	1,000	1,180	1,580	1,370	878	481	471
26	698	928	729	948	771	949	1,220	1,670	1,380	875	444	455
27	614	1,150	677	896	736	928	1,100	1,730	1,330	*911	428	488
28	660	1,020	698	866	847	952	1,080	1,600	1,450	787	428	653
29	635	925	902	828	-	1,200	1,080	1,780	1,430	811	432	571
30	620	857	3,230	803	------	1,220	1,060	2,090	1,410	968	438	531
31	621	------	*5,370	805	------	1,220	------	1,740	------	929	407	------
Total	19,202	26,576	30,729	31,479	30,746	29,521	38,570	51,520	56,910	33,784	17,332	15,645
Mean	619	886	991	1,015	1,098	952	1,286	1,662	1,897	1,090	559	522
Ac-ft	38,090	52,710	60,950	62,440	60,980	58,550	76,500	102,200	112,900	67,010	34,380	31,030

Calendar year 1954: Max 5,370 Min 399 Mean 1,206 Ac-ft 873,000
Water year 1954-55: Max 5,370 Min 400 Mean 1,047 Ac-ft 757,700

Peak discharge (base, 4,600 cfs).--Dec. 30 (11 p.m.) 6,990 cfs; Feb. 8 (10 a.m.) 5,350 cfs.
* Discharge measurement made on this day.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 112.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. 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, and July 17, 1918, to Sept. 30, 1930, at datum 2.24 ft higher than present datum.

Average discharge.--35 years (1915-30, 1935-55), 1,080 cfs (781,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,330 cfs June 11 (gage height, 5.64 ft); minimum, 118 cfs Aug. 16 (gage height, 2.11 ft); minimum daily, 569 cfs Nov. 8.
1912-13, 1915-30, 1935-55: Maximum discharge, 9,700 cfs Dec. 29, 1917 (gage height, 9.5 ft, site and datum then in use), from rating curve extended above 2,700 cfs; practically no flow at times when powerplant is shut down.

Remarks.--Records good. Water diverted to irrigate about 4,500 acres in the Trout Lake area. Low and medium flow regulated by powerplant of the Northwestern Electric Co.

Revisions (water years).--WSP 484: 1915-17. WSP 1218: Drainage area. WSP 1349: 1936-41(m).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.4	520	5.0	1,650
3.7	680	5.5	2,170
4.0	865	6.0	2,770
4.5	1,220		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	715	747	782	1,410	810	936	1,190	978	1,280	1,320	941	677
2	716	672	792	1,270	824	930	1,270	1,040	1,330	1,370	868	716
3	682	728	890	1,220	765	866	1,180	993	1,360	1,280	877	703
4	728	665	788	1,010	778	821	1,120	1,010	1,480	1,250	816	741
5	712	759	828	1,020	796	780	1,090	1,100	1,660	1,220	810	685
6	*678	736	886	968	766	816	1,040	1,070	1,760	1,130	832	721
7	708	693	857	884	918	791	1,040	1,110	1,830	1,130	820	716
8	706	569	854	898	1,420	808	1,140	1,170	1,850	1,120	784	682
9	754	629	783	882	1,550	856	1,130	1,180	1,970	1,110	766	708
10	693	633	774	860	1,330	900	1,220	1,150	*2,120	1,140	798	687
11	884	634	782	829	1,260	936	1,270	1,160	2,290	1,070	790	692
12	840	648	774	804	1,150	981	1,320	1,280	2,200	1,090	814	675
13	774	664	786	848	1,090	937	1,380	1,300	2,140	1,110	737	650
14	769	735	756	826	1,070	940	1,310	1,280	1,930	1,120	775	715
15	749	783	812	792	1,010	*897	1,280	1,280	1,680	1,120	*812	776
16	770	847	806	801	971	895	1,220	1,210	1,560	1,140	710	880
17	722	1,020	778	914	921	867	1,210	1,170	1,440	1,160	758	817
18	717	1,430	736	796	856	890	1,160	1,270	1,430	1,050	696	808
19	740	1,670	756	814	877	871	1,070	1,270	1,360	1,040	799	769
20	810	1,610	746	808	885	900	1,130	1,470	1,370	1,010	769	779
21	860	1,280	728	788	859	856	1,080	1,540	1,410	975	787	752
22	926	1,100	761	781	852	952	1,130	1,510	1,520	956	740	749
23	806	1,010	776	808	866	1,020	1,140	1,480	1,600	948	749	750
24	752	937	776	905	846	972	1,050	1,410	1,520	926	747	746
25	800	937	752	895	838	952	1,120	1,360	1,440	966	735	714
26	710	1,010	760	846	833	869	1,100	1,360	1,380	913	742	709
27	724	1,130	719	901	818	914	1,020	1,360	1,350	938	731	771
28	700	1,060	*747	833	928	952	1,000	1,310	1,350	982	742	784
29	741	1,080	758	821	-	1,090	1,020	1,320	1,340	922	733	716
30	722	902	995	820	- - - -	1,190	1,030	1,420	1,300	918	706	731
31	684	- - -	1,470	816	- -	1,280	-----	1,410	------	938	732	-- -
Total	23,292	27,318	25,208	27,868	26,887	28,665	34,460	38,971	48,250	33,362	24,116	22,019
Mean	751	911	813	899	960	925	1,149	1,257	1,608	1,076	778	734
Ac-ft	46,200	54,180	50,000	55,280	53,330	56,860	68,350	77,300	95,700	66,170	47,830	43,670

Calendar year 1954: Max 3,680 Min 569 Mean 1,307 Ac-ft 946,500
Water year 1954-55: Max 2,290 Min 569 Mean 987 Ac-ft 714,900

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 28 to Nov. 16, Mar. 5-15, June 3-10, Aug. 15, Aug. 19 to Sept. 27; discharge estimated on basis of powerplant records and recorded range in stage.

Little White Salmon River at Willard, Wash.

Location.--Lat 45°46'50", 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 1955. Published as "below Lava Creek, near Cooks" 1903-6.

Gage.--Water-stage recorder. Altitude of gage is 1,230 ft (from river-profile map). Prior to Aug. 6, 1906, nonrecording gage near present site at different datum.

Average discharge.--10 years (1945-55), 455 cfs (329,400 acre-ft per year).

Extremes.--Maximum discharge recorded during year, 1,560 cfs Dec. 30 (gage height, 7.30 ft), may have been higher during period of no gage-height record Feb. 8; minimum daily, 50 cfs Nov. 1-5.
1903-6, 1944-55: Maximum discharge, 4,140 cfs Dec. 15, 1946 (gage height, 9.50 ft), from rating curve extended above 2,500 cfs; minimum, 1.6 cfs Dec. 3, 1952 (gage height, 0.73 ft).

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Broughton Lumber Co. diversion, a quarter of a mile upstream, may at times carry as much as 30 cfs out of basin to Columbia River. Other diversions above station for water supply, irrigation, and hatchery purposes. Slight regulation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.9	48	4.0	340
2.2	74	5.0	570
2.6	118	6.0	850
3.0	170	7.2	1,470
3.5	251		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	50	251	994	307	298	500	432	450	548	336	188
2	71	50	248	769	287	283	502	432	446	532	332	184
3	71	50	246	640	271	273	462	425	446	522	327	178
4	69	50	242	575	268	261	425	425	450	515	325	173
5	67	50	244	520	270	270	403	*460	462	510	317	167
6	65	52	278	488	275	248	407	495	462	500	314	162
7	*64	52	316	466	500	246	443	493	462	*493	308	157
8	62	52	310	453	1,400	246	505	502	460	483	305	153
9	58	52	303	441	*950	251	625	476	462	478	299	150
10	58	52	294	423	694	285	724	462	*457	466	296	146
11	80	52	283	412	582	323	640	500	453	460	290	142
12	90	56	285	403	520	358	650	512	450	455	285	136
13	77	56	298	407	483	348	790	471	446	443	280	136
14	66	65	314	385	455	321	685	443	436	436	276	139
15	60	90	394	377	434	301	605	425	436	430	271	147
16	56	120	383	366	418	*289	575	414	441	425	268	176
17	54	260	358	360	403	278	550	416	453	421	*263	140
18	54	*360	340	344	388	275	512	443	464	414	258	130
19	58	370	327	327	377	271	485	505	481	407	254	124
20	65	314	316	317	368	263	476	545	483	399	248	118
21	95	248	305	307	360	265	483	520	495	394	244	113
22	110	214	298	299	354	385	552	490	510	385	237	110
23	90	196	308	307	340	377	562	471	520	381	232	106
24	75	193	334	317	348	348	545	450	528	377	227	103
25	66	212	317	354	336	325	518	448	535	370	222	99
26	60	220	301	360	323	303	498	450	540	368	219	96
27	56	260	290	358	308	289	464	446	548	364	212	99
28	54	263	285	336	310	290	441	443	552	358	209	*108
29	52	260	*310	321	-	388	432	450	548	354	201	100
30	52	254	664	310	-----	443	425	469	542	348	198	95
31	52	-----	1,420	308	-----	462	-----	462	-----	342	193	-----
Total	2,081	4,573	10,862	13,044	12,329	9,563	15,884	14,375	14,418	13,378	8,246	4,075
Mean	67.1	152	350	421	440	308	529	464	481	432	266	136
Ac-ft	4,130	9,070	21,540	25,870	24,450	18,970	31,510	28,510	28,600	26,530	16,360	8,080

Calendar year 1954 : Max 2,010 Min 50 Mean 450 Ac-ft 326,100
Water year 1954-55 : Max 1,420 Min 50 Mean 337 Ac-ft 243,600

Peak discharge (base, 1,600 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--Doubtful gage-height record Oct. 11-18; no gage-height record Oct. 19 to Nov. 18, Feb. 7-9, Sept. 29-30; discharge estimated on basis of records for station below Lapham Creek, near Willard.

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 Lapham Creek and 1.2 miles south of Willard.

Drainage area.--123 sq mi.

Records available.--September 1949 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 980 ft (from river-profile map).

Average discharge.--6 years, 537 cfs (388,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,770 cfs Feb. 8 (gage height, 4.76 ft); minimum, 101 cfs Nov. 3 (gage height, 1.78 ft).
1949-55: Maximum discharge, 3,610 cfs Jan. 9, 1953 (gage height, 5.98 ft); minimum, 59 cfs Oct. 31, 1952 (gage height, 1.35 ft).

Remarks.--Records fair. Broughton Lumber Co. diversion above station may at times carry as much as 30 cfs. Other diversions above station for water supply, irrigation, and hatchery purposes. Possibly some regulation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.8	105	3.0	490
2.0	151	3.5	730
2.3	235	4.0	1,050
2.6	335	4.6	1,580

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	146	118	314	1,140	370	363	571	499	504	600	390	247
2	144	118	310	862	346	349	571	499	499	576	386	241
3	146	116	310	710	335	335	530	486	499	562	378	238
4	141	116	307	635	328	324	490	486	504	558	374	232
5	139	116	307	585	332	310	470	*522	512	548	366	223
6	137	118	349	553	352	307	474	553	517	535	363	223
7	*137	118	386	530	538	300	522	548	517	530	356	217
8	137	120	382	517	1,490	307	571	562	512	*526	356	214
9	132	123	374	499	*1,040	310	695	526	517	517	352	208
10	132	120	363	482	*760	352	796	517	*512	508	346	205
11	149	120	352	470	640	398	710	558	508	504	338	202
12	154	123	356	458	580	438	772	562	508	504	338	197
13	141	123	366	470	548	426	886	530	504	490	335	194
14	134	129	394	446	522	394	766	504	490	482	332	194
15	127	149	474	438	504	*370	675	478	490	474	324	202
16	125	183	458	430	478	352	635	470	499	466	318	238
17	123	332	430	426	466	346	605	470	508	462	*318	197
18	123	426	406	410	450	338	571	494	522	458	318	188
19	127	*446	390	394	438	335	548	553	526	454	310	180
20	134	382	378	378	434	324	535	590	535	450	307	174
21	159	314	370	370	426	328	544	566	540	442	300	172
22	172	276	363	363	418	466	620	540	548	438	296	167
23	154	259	378	366	402	454	630	526	562	434	290	164
24	139	259	398	386	414	422	605	508	566	430	286	161
25	132	276	382	426	394	398	576	504	580	426	279	156
26	127	286	363	438	382	366	562	508	590	422	276	154
27	125	324	356	418	370	356	526	499	590	422	272	*156
28	123	328	352	402	374	360	504	499	595	410	265	164
29	123	324	*374	382	-	458	499	508	590	410	262	156
30	120	318	800	370	-----	517	486	522	585	406	256	149
31	120	-----	1,540	374	-----	535	-----	517	------	398	250	------
Total	4,222	6,560	13,082	15,128	14,131	11,638	17,945	16,104	15,929	14,842	9,937	5,813
Mean	136	219	422	488	505	375	598	519	531	479	321	194
Ac-ft	8,370	13,010	25,950	30,010	28,030	23,080	35,590	31,940	31,590	29,440	19,710	11,530

Calendar year 1954: Max 2,040 Min 116 Mean 525 Ac-ft 380,200
Water year 1954-55: Max 1,540 Min 116 Mean 398 Ac-ft 288,200

Peak discharge (base, 1,500 cfs).--Dec. 31 (7 a.m.) 1,680 cfs (4.68 ft); Feb. 8 (6 a.m.) 1,770 cfs (4.76 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 downstream from bridge, three-quarters of a mile upstream from Trout Creek, and 7 miles northwest of Carson.

Drainage area.--108 sq mi.

Records available.--October 1944 to September 1955.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 850 ft (from topographic map).

Average discharge.--11 years, 572 cfs (414,100 acre-ft per year).

Extremes.--Maximum discharge observed during year, 3,050 cfs Dec. 31 (gage height, 9.50 ft); minimum observed, 88 cfs Oct. 5 (gage height, 1.78 ft).
1944-55: 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. Upstream diversions returned to stream above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.7	81	5.0	730
2.0	109	6.0	1,100
2.5	165	7.0	1,570
3.0	236	8.0	2,100
3.5	325	9.5	3,050
4.0	435		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91	126	473	1,870	452	362	828	579	818	740	226	112
2	90	122	430	1,380	428	345	782	597	776	644	217	111
3	90	119	390	1,100	395	327	720	573	793	558	206	109
4	90	121	356	912	406	308	647	579	852	521	198	107
5	89	127	400	786	413	300	619	*696	940	478	191	106
6	92	130	588	689	440	296	612	821	1,020	452	179	104
7	*96	126	616	603	996	296	693	856	1,140	430	178	104
8	101	133	579	567	1,910	298	790	908	1,240	*425	174	104
9	95	140	527	*524	*1,600	304	1,060	852	1,480	433	169	104
10	165	157	489	486	1,120	347	1,370	905	*1,540	411	166	102
11	205	158	458	458	926	393	1,240	1,000	1,490	404	163	100
12	198	165	494	458	804	440	1,200	1,040	1,340	406	159	98
13	147	166	510	463	737	404	1,260	960	1,100	409	157	109
14	128	204	564	421	653	*379	1,080	866	972	438	154	141
15	118	293	657	406	597	362	940	796	863	428	149	154
16	114	502	653	400	556	351	877	758	751	421	147	296
17	115	1,100	564	395	521	339	804	730	696	351	143	161
18	112	*1,900	553	377	476	331	740	863	676	356	*142	142
19	138	1,840	516	358	455	323	713	1,120	637	316	140	134
20	182	1,280	438	349	435	316	670	1,300	670	298	136	127
21	366	916	438	341	413	388	703	1,170	762	293	132	121
22	335	740	448	337	397	544	866	1,020	772	285	131	118
23	242	585	458	360	386	478	890	922	758	282	129	115
24	202	510	500	384	381	442	877	880	673	276	128	112
25	188	603	458	476	381	418	800	842	597	259	126	108
26	173	713	435	463	370	390	720	866	579	267	124	106
27	160	737	402	442	353	379	634	884	567	267	122	155
28	151	564	390	428	370	455	591	863	564	260	120	178
29	146	567	435	409	-	744	576	874	561	260	118	*155
30	142	527	1,270	388	------	768	573	880	558	252	116	142
31	132	-----	2,780	413	-----	793	-----	846	------	234	114	------
Total	4,693	15,371	18,269	17,443	17,371	12,620	24,875	26,846	26,185	11,854	4,754	3,835
Mean	151	512	589	563	620	407	829	866	873	382	153	128
Cfsm	1.40	4.74	5.45	5.21	5.74	3.77	7.68	8.02	8.08	3.54	1.42	1.19
In.	1.62	5.29	6.29	6.01	5.98	4.35	8.57	9.24	9.02	4.08	1.64	1.32
Ac-ft	9,310	30,490	36,240	34,600	34,450	25,030	49,340	53,250	51,940	23,510	9,430	7,610

Calendar year 1954 : Max 3,360 Min 89 Mean 580 Cfsm 5.37 In. 79.92 Ac-ft 420,000
Water year 1954-55 : Max 2,780 Min 89 Mean 504 Cfsm 4.67 In. 63.41 Ac-ft 365,200

Peak discharge (base, 3,000 cfs).--Dec. 31 (7 a.m.) 3,050 cfs (9.50 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 1955 in reports of Geological Survey. October 1934 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map).

Average discharge.--21 years (1934-55), 1,140 cfs (825,300 acre-ft per year).

Extremes.--Maximum discharge during year, 8,330 cfs Dec. 31 (gage height, 12.67 ft); minimum, 218 cfs Oct. 6 (gage height, 3.18 ft).
1934-55: Maximum discharge, 20,000 cfs Dec. 29, 1937 (gage height, 17.30 ft), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum, 123 cfs Nov. 30, 1952; minimum gage height, 2.21 ft Nov. 29, Dec. 1, 1936.

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 (water years).--WSP 964: Drainage area. WSP 1349: 1935-37, 1938(M), 1942-43(M), 1945-46(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.2	221	7.0	1,580
3.6	291	8.0	2,280
4.0	377	9.0	3,140
4.5	507	10.0	4,200
5.0	662	11.0	5,500
5.5	842	12.5	8,010
6.0	1,050		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	227	326	956	4,680	1,070	854	2,000	1,260	1,460	1,450	452	265
2	227	315	881	3,120	987	815	1,900	1,230	1,380	1,300	436	259
3	226	307	834	2,350	940	756	1,620	1,190	1,400	1,150	424	256
4	*227	301	793	1,900	912	689	1,410	1,220	1,540	1,050	414	254
5	224	303	804	1,590	920	632	1,310	1,450	1,790	960	401	249
6	221	328	1,280	1,360	1,050	639	1,320	*1,710	1,850	850	394	247
7	232	313	1,530	1,230	2,770	629	1,500	1,800	2,020	800	382	244
8	242	315	1,340	1,130	5,850	652	1,710	2,000	2,260	*774	375	246
9	237	347	1,180	*1,030	3,720	703	2,370	1,780	2,530	774	368	246
10	240	379	1,060	952	*2,560	865	2,930	1,770	*2,630	742	359	242
11	388	389	952	885	2,000	1,090	2,460	2,090	2,600	717	354	239
12	452	406	956	842	1,650	1,260	3,050	2,240	2,500	717	347	237
13	363	436	1,260	900	1,470	1,160	3,320	1,960	2,300	728	343	254
14	319	522	1,430	842	1,300	978	2,470	1,700	2,100	749	339	315
15	295	812	2,080	831	1,190	893	1,990	1,540	1,900	742	332	345
16	278	1,210	1,670	823	1,110	*842	1,850	1,460	1,600	724	328	639
17	283	2,930	1,570	897	1,030	789	1,710	1,450	1,400	655	324	408
18	294	*4,120	1,200	897	956	767	1,530	1,670	1,250	619	*317	341
19	336	3,990	1,060	815	908	745	1,420	2,350	1,200	588	311	317
20	455	2,940	969	786	869	714	1,350	2,710	1,300	572	307	299
21	802	2,020	904	760	831	731	1,470	2,370	1,500	551	301	289
22	916	1,500	889	767	804	1,420	2,080	2,070	1,550	536	293	280
23	855	1,220	920	865	778	1,290	2,080	1,780	1,500	524	289	272
24	530	1,050	1,120	974	804	1,080	1,850	1,600	1,450	513	289	265
25	463	1,120	1,050	1,260	786	992	1,600	1,580	1,300	493	287	258
26	424	1,160	948	1,200	763	893	1,480	1,590	1,200	569	283	256
27	396	1,440	873	1,100	731	854	1,310	1,660	1,100	603	280	305
28	377	1,340	854	1,010	800	862	1,210	1,570	1,050	516	276	444
29	361	1,190	1,060	944	-	1,700	1,200	1,650	1,050	490	270	*370
30	350	1,060	4,180	889	------	1,940	1,180	1,830	1,100	493	268	334
31	336	-----	7,330	944	------	1,940	------	1,660	------	471	267	------
Total	11,376	34,089	43,733	38,573	39,559	30,174	54,680	53,940	49,810	22,420	10,410	8,975
Mean	367	1,136	1,411	1,244	1,413	973	1,823	1,740	1,660	723	336	299
Cfsm	1.63	5.05	6.27	5.53	6.28	4.32	8.10	7.73	7.38	3.21	1.49	1.33
In.	1.88	5.63	7.25	6.38	6.54	4.99	9.04	8.92	8.23	3.71	1.72	1.48
Ac-ft	22,560	67,610	86,740	75,510	78,460	59,850	108,500	107,000	98,800	44,470	20,650	17,800

Calendar year 1954: Max 8,070 Min 221 Mean 1,231 Cfsm 5.47 In. 74.28 Ac-ft 891,600
Water year 1954-55: Max 7,330 Min 221 Mean 1,090 Cfsm 4.48 In. 65.75 Ac-ft 789,000

Peak discharge (base, 5,700 cfs).--Dec. 31 (1 a.m.) 8,330 cfs (12.67 ft); Feb. 8 (8:30 a.m.) 7,030 cfs (11.96 ft).
* Discharge measurement made on this day.
Note.--No gage-height record June 11 to July 7; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Salmon River near Government Camp, Oreg.

Location (revised).--Lat 45°16'00", long 121°43'00", in N½ sec. 31, T. 3 S., R. 9 E., on right bank near lower end of Red Top Meadows, 3 miles southeast of Government Camp.
Drainage area.--8.7 sq mi, approximately.
Records available.--May 1910 to May 1912, April 1926 to September 1955. Published as "near Rowe" 1910-12.
Gage.--Water-stage recorder. Datum of gage is 3,446.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. 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 datums.
Average discharge.--30 years (1910-11, 1926-55), 43.1 cfs (31,200 acre-ft per year).
Extremes.--1910-11: Maximum discharge during water year, 153 cfs Nov. 22 (gage height, 2.06 ft); minimum, 15 cfs Oct. 23, Oct. 29 to Nov. 1.
1954-55: Maximum discharge during water year, 235 cfs June 9 (gage height, 2.15 ft); minimum, 20 cfs Oct. 5, 6, 8, 9, Mar. 21, 24-27.
1910-12, 1926-55: Maximum discharge, 650 cfs Dec. 22, 1933 (gage height, 3.61 ft); minimum, 10 cfs Nov. 27, 1952.
Revisions.--Figures of maximum discharge for the water years 1912 and 1933 have been revised to 201 cfs Nov. 11, 1911 (gage height, 2.10 ft) and 355 cfs Nov. 15, 1932 (gage height, 3.60 ft), superseding those published in WSP 332 and 754, respectively.
Remarks.--Records good except those above 150 cfs and those for periods of no gage-height record, which are fair. No regulation or diversion above station.
Revisions.--WSP 769: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1911 (complete daily table), 1912, 1926, 1927, and 1949, superseding those published in WSP 312, 332-C, 634, 654 and 1154, are given herein.

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1911		1911-Con.		1912-Con.		1926-Con.		1949-Con.	
Oct. 1	23	Nov. 3	14	Jan. 11	60	Aug. 25	21	Sept. 5	21
2	43	4	16	12	115	26	24	6	20
4	18	5	26	13	128	27	22	7	20
5	16	6	43			28	20	8	19
6	14	7	47	1926		29	22	9	19
7	12	8	36	July 1	20	30	21	10	19
8	14	9	39	6	20	31	22	11	20
9	22	10	39	7	20			12	20
11	19	11	112	9	20	1927		13	19
13	19	12	118	10	20	Sept. 8	30	14	21
14	19	13	95	11	20	9	27	15	28
15	18	14	73	12	20	10	35	16	45
16	18	15	62	13	20	11	80	17	32
17	18	16	51	16	20	12	70	18	26
18	17	17	58	17	19	13	55	19	23
19	15	18	65	21	18	14	42	20	22
20	14	19	56	22	18	15	38	21	22
21	14	20	48	23	18	16	35	22	20
22	15	21	39	24	18	17	29	23	20
23	17	22	28	25	18	18	28	24	19
24	18	23	22	26	17	19	28	25	19
25	18	25	28	27	17	20	27	26	19
26	18	26	35	29	17	21	27	27	18
27	17	27	38	30	17	22	26	28	18
28	16	28	53	31	17			29	19
29	16	29	33	Aug. 1	17	1949		30	19
30	14	30	28	21	24	Sept. 1	24		
31	14			22	22	2	23		
Nov. 1	14	1912		23	20	3	22		
2	14	Jan.1-10	†25	24	19	4	21		

† Average for period indicated.

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October 1911	-	43	12	18.0	2.07	2.39	1,110
November	-	118	14	45.7	5.25	5.86	2,720
Calendar year 1911	-	118	12	34.0	3.91	53.00	24,600
January 1912	-	128	-	60.5	6.95	8.01	3,720
July 1926	-	20	17	18.9	2.17	2.50	1,160
August	-	34	15	19.2	2.21	2.55	1,180
September 1927	-	90	20	37.2	4.28	4.78	2,210
Water year 1926-27	-	194	19	42.7	4.91	66.63	30,900
Calendar year 1927	-	250	20	49.7	5.71	77.48	36,000
September 1949	657	45	18	21.9	2.52	2.81	1,300
Water year 1948-49	17,665	169	18	48.4	5.56	75.51	35,040
Calendar year 1949	17,599	169	14	48.2	5.54	75.23	34,900

Salmon River near Government Camp, Oreg.--Continued

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	22	15	54	52	26	20	42	52	a69	43	23	19
2	24	16	61	50	24	20	39	58	a71	a42	24	19
3	40	18	66	48	24	19	35	63	74	a41	23	20
4	30	20	72	47	24	19	33	68	70	a40	22	19
5	25	20	77	46	24	19	31	69	66	a39	22	32
6	23	21	80	49	23	20	31	58	69	a38	23	33
7	21	25	83	49	23	21	33	56	70	a37	24	33
8	19	23	85	49	22	21	34	73	65	36	23	33
9	17	28	115	45	22	19	34	56	64	34	22	38
10	17	36	115	43	22	18	33	53	66	34	21	28
11	17	60	113	40	22	18	29	52	a65	34	21	25
12	18	60	103	39	22	19	27	60	a63	34	21	26
13	18	51	94	39	22	20	26	56	a62	34	22	26
14	18	40	83	34	22	19	26	58	a60	34	23	24
15	17	30	77	30	22	19	27	59	a59	34	21	28
16	17	28	72	30	22	19	30	60	a58	*34	21	31
17	23	28	66	29	22	19	29	60	56	33	21	30
18	19	30	63	31	22	19	32	71	a54	31	21	24
19	17	43	60	34	22	21	28	68	a52	30	21	23
20	17	60	57	29	22	23	29	61	a50	29	20	22
21	16	*69	52	30	21	24	38	65	a48	28	20	22
22	16	51	56	29	21	27	43	72	a46	28	20	21
23	15	67	68	28	21	32	48	68	a45	29	20	21
24	16	40	58	28	21	28	57	63	*43	28	20	20
25	17	39	52	28	21	25	61	59	50	29	20	20
26	17	40	51	28	20	24	53	57	53	29	19	21
27	17	42	51	26	25	23	50	57	49	29	19	19
28	16	45	50	25	27	24	45	a59	49	28	19	19
29	15	48	49	25	-	26	46	a62	48	28	19	19
30	15	49	52	31	------	29	51	a64	46	23	19	18
31	15	------	55	29	------	35	------	a67	------	22	19	------
Total	594	1,142	2,190	1,120	631	689	1,120	1,904	1,740	1,012	653	733
Mean	19.2	38.1	70.6	36.1	22.5	22.2	37.3	61.4	58.0	32.6	21.1	24.4
Cfsm	2.21	4.38	8.11	4.15	2.59	2.55	4.29	7.06	6.67	3.75	2.43	2.80
In.	2.55	4.89	9.35	4.78	2.70	2.94	4.79	8.14	7.44	4.32	2.80	3.12
Ac-ft	1,180	2,270	4,340	2,220	1,250	1,360	2,220	3,780	3,450	2,000	1,300	1,450

Calendar year 1910: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1910-11: Max 115 Min 15 Mean 37.1 Cfsm 4.26 In. 67.82 Ac-ft 26,800

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

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	22	30	40	24	24	25	27	68	126	60	32
2	21	21	29	33	24	24	24	*26	74	111	56	32
3	21	21	29	30	24	24	23	28	91	102	53	34
4	21	21	29	29	24	23	23	32	124	97	52	34
5	*20	21	31	28	24	23	23	39	138	93	50	34
6	20	22	33	27	52	23	26	44	142	92	50	*32
7	21	22	29	26	78	24	29	49	143	92	50	32
8	20	23	28	26	60	24	31	52	164	87	50	32
9	20	22	28	25	50	25	36	48	203	92	50	30
10	29	*21	27	25	40	25	37	56	203	88	48	30
11	50	22	26	25	36	26	31	74	184	88	46	30
12	54	28	26	24	34	26	31	72	176	92	44	30
13	30	24	26	24	32	25	32	56	154	96	44	32
14	26	26	*26	24	30	25	29	49	139	98	44	36
15	25	27	28	24	29	24	28	51	126	99	44	40
16	24	36	24	24	28	23	26	61	*114	97	42	50
17	24	55	24	24	27	23	25	66	114	85	42	44
18	23	57	24	24	26	22	25	80	114	81	40	38
19	33	49	23	24	26	22	24	107	114	78	38	36
20	31	38	23	23	26	21	25	122	124	75	38	36
21	50	34	23	23	25	*20	28	107	132	72	36	36
22	36	33	25	34	25	21	30	88	134	63	36	38
23	29	31	27	34	25	21	27	77	126	65	34	40
24	26	30	25	31	24	20	25	76	113	66	34	40
25	25	40	23	28	24	20	25	74	108	*63	32	38
26	24	37	22	26	24	20	25	84	110	66	32	38
27	23	44	23	26	24	20	23	83	111	62	32	40
28	23	36	22	26	24	22	23	84	114	60	34	46
29	22	33	24	26	-	28	24	98	112	62	34	44
30	22	31	60	26	------	24	26	97	114	64	34	42
31	22	------	74	*25	------	23	------	75	------	61	34	------
Total	837	927	891	834	889	715	809	2,082	3,883	2,583	1,313	1,096
Mean	27.0	30.9	28.7	26.9	31.8	23.1	27.0	67.2	129	83.3	42.4	36.5
Cfsm	3.10	3.55	3.30	3.09	3.66	2.66	3.10	7.72	14.8	9.57	4.87	4.20
In.	3.58	3.96	3.81	3.57	3.80	3.06	3.46	8.90	16.60	11.04	5.61	4.69
Ac-ft	1,660	1,840	1,770	1,650	1,760	1,420	1,600	4,130	7,700	5,120	2,600	2,170

Calendar year 1954: Max 126 Min 20 Mean 48.7 Cfsm 5.60 In. 76.03 Ac-ft 35,280
Water year 1954-55: Max 203 Min 20 Mean 46.2 Cfsm 5.31 In. 72.08 Ac-ft 33,420

Peak discharge (base, 150 cfs).--June 9 (6 p.m.) 235 cfs (2.15 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Feb. 8 to Mar. 20, Aug. 6 to Sept. 5, Sept. 7-30; discharge estimated on basis of weather records, recorded range in stage, and records for White River below Tygh Valley.

Sandy River near Marmot, Oreg.

Location.--Lat 45°23'10", long 122°08'00", in NE¼ sec. 24, T. 2 S., 5 E., on right bank 1 mile southwest of Marmot, 1½ miles upstream from Sandy River Dam of Portland General Electric Co., and 6 miles downstream from Salmon River.

Drainage area.--262 sq mi.

Records available.--August 1911 to September 1955. Records for period January 1916 to June 1919, published as "below 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.'s benchmark). Prior to Oct. 19, 1933, water-stage recorder (staff gage for short periods) at various sites ranging from 1¾ miles below to half a mile above present site at various datums.

Average discharge.--44 years, 1,338 cfs (968,700 acre-ft per year).

Extremes.--Maximum discharge during year, 12,600 cfs Dec. 30 (gage height, 11.60 ft); minimum, 361 cfs Oct. 9, Sept. 26, 27 (gage height, 3.29 ft).
1911-55: Maximum discharge, 29,200 cfs Jan. 6, 1923 (gage height, 17.5 ft, site and datum then in use), by computation of flow over dam; minimum, 195 cfs Nov. 27, 28, 1952.

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

Cooperation.--Water-stage recorder inspected by employee of Portland General Electric Co.

Revisions (water years).--WSP 594: Drainage area. WSP 1288: 1912(M), 1915, 1922, 1924, 1934(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.2	325	6.0	2,350
4.0	710	8.0	5,100
5.0	1,400	10.5	10,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	396	585	1,000	5,520	1,200	962	1,800	1,460	2,810	2,230	794	450
2	392	560	962	3,390	1,080	903	1,670	1,300	2,510	2,150	746	455
3	388	545	936	2,370	988	842	1,460	1,350	2,770	1,780	699	460
4	383	530	896	1,890	*942	776	1,280	1,430	3,560	1,620	682	460
5	378	530	896	1,610	1,030	728	1,220	*1,870	4,050	1,460	666	460
6	374	565	1,010	1,380	1,180	722	1,350	2,180	4,360	1,380	682	468
7	374	540	968	1,250	3,240	728	1,740	2,350	4,530	1,300	677	468
8	378	530	903	1,160	5,220	788	2,100	2,690	5,080	1,310	650	450
9	365	550	866	1,080	3,520	830	2,650	2,300	5,920	1,300	616	*437
10	478	515	824	1,000	2,400	952	2,990	2,330	5,770	1,220	606	424
11	*821	491	782	942	1,900	1,360	2,340	3,140	5,000	1,180	606	424
12	2,000	*855	824	910	1,610	1,200	2,670	3,400	4,290	1,190	590	406
13	1,500	611	1,100	1,010	1,440	1,090	3,110	2,810	*3,520	1,250	565	446
14	1,100	638	1,040	922	1,300	994	2,280	2,300	2,940	1,320	555	540
15	900	677	*1,150	896	1,210	903	1,840	2,300	2,470	1,320	550	530
16	750	824	1,010	884	1,150	854	1,700	2,350	2,160	1,350	545	848
17	650	2,150	929	890	1,080	830	1,550	2,400	2,080	1,110	535	694
18	600	2,540	866	848	974	824	1,420	3,050	2,050	1,020	545	515
19	650	2,210	818	806	936	794	1,330	4,480	1,990	974	540	455
20	750	1,680	782	806	896	752	1,270	4,880	2,160	929	525	446
21	2,500	1,350	776	776	872	758	1,470	4,050	2,340	896	500	419
22	2,000	1,170	866	1,000	878	1,270	2,220	3,370	2,310	910	500	396
23	1,500	1,030	994	1,230	836	*1,200	2,110	2,840	2,130	922	496	392
24	1,200	900	1,110	1,210	872	1,170	1,820	2,430	1,820	890	482	374
25	1,000	1,200	1,020	1,240	842	1,250	1,580	2,420	1,680	824	473	365
26	890	1,100	936	1,170	818	1,150	1,510	2,690	1,620	854	464	361
27	812	1,700	854	1,110	776	1,080	1,300	2,960	1,590	854	455	442
28	746	1,400	878	1,080	836	1,250	1,220	2,730	1,790	*782	455	655
29	688	1,200	1,890	1,050	-	2,000	1,230	3,120	1,780	794	455	505
30	644	1,100	7,360	1,060	------	1,820	1,280	3,960	1,800	830	460	446
31	611	-----	9,730	1,180	-----	1,670	-----	3,280	------	818	464	------
Total	26,218	30,076	44,976	41,670	40,026	32,450	53,510	84,220	88,880	36,767	17,578	14,191
Mean	846	1,003	1,451	1,344	1,430	1,047	1,784	2,717	2,963	1,186	567	473
Cfsm	3.23	3.83	5.54	5.13	5.46	4.00	6.81	10.4	11.3	4.53	2.16	1.81
In.	3.72	4.27	6.38	5.91	5.68	4.61	7.60	11.95	12.62	5.22	2.50	2.01
Ac-ft	52,000	59,650	89,210	82,650	79,390	64,360	106,100	167,000	176,300	72,930	34,870	28,150

Calendar year 1954: Max 9,730 Min 365 Mean 1,386 Cfsm 5.29 In. 71.83 Ac-ft 1,004,000
Water year 1954-55: Max 9,730 Min 361 Mean 1,399 Cfsm 5.34 In. 72.47 Ac-ft 1,013,000

Peak discharge (base, 7,700 cfs).--Dec. 30 (11 p.m.) 12,600 cfs (11.60 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 12-25, Nov. 24 to Dec. 1; discharge estimated on basis of weather records, recorded range in stage when available, and records for station below Bull Run River near Bull Run.

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, approximately.

Records available.--Ocotober 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Portland Water Bureau). Prior to Oct. 9, 1930, staff gage at same site and datum.

Extremes.--Maximum contents during year, 30,430 acre-ft July 27 (elevation, 1,044.68 ft); minimum, 15,190 acre-ft Nov. 15 (elevation, 1,000.69 ft).
1928-55: Maximum contents, 31,600 acre-ft Mar. 31, 1931 (elevation, 1,047.40 ft); minimum after first filling, 10,170 acre-ft Dec. 2, 1952 (elevation, 980.52 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); capacity of reservoir increased to 30,140 acre-ft at elevation 1,044 ft by installation of three 40-foot long and 8-foot high vertical 1-foot gates in October 1954. 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).--WSP 814: 1935(M).

Month-end elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,026.05	23,270	-
Oct. 31	1,020.54	21,360	-1,910
Nov. 30	1,037.20	27,400	+6,040
Dec. 31	1,040.61	28,740	+1,340
Calendar year 1954	-	-	+1,280
Jan. 31	1,037.38	27,470	-1,270
Feb. 28	1,036.78	27,230	-240
Mar. 31	1,037.48	27,510	+280
Apr. 30	1,037.14	27,370	-140
May 31	1,037.90	27,670	+300
June 30	1,043.34	29,860	+2,190
July 31	1,044.57	30,390	+530
Aug. 31	1,035.06	26,570	-3,820
Sept.30	1,036.16	26,990	+420
Water year 1954-55	-	-	+3,720

† Elevation at 12 p.m.

Bull Run River near Bull Run, Oreg.

Location.--Lat 45°27'20", long 122°07'50", in SE¼ sec. 25, T. 1 S., R. 5 E., on left bank 1 mile 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 1955.

Gage.--Water-stage recorder. Datum of gage is 759 ft above mean sea level (topographic survey of 1954). Prior to July 27, 1909, staff gage 1 mile downstream at different datum. July 27, 1909, to July 25, 1916, water-stage recorder at present site at datum 1.0 ft lower; July 26, 1916, to July 21, 1924, at datum 1.0 ft higher; July 22, 1924, to Aug. 24, 1928, at datum 0.5 ft higher. Supplementary staff gage 1 mile 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.--48 years (1907-55), 743 cfs, adjusted for storage, since 1929 (537,900 acre-ft per year).

Extremes.--Maximum discharge during year, 10,200 cfs Dec. 30 (gage height, 9.02 ft); minimum, 117 cfs Oct. 4, 5.
1895-1955: 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 no gage-height record, which are good. Flow regulated by Bull Run Lake and Lake Ben Morrow (see p. 99). Flow from Bull Run Lake is not artificially regulated, but reaches river through surface and underground channels. No diversion above station.

Cooperation.--Water-stage recorder inspected by Portland Water Bureau.

Revisions (water years).--WSP 1288: 1910-11, 1913, 1920-23, 1926, 1929.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	130	600	3,800	820	394	1,250	660	1,120	1,190	300	212
2	119	140	550	2,110	702	394	1,030	650	994	1,500	282	222
3	119	140	500	1,380	600	366	898	680	1,240	1,400	267	222
4	117	150	480	1,040	*566	324	768	*675	1,730	784	246	222
5	117	150	480	856	635	294	686	774	1,750	349	252	232
6	121	150	600	708	792	285	675	923	1,780	499	252	246
7	122	160	650	610	2,780	282	768	1,010	1,930	553	246	232
8	121	187	600	558	*4,370	294	898	1,150	2,270	580	240	*215
9	119	194	550	499	2,440	304	1,320	1,050	2,740	571	240	212
10	135	642	486	454	1,460	366	1,900	994	2,590	540	252	210
11	167	1,220	441	418	1,050	595	1,470	1,220	2,150	499	270	200
12	839	*1,260	469	390	858	595	1,930	1,460	1,710	474	258	192
13	1,390	1,220	820	450	718	562	2,330	1,300	858	504	243	198
14	1,310	1,220	766	442	630	494	1,530	1,100	*658	526	243	192
15	1,260	868	915	418	571	715	1,120	1,080	975	526	243	178
16	1,220	341	*742	422	526	675	988	1,080	886	517	243	243
17	1,190	581	623	458	490	442	886	1,100	630	470	240	218
18	925	748	549	430	434	386	779	1,290	625	430	235	192
19	334	782	490	394	402	349	713	1,850	796	314	235	185
20	157	1,270	448	394	378	324	696	2,040	868	310	232	180
21	130	1,360	424	382	360	328	814	1,630	936	321	230	172
22	500	900	514	508	374	434	1,550	1,340	1,140	318	230	163
23	1,100	480	614	675	363	544	1,530	1,120	1,120	304	230	161
24	850	600	766	708	363	*757	1,270	962	856	294	218	161
25	700	700	646	982	360	796	994	956	625	285	202	161
26	550	750	565	886	349	686	880	1,100	526	338	200	158
27	420	1,100	486	757	328	640	724	1,400	670	426	200	200
28	360	1,100	490	660	338	645	635	1,240	904	346	210	238
29	300	900	1,270	600	-	790	605	1,320	1,360	*324	220	210
30	170	750	6,610	580	-------	996	605	1,580	994	346	215	212
31	130	-------	6,510	670	-------	1,090	-------	1,360	-------	324	198	-------
Total	15,214	20,193	30,654	23,639	24,037	16,146	32,242	36,074	37,431	16,162	7,372	6,039
Mean	491	673	989	763	858	521	1,075	1,164	1,248	521	238	201
Ac-ft	30,180	40,050	60,800	46,890	47,680	32,030	63,950	71,550	74,240	32,060	14,620	11,980

Adjusted for change in contents of Lake Ben Morrow

Mean	460	775	1,110	742	854	525	1,072	1,169	1,284	530	176	208
Cfsm	4.51	7.60	9.91	7.27	8.37	5.15	10.5	11.5	12.6	5.20	1.73	2.04
In.	5.20	8.47	11.42	8.39	8.72	5.94	11.73	13.21	14.05	5.99	1.99	2.28
Ac-ft	28,270	46,090	62,140	45,620	47,440	32,310	63,810	71,850	76,430	32,590	10,800	12,400

Observed

Calendar year 1954: Max 6,610 Min 117 Mean 736 Ac-ft 532,900
Water year 1954-55: Max 6,610 Min 117 Mean 727 Ac-ft 526,000

Adjusted

Calendar year 1954: Mean 738 Cfsm 7.24 In. 98.18 Ac-ft 534,200
Water year 1954-55: Mean 732 Cfsm 7.18 In. 97.39 Ac-ft 529,700

Peak discharge (base, 5,400 cfs).--Dec. 30 (9 p.m.) 10,200 cfs (9.02 ft); Feb. 8 (11:30 a.m.) 5,560 cfs (6.57 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 21 to Nov. 7, Nov. 22 to Dec. 9; discharge estimated on basis of recorded range in stage and records of release and spill from Lake Ben Morrow, near Bull Run.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 712 ft above mean sea level (topographic survey of 1954). 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 present site at datum 0.28 ft higher.

Average discharge.--36 years (1919-55), 141 cfs (102,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,280 cfs Dec. 30 (gage height, 6.37 ft); minimum, 17 cfs Sept. 12.
1911-13, 1919-55: Maximum discharge, 5,320 cfs Nov. 20, 1921 (gage height, 9.18 ft, present datum), from rating curve extended above 2,200 cfs by logarithmic plotting; minimum, 8 cfs Aug. 20, Sept. 16, 17, 1940.

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

Cooperation.--Water-stage recorder graph furnished by Portland General Electric Co.

Revisions (water years).--WSP 1154: 1949. WSP 1248: Drainage area. WSP 1288: 1912, 1920(M), 1921(M), 1922-23, 1931, 1945.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
2.1	20	3.5	252	1.9	14	4.0	440
2.3	33	4.0	440	2.2	29	4.5	675
2.6	62	4.5	675	2.5	56	5.0	1,000
3.0	126	5.0	1,000	2.9	120	6.0	1,870
				3.3	205		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	45	122	675	156	89	248	166	202	346	42	18
2	28	42	107	404	134	96	218	158	188	248	39	18
3	27	40	99	278	116	86	190	162	328	180	36	18
4	26	39	94	220	112	75	168	*170	440	156	35	18
5	26	42	94	185	136	68	156	192	384	134	33	18
6	24	58	136	156	172	65	158	210	372	124	32	18
7	26	50	116	138	585	64	176	222	380	110	31	18
8	27	46	99	128	626	g72	198	233	428	112	30	18
9	24	50	92	114	388	g69	270	208	494	107	28	*18
10	49	44	89	103	248	g69	328	202	467	98	28	18
11	*104	42	81	94	192	g84	254	245	380	92	27	18
12	423	*157	91	89	160	g101	344	266	300	91	27	17
13	200	104	138	96	142	101	408	222	*248	89	26	24
14	122	118	120	87	128	96	287	198	208	87	25	43
15	90	122	*164	86	114	89	228	218	170	81	25	37
16	75	149	138	86	105	82	202	215	160	78	24	139
17	67	399	126	89	98	78	178	242	164	66	24	91
18	56	552	110	86	86	81	166	284	170	60	23	49
19	63	408	99	81	80	76	156	360	172	56	22	38
20	70	260	92	81	76	70	152	350	200	52	22	34
21	301	190	91	78	72	68	202	272	215	47	22	31
22	288	152	130	140	78	115	353	228	202	44	21	28
23	198	128	158	170	72	*124	314	195	198	42	22	26
24	143	109	156	162	72	134	257	172	158	41	22	25
25	111	162	132	188	72	176	210	176	144	40	21	24
26	90	148	118	170	70	g192	200	248	148	54	21	23
27	78	251	101	152	66	176	168	275	142	66	20	52
28	65	208	109	138	70	190	154	230	208	*48	20	126
29	58	168	384	128	-	266	154	254	242	45	20	81
30	52	142	1,560	126	------	242	154	308	250	50	19	57
31	49	-----	1,230	148	-----	225	-----	245	------	45	20	------
Total	2,988	4,425	6,376	4,876	4,426	3,519	6,651	7,126	7,762	2,889	807	1,143
Mean	96.4	148	206	157	158	114	222	230	259	93.2	26.0	38.1
Cfsm	4.32	6.64	9.24	7.04	7.09	5.11	9.96	10.3	11.6	4.18	1.17	1.71
In.	4.98	7.38	10.63	8.13	7.38	5.87	11.09	11.88	12.94	4.82	1.35	1.91
Ac-ft	5,930	8,780	12,650	9,670	8,780	6,980	13,190	14,130	15,400	5,730	1,600	2,270

Calendar year 1954: Max 1,560 Min 23 Mean 148 Cfsm 6.64 In. 90.18 Ac-ft 107,300
Water year 1954-55: Max 1,560 Min 17 Mean 145 Cfsm 6.50 In. 88.36 Ac-ft 105,100

Peak discharge (base, 1,400 cfs).--Dec. 30 (7 p.m.) 2,280 cfs (6.37 ft).
* Discharge measurement made on this day.
g Computed from once-daily staff-gage readings.

Sandy River below Bull Run River, near Bull Run, Oreg.

Location.--Lat 45°27'20", long 122°15'00", 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 1955.

Gage.--Water-stage recorder. Altitude of gage is 200 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.--30 years, 2,299 cfs (1,664,000 acre-ft per year).

Extremes.--Maximum discharge during year, 26,100 cfs Dec. 30 (gage height, 13.78 ft); minimum, 96 cfs Sept. 6; minimum daily, 119 cfs Sept. 25.
1910-14, 1929-55: 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, 63 cfs Oct. 12, Nov. 9, 1952.

Remarks.--Records good. No diversion above station for irrigation during year; about 80,000 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.

Revisions (water years).--WSP 1288: 1910-12, 1914(M), 1948.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	114	4.0	1,910
1.0	137	6.0	4,280
1.5	288	9.0	10,400
2.0	495	12.0	19,400
3.0	1,080		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	504	812	1,930	11,200	2,250	1,600	3,620	2,300	4,140	3,740	*1,050	518
2	499	816	1,740	6,600	2,060	1,670	3,240	2,410	3,680	3,990	983	624
3	320	796	1,610	4,550	1,840	1,510	2,800	2,340	4,280	3,340	906	588
4	526	606	1,460	3,570	*1,750	1,320	2,470	2,390	5,670	2,680	862	488
5	503	758	1,380	2,880	1,820	1,180	2,280	*2,820	6,130	1,970	824	414
6	500	806	1,920	2,570	1,920	966	2,340	3,320	6,540	2,000	780	551
7	472	652	1,890	2,280	6,560	1,160	2,720	3,520	6,840	1,930	746	528
8	*488	729	1,550	2,050	10,300	1,170	3,240	3,970	7,690	1,940	798	*596
9	476	764	1,810	1,860	7,040	1,230	4,130	3,560	8,990	1,980	786	608
10	508	1,080	1,560	1,680	4,270	1,290	5,230	3,450	8,810	1,790	762	518
11	836	1,810	1,450	1,430	3,250	2,140	4,270	4,380	7,670	1,770	782	354
12	3,040	1,990	1,420	1,480	2,690	1,980	4,980	5,070	6,290	1,690	778	584
13	3,140	2,040	2,170	1,630	2,340	1,810	6,580	4,380	4,680	1,730	752	618
14	2,420	1,980	2,030	1,580	2,110	1,730	4,560	3,680	*3,700	1,870	422	711
15	2,160	*1,850	2,440	1,480	2,010	1,760	3,530	3,480	3,650	1,930	688	648
16	2,100	1,260	*2,130	1,350	1,850	1,750	3,160	3,620	3,210	1,990	680	953
17	1,980	3,070	1,900	1,510	1,760	1,430	2,860	3,630	2,810	1,460	698	1,110
18	1,660	4,280	1,740	1,450	1,610	1,370	2,610	4,440	2,700	1,450	656	634
19	1,090	3,840	1,480	1,360	1,450	1,300	2,440	6,580	2,720	1,320	639	649
20	1,050	3,570	1,450	1,400	1,320	1,190	2,360	7,420	3,050	1,220	638	640
21	2,090	3,170	1,410	1,330	1,320	1,200	2,620	6,010	3,250	1,170	491	624
22	3,540	2,560	1,620	1,630	1,380	1,720	4,450	4,830	3,520	1,150	574	591
23	3,220	1,450	1,840	2,100	1,300	*1,990	4,390	4,200	3,480	1,130	584	550
24	2,450	1,730	2,290	2,110	1,310	2,210	3,680	3,560	2,930	1,100	600	462
25	2,070	1,980	1,970	2,510	1,320	2,450	3,080	3,550	2,500	1,090	532	119
26	1,730	2,170	1,680	2,340	1,220	2,350	3,020	3,920	2,100	1,170	514	538
27	1,430	2,920	1,520	2,160	1,160	2,130	2,540	4,630	2,370	1,340	504	646
28	1,290	3,010	1,500	2,010	1,290	2,240	2,350	4,130	2,820	1,190	427	880
29	1,110	2,530	3,250	1,890	-	3,180	2,270	4,370	3,440	1,090	477	850
30	876	2,180	15,500	1,710	------	3,260	2,220	5,820	3,030	1,150	573	772
31	844	-----	19,300	1,990	------	3,230	-----	4,980	------	1,060	678	------
Total	44,922	57,209	86,940	75,690	70,500	55,516	100,040	126,760	132,690	54,430	21,184	18,366
Mean	1,449	1,907	2,805	2,442	2,518	1,791	3,335	4,089	4,423	1,756	683	612
Cfsm	3.29	4.33	6.38	5.55	5.72	4.07	7.58	9.29	10.1	3.99	1.55	1.39
In.	3.80	4.84	7.35	6.40	5.96	4.69	8.46	10.71	11.22	4.60	1.79	1.55
Ac-ft	89,100	113,500	172,400	150,100	139,800	110,100	198,400	251,400	263,200	108,000	42,020	36,430

Calendar year 1954: Max 19,300 Min 181 Mean 2,336 Cfsm 5.31 In. 72.07 Ac-ft 1,691,000
Water year 1954-55: Max 19,300 Min 119 Mean 2,313 Cfsm 5.26 In. 71.37 Ac-ft 1,674,000

Peak discharge (base, 17,000 cfs).--Dec. 30 (10:30 p.m.) 26,100 cfs (13.78 ft).
* Discharge measurement made on this day.

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 4 miles (corrected) northeast of Washougal.

Drainage area.--108 sq mi.

Records available.--September 1944 to September 1955.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 175 ft (from topographic map).

Average discharge.--11 years, 890 cfs (644,300 acre-ft per year).

Extremes.--Maximum discharge during year, 11,000 cfs Feb. 8 (gage height, 11.6 ft, from graph based on gage readings); minimum observed, 70 cfs Sept. 5-7, 10-13 (gage height, 1.54 ft).
1944-55: Maximum discharge, 17,700 cfs Dec. 9, 1953 (gage height, 15.56 ft); minimum observed, 45 cfs Oct. 7, 1952 (gage height, 1.38 ft).

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

Revisions (water years).--WSP 1248: 1945-47, 1948(M). 1949-50, 1951(P).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 27 to Dec. 26, Dec. 29)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
1.6	82	3.5	820	1.5	62	4.0	1,200
1.8	128	4.0	1,130	1.7	104	5.0	2,010
2.0	185	5.0	1,900	2.0	182	6.0	3,020
2.3	280	6.0	2,870	2.3	278	7.0	4,230
2.6	390	7.0	4,050	2.6	395	8.0	5,560
3.0	560	8.0	5,450	3.0	585	10.0	8,500
				3.5	870		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89	236	808	3,670	1,140	596	2,350	1,190	520	535	241	82
2	86	224	635	2,600	910	565	1,820	1,100	739	580	218	82
3	91	215	615	2,000	*755	500	1,400	978	1,120	413	194	78
4	95	206	556	1,600	705	413	1,270	1,010	948	349	182	76
5	93	224	492	1,300	784	387	1,200	1,500	700	310	171	72
6	82	290	1,020	1,100	892	378	1,260	*1,430	678	271	165	70
7	86	242	1,460	1,000	3,410	370	1,450	1,430	656	258	157	70
8	*116	262	1,280	920	7,250	422	1,620	1,560	634	244	149	78
9	116	308	880	870	2,890	540	2,780	1,280	744	*218	141	74
10	173	354	755	810	1,720	997	2,820	1,230	706	209	133	70
11	808	402	670	770	1,260	1,130	2,190	1,560	*500	203	131	70
12	710	615	725	740	1,090	1,310	3,460	1,510	422	191	128	70
13	510	538	1,250	870	918	990	3,410	1,150	361	171	128	86
14	343	575	1,520	850	828	744	2,100	954	322	154	126	165
15	276	868	1,760	920	695	612	1,560	828	292	149	118	154
16	236	1,670	1,260	1,100	656	570	1,550	786	278	179	118	585
17	233	3,590	1,040	1,300	607	*525	1,440	918	261	168	111	370
18	206	3,430	874	1,200	535	535	1,310	1,030	261	162	*104	222
19	245	*3,120	725	1,100	505	525	1,190	1,370	254	154	100	182
20	650	1,900	620	1,000	476	520	1,170	1,240	251	149	100	160
21	1,340	1,220	590	960	454	575	1,290	1,010	244	144	97	144
22	1,550	904	675	1,000	472	2,860	2,500	948	238	141	95	126
23	874	720	730	1,150	436	1,490	2,480	750	261	136	95	118
24	640	640	826	1,350	495	1,060	1,780	656	234	133	95	114
25	515	1,000	886	1,690	480	1,100	1,400	690	206	133	95	104
26	426	1,410	844	1,200	495	690	1,320	734	225	525	95	*100
27	366	2,000	660	970	440	646	1,120	750	278	400	95	228
28	326	1,440	800	868	458	798	990	646	341	278	91	480
29	294	1,140	*1,490	760	-	2,940	1,060	744	413	322	86	307
30	273	952	4,000	685	------	2,420	1,130	786	485	300	82	261
31	248	-----	5,000	740	-----	2,330	-----	656	------	271	82	------
Total	12,096	30,695	35,446	37,093	31,756	29,538	52,420	32,424	13,572	7,850	3,923	4,798
Mean	390	1,023	1,143	1,197	1,134	953	1,747	1,046	452	253	127	160
Cfsm	3.61	9.47	10.6	11.1	10.5	8.82	16.2	9.69	4.19	2.34	1.18	1.48
In.	4.17	10.57	12.21	12.77	10.94	10.17	18.05	11.17	4.67	2.70	1.35	1.65
Ac-ft	23,990	60,880	70,310	73,570	62,990	58,590	104,000	64,310	26,920	15,570	7,780	9,520

Calendar year 1954: Max 6,600 Min 82 Mean 772 Cfsm 7.15 In. 97.10 Ac-ft 559,200
Water year 1954-55: Max 7,250 Min 70 Mean 799 Cfsm 7.40 In. 100.42 Ac-ft 578,400

Peak discharge (base, 5,000 cfs).--Probably Dec. 31 (time and discharge unknown); Feb. 8 (9 a.m.) 11,000 cfs (11.6 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 27, 28, 30, 31, Jan. 2-24; discharge estimated on basis of records for stations on nearby streams.

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 road bridge, 1 mile upstream from mouth, and 2½ miles north of Washougal.

Drainage area.--23.8 sq mi.

Records available.--June 1951 to November 1955 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 115 ft (from topographic map).

Extremes.--1954-55: Maximum discharge during water year, 915 cfs Feb. 8 (gage height, 6.39 ft), but may have been higher on Dec. 31; minimum, 6.3 cfs Sept. 24, but may have been less during period Oct. 1-7.
1955: Maximum discharge during period October to November, 1,260 cfs Nov. 26 (gage height, 7.09 ft); minimum, 12.5 cfs Oct. 3.
1951-55: Maximum discharge, 1,620 cfs Jan. 18, 1953 (gage height, 7.73 ft); minimum, 4.1 cfs Nov. 28, 1952 (gage height, 3.16 ft).

Remarks.--Records fair. Some diversion for domestic use. No regulation.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	16	89	500	102	108	284	103	42	36	19	20
2	7.0	16	74	350	102	103	266	99	41	36	17	20
3	7.2	16	63	304	97	95	224	95	49	31	16	18
4	7.5	15.5	55	249	*102	80	184	89	48	29	14.5	13
5	7.4	18.5	50	211	100	72	156	89	44	27	12.5	15.5
6	7.2	23	130	171	161	72	142	*89	42	26	12.5	16.5
7	10	20	170	148	385	74	136	86	39	25	11	17
8	*13	18.5	150	135	744	76	129	83	36	26	11	19.5
9	10.5	18.5	120	117	486	77	198	80	31	*26	11	18
10	18	18.5	100	*100	308	95	214	76	32	25	10.5	16.5
11	23	18.5	85	92	227	103	254	74	*31	24	10.5	17
12	22	19.5	110	86	178	108	441	71	31	21	11	16
13	15	21	150	84	144	117	468	68	30	19	10.5	22
14	12.5	21	140	84	110	108	353	92	30	18	9.9	22
15	10.5	35	180	84	94	103	266	71	28	17	9.4	22
16	10.5	50	160	88	83	99	243	62	26	21	9.6	31
17	12	250	120	120	78	*92	211	62	26	18.5	8.6	19
18	11	345	100	170	71	92	184	56	26	16.5	*11	14.5
19	22	*297	90	140	67	86	182	56	24	16.5	15.5	12.5
20	24	219	80	130	63	82	178	57	23	16	17	12
21	59	156	72	127	62	89	196	56	22	15.5	14.5	11
22	63	115	80	122	67	175	269	54	25	15	15	10.5
23	48	89	100	122	62	167	308	52	34	15	16	8.6
24	37	70	120	122	64	140	266	49	24	15.5	16.5	8.2
25	31	124	110	122	64	156	216	47	23	15.5	18.5	8.2
26	26	122	100	122	66	156	216	50	23	36	17.5	*7.8
27	24	164	80	122	64	144	169	50	22	27	16.5	34
28	22	160	90	122	80	152	142	43	47	20	16	30
29	21	135	140	114	-	229	131	45	40	26	16.5	20
30	19.5	112	740	105	------	249	107	47	33	25	19.5	16.5
31	18	-----	700	102	-----	254	----	45	------	21	23	------
Total	626.0	2,703.5	4,548	4,665	4,231	3,753	6,733	2,096	972	706.0	437.5	516.8
Mean	20.2	90.1	147	150	151	121	224	67.6	32.4	22.8	14.1	17.2
Cfsm	0.849	3.79	6.18	6.30	6.34	5.08	9.41	2.84	1.36	0.958	0.592	0.723
In.	0.98	4.22	7.11	7.29	6.61	5.86	10.52	3.28	1.52	1.10	0.68	0.81
Ac-ft	1,240	5,360	9,020	9,250	8,390	7,440	13,350	4,160	1,930	1,400	868	1,030

Calendar year 1954: Max 740 Min 7.0 Mean 87.7 Cfsm 3.68 In. 50.02 Ac-ft 63,480
Water year 1954-55: Max 744 Min 7.0 Mean 87.6 Cfsm 3.68 In. 49.98 Ac-ft 63,440

Peak discharge (base, 1,100 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-7, Nov. 15-17, Dec. 6 to Jan. 2, Jan. 17-20; discharge estimated on basis of records for stations on nearby streams.

Discharge, in cubic feet per second, 1955

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1	15	337	9	478	158	17	72	a130	25	81	652
2	13.5	314	10	416	263	18	68	242	26	95	864
3	13.5	284	11	246	249	19	66	718	27	111	910
4	55	335	12	180	204	20	60	459	28	182	*500
5	69	300	13	129	175	21	58	337	29	284	a380
6	48	260	14	103	144	22	56	266	30	405	a320
7	49	206	15	94	117	23	54	311	31	365	-
8	78	175	16	83	a115	24	52	314			

Total	4,079.0	10,039
Mean	132	335
Cubic feet per second per square mile	5.55	14.1
Runoff in inches	6.37	15.69
Runoff in acre-feet	8,090	19,910

Peak discharge (base, 1,100 cfs).--Nov. 26 (7 p.m.) 1,260 cfs (7.09 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

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 left bank 400 ft upstream from Salt Creek and 2 miles southeast of Oakridge.

Drainage area.--392 sq mi.

Records available.--October 1913 to September 1914, September 1935 to September 1955.

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.--21 years, 1,120 cfs (810,800 acre-ft per year).

Extremes.--Maximum discharge during year, 5,160 cfs Dec. 30 (gage height, 5.95 ft); minimum, 311 cfs Sept. 12, 13.
1913-14, 1935-55: 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).

Remarks.--Records excellent.

Revisions (water years).--WSP 1248: 1914.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
2.3	305	4.0	1,520	2.3	295	5.0	2,840
3.0	650	5.0	3,010	3.0	620	5.5	3,900
3.5	1,010			4.0	1,440		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	341	329	358	3,920	1,260	684	1,690	1,480	1,390	1,000	438	327
2	337	329	*358	2,020	1,040	1,120	1,560	1,390	1,260	924	424	327
3	333	329	358	1,380	900	828	1,400	1,290	1,340	852	420	327
4	333	325	354	1,100	820	687	1,260	1,270	1,590	806	411	323
5	333	325	358	908	778	609	1,150	1,470	2,020	785	402	323
6	333	325	568	785	750	576	1,100	1,740	2,380	778	393	319
7	329	325	535	715	884	587	*1,170	1,860	2,730	*750	388	315
8	337	325	455	668	1,270	792	1,340	2,030	3,140	743	384	319
9	333	329	435	662	1,490	852	1,580	1,830	3,370	736	380	319
10	333	325	426	632	1,190	852	1,920	1,770	3,280	708	375	319
11	350	329	408	604	1,000	1,070	1,710	2,090	2,820	687	371	319
12	372	404	422	576	884	1,130	1,650	2,350	2,480	687	371	315
13	417	381	766	*614	813	1,120	2,090	1,980	2,090	729	367	331
14	363	417	644	604	771	964	1,760	1,700	1,770	764	367	456
15	350	520	574	638	750	844	1,530	1,530	1,540	757	367	406
16	341	650	525	750	757	785	1,480	1,370	1,350	729	363	638
17	345	656	480	687	792	736	1,500	1,310	1,260	656	359	530
18	341	579	460	638	743	715	1,390	*1,480	1,250	609	*359	429
19	460	546	455	587	680	701	1,330	2,090	1,260	582	363	388
20	475	535	450	560	644	650	1,500	3,140	1,310	565	355	367
21	399	480	450	570	614	620	2,030	2,790	1,360	555	359	355
22	*435	450	450	771	587	708	2,660	2,240	1,360	540	351	347
23	440	426	475	940	*560	1,050	2,160	1,890	1,300	530	347	335
24	408	408	590	900	550	1,600	1,840	1,710	1,190	515	347	331
25	386	404	552	908	535	1,690	1,580	1,580	1,090	500	347	327
26	368	404	510	852	525	1,610	1,450	1,480	1,100	500	343	323
27	358	390	470	806	515	1,570	1,290	1,390	1,040	520	339	323
28	345	381	465	828	505	1,910	1,240	1,390	1,230	480	335	343
29	341	372	535	828	-	2,730	1,360	1,630	1,300	465	331	331
30	337	363	2,530	996	------	2,220	1,470	1,780	1,090	456	335	327
31	333	-----	3,920	1,230	-----	1,770	-----	1,600	------	452	331	------
Total	11,306	12,361	20,336	28,677	22,607	33,780	47,190	54,650	51,690	20,360	11,422	10,739
Mean	365	412	656	925	807	1,090	1,573	1,763	1,723	657	368	358
Cfsm	0.931	1.05	1.67	2.36	2.06	2.78	4.01	4.50	4.40	1.68	0.939	0.913
In.	1.07	1.17	1.93	2.72	2.14	3.20	4.48	5.18	4.90	1.93	1.08	1.02
Ac-ft	22,430	24,520	40,340	56,880	44,840	67,000	93,600	108,400	102,500	40,380	22,660	21,300

Calendar year 1954: Max 5,750 Min 325 Mean 1,087 Cfsm 2.77 In. 37.63 Ac-ft 786,800
Water year 1954-55: Max 3,920 Min 315 Mean 891 Cfsm 2.27 In. 30.82 Ac-ft 644,800

Peak discharge (base, 4,800 cfs).--Dec. 30 (11 to 12 p.m.) 5,160 cfs (5.95 ft).
* Discharge measurement made on this day.

Salmon Creek near Oakridge, Oreg.

Location.--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 one discharge measurement only), February 1913 to October 1919, October 1933 to September 1955. 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.--26 years (1913-15, 1917-19, 1933-55), 403 cfs (291,800 acre-ft per year).

Extremes.--Maximum discharge during year 1,720 cfs June 9 (gage height, 4.18 ft); minimum, 143 cfs Nov. 10, 11.
1913-19, 1933-55: 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).

Remarks.--Records excellent. No regulation above station. Since 1936, village of Oakridge has diverted water around station in an 8-inch pipe. Tunnel and control gates built to divert part of outflow from Waldo Lake into Salmon Creek basin were not used during year but leakage under control gates has varied, as shown by discharge measurements, from 1.7 to 13 cfs during the period 1936-53, and generally has increased with time.

Revisions (water years).--WSP 794: 1934. WSP 814: Drainage area. WSP 1124: 1935, 1942(M), 1943, 1946(M). WSP 1248: 1915, 1918.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7		Feb. 8 to Sept. 30	
1.3	122	1.4	153
2.0	340	1.9	275
2.5	550	2.5	520
3.0	820	3.5	1,130
4.0	1,570	4.1	1,640

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	154	154	159	1,140	448	275	708	580	692	525	228	172
2	151	151	*159	766	414	306	653	550	615	480	225	170
3	148	151	159	568	382	286	595	525	670	444	219	170
4	148	148	156	483	367	263	540	535	814	416	216	168
5	148	145	159	431	363	251	498	605	1,030	408	211	167
6	148	148	219	370	374	242	484	714	1,190	*403	209	165
7	148	145	197	340	640	251	*502	784	1,330	385	206	165
8	148	145	179	326	790	282	565	864	1,460	394	204	165
9	148	148	179	318	808	296	675	826	1,610	385	202	165
10	156	143	170	297	653	328	778	820	1,550	373	199	165
11	159	151	165	284	555	412	748	948	1,330	365	199	165
12	188	182	176	273	493	416	730	1,070	1,190	369	197	163
13	188	162	248	*287	448	394	766	941	1,050	385	197	168
14	165	170	228	277	421	365	702	814	857	398	194	199
15	156	191	225	280	403	331	620	730	748	398	194	192
16	156	228	209	287	394	317	595	658	653	381	192	236
17	165	219	197	273	390	300	560	642	605	353	190	211
18	156	203	188	267	365	292	530	*697	610	331	*188	190
19	232	203	182	254	342	289	502	997	620	317	185	179
20	203	194	179	248	328	275	530	1,390	642	306	183	174
21	206	185	176	254	314	266	600	1,300	680	296	183	170
22	*228	176	176	315	303	303	748	1,090	675	289	181	168
23	212	170	191	351	*286	353	730	941	653	282	181	167
24	194	165	219	344	286	565	680	826	590	275	181	165
25	185	176	212	344	278	675	620	766	545	266	181	163
26	173	173	197	336	266	626	580	742	535	266	179	162
27	168	176	188	340	263	626	525	714	506	266	179	183
28	162	170	194	351	254	748	511	719	631	254	177	170
29	156	165	241	359	-	899	540	838	670	245	174	163
30	156	162	814	390	------	808	585	913	565	242	174	162
31	156	-----	1,280	431	-----	714	-----	796	------	233	172	------
Total	5,261	5,099	7,621	11,584	11,628	12,754	18,400	25,335	25,316	10,730	6,000	5,202
Mean	170	170	246	374	415	411	613	817	844	346	194	173
Cfsm	1.45	1.45	2.10	3.20	3.55	3.51	5.24	6.98	7.21	2.96	1.66	1.48
In.	1.67	1.62	2.42	3.68	3.70	4.05	5.85	8.05	8.05	3.41	1.91	1.65
Ac-ft	10,440	10,110	15,120	22,980	23,060	25,300	36,500	50,250	50,210	21,280	11,900	10,320

Calendar year 1954: Max 1,280 Min 143 Mean 385 Cfsm 3.29 In. 44.69 Ac-ft 279,000
Water year 1954-55: Max 1,610 Min 143 Mean 397 Cfsm 3.39 In. 46.06 Ac-ft 287,500

Peak discharge (base, 1,500 cfs).--Dec. 30 (11:30 p.m.) 1,510 cfs (3.93 ft); June 9 (9 p.m.) 1,720 cfs (4.18 ft).

* 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 of Oakridge.

Drainage area.--246 sq mi.

Records available.--October 1909 to February 1916 (fragmentary), September 1935 to September 1955. 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.--20 years (1935-55), 778 cfs (563,200 acre-ft per year).

Extremes.--Maximum discharge during year, 3,580 cfs Dec. 30 (gage height, 7.75 ft); minimum, 99 cfs July 28 (gage height, 2.36 ft).
1909-16, 1935-55: 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 upstream.

Cooperation.--Gage-height record collected in cooperation with U.S. Weather Bureau.

Revisions (water years).--WSP 1248: 1914-16.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-18)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
2.7	142	5.0	1,120	2.7	160	4.0	595
3.0	202	6.0	1,870	3.0	230	5.0	1,130
3.5	335	7.5	3,300	3.5	385	7.0	2,800
4.0	540						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	166	182	2,590	772	590	1,490	1,140	1,200	775	279	178
2	170	162	184	1,580	700	721	1,360	1,120	1,060	726	276	176
3	168	162	187	1,130	634	608	1,240	1,070	1,120	676	267	174
4	168	160	191	922	590	550	1,120	1,100	1,360	631	261	174
5	168	158	168	772	600	510	1,030	1,260	1,690	586	258	168
6	170	160	*270	656	606	493	998	1,490	1,950	*577	250	166
7	174	158	262	584	1,200	501	*1,050	1,640	2,200	550	248	164
8	172	158	232	540	1,710	559	1,150	1,800	2,410	550	230	164
9	170	160	225	530	1,730	590	1,400	1,710	2,630	546	238	164
10	176	156	216	490	1,320	618	1,770	1,660	2,650	523	232	162
11	187	158	204	450	1,100	780	1,670	1,920	2,280	505	230	162
12	223	204	223	425	968	848	1,610	2,120	1,980	497	228	160
13	238	182	356	*463	878	810	1,810	1,850	1,700	497	225	170
14	200	187	329	445	790	726	1,570	1,600	1,400	501	222	232
15	187	230	332	450	770	672	1,350	1,390	1,180	489	218	212
16	182	278	300	454	750	640	1,260	1,250	1,020	505	212	329
17	191	338	275	441	740	595	1,180	1,190	932	441	212	282
18	184	316	262	413	698	595	1,090	*1,300	920	417	*208	230
19	228	286	250	384	658	577	1,050	1,840	926	389	205	200
20	242	268	238	370	626	546	1,080	2,640	950	378	205	190
21	250	248	248	384	586	523	1,290	2,440	998	360	202	180
22	*316	228	252	573	582	640	1,520	1,980	998	350	200	178
23	283	220	275	622	*550	760	1,530	1,700	944	343	195	174
24	248	207	335	584	541	1,120	1,460	1,470	872	326	195	172
25	207	214	306	551	523	1,300	1,310	1,360	785	318	195	168
26	204	220	295	535	514	1,260	1,220	1,320	770	340	190	164
27	195	204	268	530	505	1,230	1,110	1,270	735	340	188	164
28	184	204	272	540	497	1,500	1,060	1,270	825	285	185	182
29	180	200	332	546	-	2,010	1,080	1,450	956	306	182	176
30	174	195	1,620	595	------	1,780	1,140	1,570	790	300	180	166
31	168	-----	3,190	700	-----	1,520	-----	1,410	------	288	178	------
Total	6,179	6,187	12,279	20,249	22,138	26,172	38,998	48,330	40,231	14,315	6,794	5,581
Mean	199	206	396	653	791	844	1,300	1,559	1,341	462	219	186
Cfsm	0.809	0.837	1.61	2.65	3.22	3.43	5.28	6.34	5.45	1.88	0.890	0.756
In.	0.93	0.94	1.86	3.06	3.35	3.96	5.90	7.31	6.08	2.16	1.03	0.84
Ac-ft	12,260	12,270	24,360	40,160	43,910	51,910	77,350	95,860	79,800	28,390	13,480	11,070

Calendar year 1954: Max 3,190 Min 156 Mean 623 Cfsm 2.53 In. 34.39 Ac-ft 451,200
Water year 1954-55: Max 3,190 Min 156 Mean 678 Cfsm 2.76 In. 37.41 Ac-ft 490,800

Peak discharge (base, 3,500 cfs).--Dec. 30 (11 p.m.) 3,580 cfs (7.75 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 downstream from Whitehead Creek, 4 miles downstream from 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 (fragmentary), July 1923 to September 1955. 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.--31 years (1923-26, 1927-55), 2,647 cfs (1,916,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,500 cfs Dec. 31 (gage height, 6.02 ft); minimum, 710 cfs Sept. 12.
1911-12, 1923-55: Maximum discharge (revised), 81,800 cfs Dec. 28, 1945 (gage height, 18.8 ft, from floodmark), 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 maximum discharge for the water year 1927 has been revised to 55,100 cfs Feb. 21, 1927 (gage height, 17.0 ft), superseding figures published in WSP 1248.

Remarks.--Records excellent. No diversion; slight regulation above station by log ponds. Records of water temperature for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 694: 1925-28. WSP 814: Drainage area for site at Eula. WSP 1248: 1924, 1925(M), 1926-28, 1929(M), 1930, 1933, 1946(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 23 to Dec. 5)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
1.7	740	3.0	2,560	1.7	680	4.0	5,000
2.0	1,050	4.2	5,600	2.0	1,000	5.6	10,700
2.5	1,700			3.0	2,560		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	880	900	800	9,860	3,040	1,900	4,820	4,150	4,000	2,820	1,120	770
2	880	900	*800	5,900	2,600	2,820	4,460	3,920	3,530	2,640	1,110	760
3	880	890	800	3,980	2,330	2,280	4,050	3,680	3,700	2,410	1,070	750
4	870	880	810	3,150	2,170	1,980	3,630	3,680	4,460	2,240	1,050	750
5	870	880	800	2,680	2,150	1,770	3,300	4,180	5,690	2,150	1,020	730
6	860	880	1,240	2,320	2,140	1,660	3,150	4,910	6,580	2,140	1,010	730
7	860	860	1,260	2,100	3,150	1,680	*3,300	5,300	7,460	*2,010	989	720
8	870	870	1,070	1,960	4,460	2,010	3,680	5,840	8,260	1,990	978	720
9	860	880	984	1,960	5,180	2,170	4,350	5,450	9,020	1,990	967	720
10	860	870	962	1,830	3,920	2,210	5,480	5,330	9,100	1,910	956	720
11	890	890	910	1,720	3,280	2,840	5,120	6,050	7,780	1,870	945	720
12	995	1,040	940	1,640	2,890	2,990	5,000	6,830	6,940	1,870	934	710
13	1,100	995	1,700	*1,720	2,600	2,990	5,930	5,930	5,990	1,900	923	720
14	973	1,020	1,540	1,690	2,390	2,640	5,240	5,210	5,000	1,960	912	989
15	910	1,220	1,420	1,740	2,330	2,350	4,430	4,640	4,250	1,950	890	934
16	900	1,470	1,270	1,930	2,280	2,190	4,180	4,150	*3,680	1,930	879	1,290
17	910	1,510	1,180	1,850	2,300	2,050	4,120	4,000	3,370	1,750	879	1,280
18	890	1,370	1,090	1,740	2,170	2,010	3,880	4,220	3,340	1,630	868	1,040
19	1,140	1,260	1,060	1,630	2,010	1,960	3,680	5,900	3,340	1,520	*868	901
20	1,200	1,240	984	1,540	1,930	1,830	4,050	8,300	3,390	1,500	857	857
21	1,100	1,130	995	1,580	1,830	1,740	5,240	7,880	3,630	1,450	846	824
22	*1,290	1,050	995	2,150	1,770	2,030	6,440	6,550	3,650	1,400	835	802
23	1,270	973	1,060	2,520	1,690	2,780	5,900	5,630	3,550	1,390	824	791
24	1,160	930	1,360	2,350	1,640	4,350	5,270	4,970	3,260	1,350	824	780
25	1,060	920	1,310	2,330	1,640	4,880	4,520	4,490	2,990	1,290	813	760
26	1,030	930	1,210	2,210	1,600	4,580	4,200	4,300	2,970	1,290	813	750
27	995	920	1,070	2,140	1,560	4,380	3,750	4,120	2,800	1,360	813	750
28	951	870	1,080	2,150	*1,540	5,120	3,630	4,050	3,230	1,220	802	770
29	930	860	1,310	2,150	--	6,900	3,880	4,700	3,650	1,220	791	780
30	920	830	5,530	2,330	------	5,990	4,120	5,270	2,990	1,180	780	750
31	910	-----	10,500	2,800	-----	5,000	-----	4,670	------	1,150	780	------
Total	30,214	30,238	48,040	77,650	68,590	92,080	132,800	158,300	141,600	54,480	28,146	24,568
Mean	975	1,008	1,550	2,505	2,450	2,970	4,427	5,106	4,720	1,757	908	819
Cfsm	1.06	1.09	1.68	2.71	2.65	3.21	4.79	5.53	5.11	1.90	0.983	0.886
In.	1.22	1.22	1.93	3.13	2.76	3.71	5.35	6.37	5.70	2.19	1.13	0.99
Ac-ft	59,930	59,980	95,290	154,000	136,000	182,600	263,400	314,000	280,900	108,100	55,830	48,730

Calendar year 1954: Max 11,000 Min 800 Mean 2,577 Cfsm 2.79 In. 37.84 Ac-ft 1,865,000
Water year 1954-55: Max 10,500 Min 710 Mean 2,429 Cfsm 2.63 In. 35.70 Ac-ft 1,759,000

Peak discharge (base, 11,000 cfs).--Dec. 31 (2 a.m.) 12,500 cfs (6.02 ft).
* Discharge measurement made on this day.

Lookout Point Reservoir near Lowell, Oreg.

Location.--Lat 43°54'50", long 122°45'00", in SE¼ sec. 13, T. 19 S., R. 1 W., in elevator house at right of spillway section of dam across Middle Fork Willamette River, 1½ miles east of Lowell.

Drainage area.--991 sq mi.

Records available.--November 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Dec. 5, 1954, elevations are interpolations to nearest foot between construction joints of known elevation spaced 5 ft apart. Elevations Dec. 5, 1954, to Feb. 4, 1955, are from staff-gage readings.

Extremes.--Maximum contents during year, 448,400 acre-ft June 14 (elevation, 927.23 ft); minimum observed, 91,200 acre-ft Dec. 1 (elevation, 811 ft).
1953-55: Maximum contents, that of June 14, 1955; minimum since first filling, that of Dec. 1, 1954.

Remarks.--Reservoir is formed by earth-fill dam with concrete gate and spillway section, completed in 1954 by Corps of Engineers. Planned storage began in November 1953. Total capacity is 456,000 cfs and usable capacity is 349,400 acre-ft between elevations 819 ft (proposed lower limit of operation) and 929 ft (top of spillway gates). Reservoir used for flood control, improvement of navigation, power generation, pollution abatement, and other purposes. Daily contents computed from elevations at 8 a.m., Oct. 1 to Dec. 19, Dec. 21, 22, 29 and at 12 p.m. on all other days. Capacity table computed by Corps of Engineers. Figures shown herein are for total storage.

Contents, in acre-feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162,500	120,900	91,200	165,300	132,000	189,100	291,500	304,600	437,500	444,600	430,500	404,400
2	162,500	118,800	93,100	173,800	132,500	193,800	294,300	308,300	436,500	444,400	430,600	403,000
3	160,000	116,700	93,100	178,000	133,600	196,600	296,200	313,000	437,000	443,800	430,500	402,300
4	157,700	116,700	95,000	179,400	134,900	198,700	297,300	317,900	439,100	443,400	430,200	402,000
5	155,000	112,600	95,760	180,200	136,700	200,100	296,500	323,100	440,600	442,300	429,500	401,500
6	152,600	112,600	96,710	180,200	137,700	203,500	292,500	330,600	440,100	441,900	429,700	398,600
7	152,600	110,600	98,800	179,600	140,200	202,500	288,600	339,100	440,300	441,800	430,000	397,300
8	150,200	108,600	100,100	178,500	147,100	206,000	285,500	350,500	441,200	441,900	427,800	396,100
9	147,800	106,600	101,600	174,100	155,200	209,000	283,900	356,500	442,500	442,800	427,100	394,800
10	147,800	106,600	102,000	163,000	158,500	209,400	284,200	364,300	445,100	443,800	426,400	394,300
11	143,100	104,600	102,600	152,100	162,300	212,700	284,000	373,700	447,900	443,400	425,700	394,000
12	140,800	104,600	103,000	140,300	165,400	216,000	283,800	383,800	446,900	444,000	425,100	389,700
13	140,800	100,700	103,600	132,700	167,900	223,700	285,800	390,900	445,900	444,200	425,200	386,500
14	140,800	98,800	105,400	129,600	170,300	226,300	286,300	397,600	445,000	444,000	425,200	384,300
15	138,500	98,800	107,400	128,300	172,200	229,200	284,400	403,200	444,100	444,000	422,800	382,400
16	138,500	96,900	109,200	127,400	173,300	231,900	281,800	405,400	442,900	445,000	422,000	381,600
17	138,500	98,800	110,000	126,500	175,100	234,100	278,800	408,500	442,800	445,700	421,200	380,500
18	138,500	100,700	111,200	125,400	176,700	236,300	275,400	413,400	444,600	444,000	420,200	380,300
19	134,000	100,700	112,000	123,900	178,500	240,300	271,200	419,300	446,000	445,700	419,200	375,800
20	134,000	100,700	113,000	122,200	180,300	244,100	268,800	428,800	443,500	445,900	419,000	373,400
21	129,600	98,800	113,400	120,700	180,600	242,900	269,500	431,200	443,400	446,400	418,700	371,000
22	129,600	98,800	114,200	121,500	182,300	245,500	272,900	430,700	442,800	443,300	415,800	368,500
23	129,600	98,800	115,200	123,900	183,200	249,700	274,900	430,000	442,300	443,800	414,700	366,000
24	129,600	98,800	117,100	125,600	184,300	256,700	279,800	429,600	443,400	444,800	413,600	364,400
25	129,600	96,900	118,800	125,900	185,400	259,800	283,000	430,800	443,900	441,900	413,000	362,800
26	129,600	96,900	120,100	125,200	186,100	263,100	285,000	432,700	444,900	439,500	411,500	359,200
27	127,400	96,900	121,100	124,800	187,300	265,700	286,900	433,800	444,000	436,000	411,400	356,400
28	127,400	96,900	120,700	125,900	186,900	270,100	288,200	434,900	445,000	431,200	411,500	353,700
29	125,200	96,900	121,100	127,400	-	278,000	290,300	437,000	445,900	431,000	408,100	350,800
30	125,200	93,100	129,400	128,500	-------	284,100	296,300	438,400	445,400	431,400	407,000	345,900
31	120,900	-------	148,000	130,900	-------	287,800	-------	437,500	-------	431,900	405,700	-------

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	844	162,500	-
Oct. 31	826	120,900	-41,600
Nov. 30	812	93,100	-27,800
Dec. 31	838.1	148,000	+54,900
Calendar year 1954	-	-	+120,900
Jan. 31	830.6	130,900	-17,100
Feb. 28	853.30	186,900	+56,000
Mar. 31	885.86	287,800	+100,900
Apr. 30	888.28	296,300	+8,500
May 31	924.70	437,500	+141,200
June 30	926.54	445,400	+7,900
July 31	923.36	431,900	-13,500
Aug. 31	917.05	405,700	-26,200
Sept.30	901.86	345,900	-59,800
Water year 1954-55	-	-	+183,400

† Elevation at 8 a.m. prior to December; 12 p.m. thereafter.

Middle Fork Willamette River near Dexter, Oreg.

Location.--Lat 43°56'40", long 122°50'10", near center of sec. 5, T. 19 S., R. 1 W., on right bank three-quarters of a mile upstream from Lost Creek and 2 miles northwest of Dexter.

Drainage area.--1,001 sq mi.

Records available.--June to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from river-profile map).

Extremes.--Maximum discharge during period, 8,810 cfs June 9 (gage height, 6.12 ft); minimum, 703 cfs Aug. 29.

Remarks.--Records excellent. Flow regulated by Lookout Point Reservoir (see preceding page). Records of water temperatures for the period Aug. 24 to Sept. 30, 1955, are given in WSP 1403.

Rating table, June 10 to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)

2.1	1,190
3.0	2,160
4.0	3,690
6.0	8,450

Discharge, in cubic feet per second, June to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									-	3,330	1,220	1,460
2									-	3,070	1,230	1,480
3									-	3,120	1,220	1,450
4									-	2,960	1,290	1,460
5									-	2,950	1,270	1,460
6									-	2,250	1,280	1,470
7									-	1,960	1,300	1,440
8									-	1,960	1,300	1,450
9									-	1,560	1,390	1,460
10									8,450	1,590	1,350	1,450
11									6,500	2,100	1,350	1,450
12									6,430	1,520	1,340	1,910
13									6,380	1,860	1,330	2,460
14									5,440	2,200	1,330	2,100
15									4,930	2,000	1,330	2,060
16									4,210	1,610	1,330	1,980
17									3,730	1,470	1,330	1,900
18		†404							3,300	2,430	1,460	1,880
19									2,500	1,520	1,450	1,880
20									3,440	1,460	1,400	2,700
21									3,970	1,360	1,360	2,100
22									4,070	1,490	1,440	2,100
23									3,470	1,700	1,450	2,150
24									2,950	1,840	1,500	1,990
25									2,740	1,810	1,400	1,840
26									2,710	2,160	*1,460	1,970
27									3,420	3,400	1,370	2,320
28									2,950	3,510	1,370	2,290
29									3,370	1,820	1,390	2,500
30									3,270	1,310	1,450	3,000
31									-------	1,230	1,450	-------
Total									-	64,550	42,140	57,160
Mean									-	2,082	1,359	1,905
Ac-ft									-	128,000	83,580	113,400
Adjusted for change in contents in Lookout Point Reservoir												
Mean									-	1,862	933	901
Cfsm									-	1.86	0.932	0.900
In.									-	2.14	1.07	1.00
Ac-ft									-	114,500	57,380	53,600

* Discharge measurement made on this day.
† Result of discharge measurement.

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 upstream from mouth.

Drainage area.--186 sq mi.

Records available.--October to December 1911 (gage heights only), September 1935 to September 1955. 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.--20 years, 564 cfs (408,300 acre-ft per year).

Extremes.--Maximum discharge during year, 10,000 cfs Dec. 30 (gage height, 12.18 ft); minimum, 33 cfs Sept. 6, 7 (gage height, 1.16 ft).
1935-55: Maximum discharge, 22,500 cfs Dec. 28, 1945 (gage height, 18.0 ft, from floodmark), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum observed, 19 cfs Dec. 1, 1936.

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

Revisions (water years).--WSP 1094: 1946(M). WSP 1248: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 17 to Dec. 29, Jan. 2 to Feb. 7)

Oct. 1 to Feb. 8				Feb. 9 to Sept. 30			
1.2	45	4.0	1,030	1.1	32	3.0	565
1.5	91	6.0	2,420	1.5	91	4.0	1,080
2.0	198	8.0	4,220	2.0	202	6.5	2,820
2.5	340	9.2	5,660	2.5	360		
3.0	530						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	89	107	4,010	700	1,150	1,490	1,180	376	272	68	40
2	52	84	102	2,200	566	1,830	1,440	1,000	336	269	66	38
3	51	*79	100	1,300	490	1,080	1,330	855	372	239	65	38
4	51	74	93	890	454	765	1,200	790	472	202	65	38
5	51	74	96	740	538	592	*1,060	880	468	179	60	38
6	51	82	*346	610	598	504	972	920	468	171	59	36
7	51	81	316	530	1,490	538	1,020	890	476	154	59	36
8	52	76	229	474	2,160	845	1,050	880	480	156	56	36
9	52	93	201	490	2,240	815	1,150	745	472	166	55	37
10	66	81	171	454	1,450	820	1,360	695	440	151	53	37
11	93	76	144	*400	1,060	1,500	1,390	770	372	140	53	38
12	162	189	166	350	855	1,450	1,800	770	322	131	53	37
13	251	152	765	442	710	1,320	2,560	660	281	*125	53	41
14	133	146	566	450	601	1,030	1,940	705	248	115	51	104
15	98	198	566	474	534	830	1,480	845	222	111	*51	70
16	82	344	474	590	492	715	1,320	815	199	115	51	155
17	95	486	568	586	456	620	1,320	810	186	113	49	156
18	82	364	289	526	392	588	1,180	850	179	104	49	104
19	166	307	240	442	356	547	1,130	*910	174	98	46	74
20	224	266	211	396	332	492	1,410	940	171	95	48	62
21	221	214	186	434	*308	448	2,030	780	166	88	46	58
22	538	171	164	916	300	886	2,440	640	166	86	45	55
23	378	146	176	1,090	281	1,450	2,160	556	202	84	44	53
24	274	125	268	900	304	2,570	1,850	496	208	81	42	52
25	208	148	263	830	350	2,760	1,420	456	166	81	42	51
26	166	150	235	700	339	2,100	1,220	464	156	93	42	48
27	142	148	208	630	350	1,780	1,080	456	149	129	42	48
28	125	137	243	610	368	2,040	1,030	420	221	93	41	77
29	111	127	848	558	-	2,220	1,280	436	287	82	41	71
30	100	117	5,590	566	------	1,740	1,290	444	219	76	40	56
31	93	-----	5,480	650	-----	1,430	-----	420	------	74	40	------
Total	4,272	4,824	19,211	24,238	19,074	37,455	43,402	22,478	8,654	4,073	1,575	1,784
Mean	138	161	620	782	681	1,208	1,447	725	288	131	50.8	59.5
Cfsm	0.742	0.866	3.33	4.20	3.66	6.49	7.78	3.90	1.55	0.704	0.273	0.320
In.	0.85	0.96	3.84	4.85	3.81	7.49	8.68	4.49	1.73	0.81	0.31	0.36
Ac-ft	8,470	9,570	38,100	48,080	37,830	74,290	86,090	44,580	17,160	8,080	3,120	3,540

Calendar year 1954: Max 5,590 Min 51 Mean 448 Cfsm 2.41 In. 32.67 Ac-ft 324,200
Water year 1954-55: Max 5,590 Min 36 Mean 523 Cfsm 2.81 In. 38.18 Ac-ft 378,900

Peak discharge (base 3,100 cfs).--Dec. 30 (8:30 p.m.) 10,000 cfs (12.18 ft); Feb. 8 (7:30 p.m.) 3,180 cfs (6.89 ft).
* Discharge measurement made on this day.

Middle Fork Willamette River at Jasper, Oreg.

Location.--Lat 43°59'50", long 122°54'20", in SW¼SW¼ sec. 14, T. 18 S., R. 2 W., on right bank 25 ft downstream from highway bridge at Jasper, 650 ft downstream from Hills Creek, and 7½ miles southeast of Springfield.
Drainage area.--1,340 sq mi.
Records available.--September 1905 to February 1912, July 1913 to March 1917, October 1952 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 513.45 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. September 1905 to February 1912 and July 1913 to March 1917 staff gages at approximately same site at different datum. Oct. 22, 1952, to Oct. 1, 1953, wire-weight gage at site 25 ft upstream at same datum.
Average discharge.--12 years (1905-11, 1913-16, 1952-55), 3,876 cfs (2,806,000 acre-ft per year).
Extremes.--Maximum discharge during year, 17,900 cfs Dec. 30 (gage height, 8.19 ft); minimum, 366 cfs Dec. 5.
1905-12, 1913-17, 1952-55: Maximum discharge, 94,000 cfs Nov. 23, 1909 (gage height, 17.4 ft, datum then in use, from graph based on gage readings), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum, that of Dec. 5, 1954.
Remarks.--Records excellent. Flow regulated by Lookout Point Reservoir (see p. 109). Records of water temperatures for the water year 1955 are given in WSP 1403.
Revisions (water years).--WSP 1288: Drainage area, 1907-8, 1910-12, 1914-16.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
1.4	525	4.0	4,200	2.2	1,240	5.0	6,500
2.0	1,050	5.0	6,500	3.0	2,240	7.0	12,900
3.0	2,350	7.0	12,900	4.0	4,100		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,880	2,080	1,220	9,370	3,460	4,220	6,250	3,400	5,380	3,920	1,320	1,570
2	1,870	2,050	632	6,550	3,540	5,650	6,100	3,040	4,650	3,660	1,340	1,570
3	1,850	2,020	*922	5,280	3,060	3,840	5,980	2,850	4,520	3,660	1,320	1,510
4	1,850	1,990	764	4,120	2,830	3,040	5,780	2,900	4,480	3,500	1,400	1,570
5	1,850	1,940	543	4,520	2,350	2,610	*6,350	2,880	6,020	3,400	1,390	1,540
6	1,840	1,970	1,750	4,260	2,480	2,350	7,090	2,660	7,000	2,720	1,390	1,560
7	1,840	1,950	1,630	3,940	3,740	2,290	7,090	2,670	8,140	2,240	1,430	1,530
8	1,840	1,920	1,230	3,860	4,820	2,660	7,090	2,640	8,290	2,230	1,400	1,520
9	1,830	1,940	1,090	6,280	5,200	2,620	7,210	2,420	9,100	1,860	1,510	1,540
10	1,840	1,920	1,120	8,560	3,960	2,590	7,570	2,370	9,310	1,820	1,480	1,560
11	1,900	1,910	1,380	*8,230	3,360	3,560	7,630	2,760	7,360	2,270	1,480	1,540
12	2,040	2,060	1,690	8,440	2,980	3,620	8,680	2,960	7,060	1,800	1,510	1,920
13	2,180	2,050	2,980	7,120	2,700	3,480	10,450	2,920	7,030	*1,930	1,470	2,590
14	1,990	2,050	2,220	4,500	2,370	3,020	9,130	3,820	6,220	2,420	1,460	2,370
15	1,920	2,180	2,020	3,880	2,160	2,660	8,290	4,040	5,650	2,230	*1,430	2,260
16	1,900	2,480	1,670	4,220	2,110	2,420	8,140	4,000	4,720	1,830	1,450	2,240
17	1,900	2,400	1,670	4,200	2,070	2,210	8,290	4,040	4,300	1,620	1,460	2,210
18	1,880	1,350	1,540	4,040	2,000	2,110	8,290	3,180	3,880	2,620	1,630	2,090
19	2,010	1,410	1,470	3,840	1,930	2,060	8,350	*4,480	3,060	1,770	1,590	2,000
20	2,120	2,160	1,350	3,740	1,880	1,860	9,010	5,150	3,840	1,620	1,540	2,830
21	2,120	2,160	1,280	3,680	*1,850	1,760	10,000	7,510	4,400	1,460	1,500	2,270
22	2,650	1,980	1,150	3,760	1,820	2,450	10,300	8,440	4,500	1,560	1,580	2,240
23	2,410	1,700	1,020	3,960	1,800	3,880	8,470	6,900	4,100	1,750	1,620	2,290
24	2,350	1,810	1,320	3,720	1,830	5,850	6,800	5,720	*3,580	1,950	1,640	2,140
25	2,080	2,020	1,380	4,120	1,950	7,510	5,900	5,180	3,140	1,970	1,540	1,930
26	2,020	2,010	1,350	4,000	1,950	6,920	5,600	4,550	3,140	2,340	1,570	1,970
27	1,770	1,970	1,270	3,880	1,970	6,700	5,500	4,080	3,760	3,800	1,520	2,450
28	1,500	1,950	1,920	3,440	2,090	6,980	5,280	4,360	3,520	3,960	1,510	2,530
29	1,830	1,670	3,110	2,880	-	7,510	5,180	4,460	3,920	2,100	1,470	2,740
30	2,110	1,740	9,920	2,690	-------	6,780	3,680	5,200	3,820	1,480	1,570	3,240
31	2,100	-------	12,600	3,020	-------	6,200	-------	6,050	-------	1,350	1,570	-------
Total	61,270	58,840	65,211	148,100	74,260	121,410	219,480	127,630	157,890	72,840	46,090	61,320
Mean	1,976	1,961	2,104	4,777	2,652	3,916	7,316	4,117	5,263	2,350	1,487	2,044
Ac-ft	121,500	116,700	129,300	293,800	147,300	240,800	435,300	253,200	313,200	144,500	91,420	121,600

Adjusted for change in contents in Lookout Point Reservoir

Mean	1,299	1,494	2,996	4,500	3,661	5,557	7,458	6,414	5,396	2,131	1,061	1,039
Cfsm	0.969	1.11	2.24	3.36	2.73	4.15	5.57	4.79	4.03	1.59	0.792	0.775
In.	1.12	1.24	2.58	3.87	2.84	4.78	6.21	5.52	4.49	1.83	0.91	0.86
Ac-ft	79,900	88,900	184,200	276,700	203,300	341,700	443,800	394,400	321,100	131,000	65,220	61,800

Observed

Calendar year 1954: Max	19,300	Min	543	Mean	3,614	Ac-ft 2,616,000
Water year 1954-55: Max	12,600	Min	543	Mean	3,327	Ac-ft 2,409,000

Adjusted

Calendar year 1954: Mean	3,781	Cfsm	2.82	In.	38.30	Ac-ft	2,737,000
Water year 1954-55: Mean	3,580	Cfsm	2.67	In.	36.25	Ac-ft	2,592,000

* 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 1955.

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.--20 years, 205 cfs (148,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,110 cfs Dec. 30 (gage height, 5.97 ft); minimum, 15 cfs Sept. 5-7.
1935-55: 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 except those for periods of shifting control or backwater from beaver dam, which are fair. No diversion above station; millpond 3 miles above station may cause slight regulation at times.

Rating tables, water year 1954-55, except period of shifting control or backwater from beaver dam (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 5				Dec. 6 to Sept. 30			
1.2	18	1.7	73	1.1	12	2.4	225
1.3	26	2.0	135	1.2	16	3.0	445
1.5	45	2.3	220	1.4	28	4.0	950
				1.6	48	5.0	1,530
				1.9	98		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	23	48	1,370	269	664	590	337	88	55	30	17
2	23	22	45	746	231	912	548	297	*83	54	28	17
3	23	21	45	468	204	463	486	258	94	49	27	16
4	23	19	43	349	190	311	421	240	100	47	25	16
5	23	18	87	304	198	243	369	240	94	46	24	16
6	23	23	508	258	201	204	337	246	92	48	23	*15
7	23	21	272	222	243	201	322	237	90	45	23	16
8	24	22	175	204	435	237	308	231	87	51	22	18
9	23	*31	175	213	517	228	318	198	85	54	22	17
10	24	25	148	198	365	228	341	185	77	48	21	17
11	31	26	116	178	283	357	389	192	70	45	21	18
12	46	64	166	160	234	421	878	185	65	42	22	18
13	61	44	*517	182	198	421	1,040	168	62	41	21	23
14	36	62	325	172	172	*369	670	201	59	39	21	45
15	31	163	*258	237	158	308	508	255	58	38	21	31
16	29	220	201	393	148	269	504	213	55	38	21	77
17	31	193	165	345	135	234	512	201	54	36	20	51
18	30	150	140	280	120	216	*425	190	54	*33	20	35
19	109	140	125	222	113	207	405	201	52	32	20	28
20	78	121	109	192	107	188	640	198	49	32	19	25
21	82	99	98	225	102	175	812	172	47	32	19	23
22	119	84	90	417	100	451	741	150	48	31	19	22
23	73	72	94	393	94	884	600	135	58	31	18	22
24	54	64	158	337	105	1,050	490	130	54	31	18	20
25	44	68	160	*300	109	752	425	122	48	32	19	21
26	37	64	140	252	109	580	393	118	47	38	18	20
27	33	60	128	225	113	512	353	107	46	44	18	c20
28	30	54	140	207	122	615	357	100	59	34	18	c24
29	27	52	213	188	-	774	413	100	62	32	17	c24
30	25	49	1,200	195	------	675	377	100	54	31	18	c20
31	24	------	*1,360	228	------	571	------	96	------	31	19	------
Total	1,263	2,074	7,449	9,660	5,375	13,720	14,972	5,803	1,991	1,240	652	732
Mean	40.7	69.1	240	312	192	443	499	187	66.4	40.0	21.0	24.4
Cfsm	0.590	1.00	3.48	4.52	2.78	6.42	7.23	2.71	0.962	0.580	0.304	0.354
In.	0.68	1.12	4.01	5.21	2.90	7.39	8.07	3.13	1.07	0.67	0.35	0.39
Ac-ft	2,510	4,110	14,770	19,160	10,660	27,210	29,700	11,510	3,950	2,460	1,290	1,450

Calendar year 1954: Max 1,950 Min 18 Mean 194 Cfsm 2.81 In. 38.08 Ac-ft 140,200
Water year 1954-55: Max 1,370 Min 15 Mean 178 Cfsm 2.58 In. 34.99 Ac-ft 128,800

Peak discharge (base, 1,900 cfs).--Dec. 30 (10 p.m.) 2,110 cfs (5.97 ft).
* Discharge measurement made on this day.
c Backwater from beaver dam.
Note.--Shifting-control method used Oct. 22 to Nov. 14.

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 1955.
Gage.--Water-stage recorder. Datum of gage is at mean sea level (surveys by Corps of Engineers).
Extremes.--Maximum contents during year, 32,340 acre-ft May 23 (elevation, 790.48 ft); minimum, 2,780 acre-ft Dec. 14 (elevation, 749.66 ft).
1942-55: 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, 32,940 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).--WSP 1218: 1950.

Contents, in acre-feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,440	2,870	2,890	3,960	3,080	10,780	19,880	27,340	31,950	31,470	30,710	18,530
2	10,960	2,860	2,900	3,030	3,240	12,260	19,490	27,400	31,920	31,460	30,590	17,220
3	10,500	2,860	2,910	3,100	3,590	11,810	19,510	27,650	32,030	31,460	30,410	15,670
4	8,830	2,860	2,920	2,990	3,930	11,600	19,800	28,050	32,080	31,460	30,240	14,090
5	9,590	2,860	3,010	2,910	4,250	11,680	20,190	28,460	32,120	31,450	30,070	12,560
6	9,120	2,880	3,080	2,930	4,520	11,970	20,600	28,860	32,140	31,450	29,850	11,130
7	8,640	2,880	2,870	2,940	4,770	12,390	20,920	29,250	32,160	31,450	29,590	9,870
8	8,200	2,880	2,880	2,920	5,060	12,690	21,170	29,610	32,180	31,470	29,320	8,750
9	7,740	2,930	2,900	2,990	5,250	12,880	21,470	29,930	32,190	31,480	29,050	7,640
10	7,280	2,920	2,910	2,920	5,540	13,070	21,680	30,240	32,160	31,490	28,770	6,720
11	6,840	2,910	2,910	2,920	5,870	13,580	21,980	30,530	32,130	31,490	28,500	5,940
12	6,440	2,900	2,990	2,960	6,110	13,920	22,860	30,850	32,100	31,480	28,230	5,380
13	6,040	2,890	3,030	2,930	6,330	14,090	23,320	31,080	32,050	31,460	27,960	5,170
14	5,600	2,910	2,870	2,900	6,560	14,130	22,940	31,230	31,990	31,430	27,680	5,100
15	5,270	2,960	2,920	3,030	6,820	14,360	23,080	31,200	31,950	31,400	27,350	5,000
16	5,010	2,980	2,890	3,120	7,080	14,820	23,220	31,170	31,920	31,370	26,930	5,010
17	4,750	2,910	2,880	2,950	7,300	15,160	23,270	31,220	31,900	31,340	26,510	4,960
18	4,490	2,880	2,890	2,950	7,480	15,450	23,500	31,430	31,870	31,300	26,060	4,880
19	4,440	2,870	2,900	2,970	7,630	15,680	23,870	31,710	31,830	31,250	25,630	4,810
20	4,290	2,860	2,870	2,900	7,770	15,880	24,620	31,990	31,790	31,210	25,200	4,770
21	4,160	2,890	2,870	2,940	7,890	16,130	25,070	32,180	31,740	31,150	24,780	4,720
22	4,200	2,940	2,880	2,990	8,020	17,520	24,920	32,300	31,700	31,110	24,360	4,670
23	4,110	2,960	2,910	2,960	8,130	19,970	25,030	32,310	31,670	31,070	23,940	4,620
24	3,970	2,970	2,960	2,990	8,270	21,620	25,320	32,270	31,650	31,030	23,530	4,560
25	3,800	2,970	2,970	2,930	8,430	21,740	25,640	32,190	31,610	30,980	23,080	4,500
26	3,620	2,940	2,910	2,900	8,590	21,360	25,890	32,060	31,560	30,960	22,680	4,450
27	3,450	2,900	2,910	2,910	8,780	20,800	25,990	31,970	31,530	30,950	22,260	4,400
28	3,270	2,880	3,000	2,940	9,000	20,560	26,380	31,910	31,530	30,920	21,840	4,360
29	3,060	2,870	3,050	2,920	-	20,690	26,990	31,940	31,530	30,870	21,420	4,300
30	2,920	2,880	3,720	2,920	-------	20,580	27,270	31,950	31,490	30,820	20,630	4,250
31	2,890	-------	3,790	3,020	-------	20,160	-------	31,960	-------	30,770	19,580	-------

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	768.23	11,900	-
Oct. 31	750.03	2,890	-9,010
Nov. 30	750.01	2,880	-10
Dec. 31	752.88	3,790	+910
Calendar year 1954	-	-	+900
Jan. 31	750.48	3,020	-770
Feb. 28	763.64	9,000	+5,980
Mar. 31	778.68	20,160	+11,160
Apr. 30	785.89	27,270	+7,110
May 31	790.15	31,960	+4,690
June 30	789.74	31,490	-470
July 31	789.10	30,770	-720
Aug. 31	778.04	19,580	-11,190
Sept.30	754.15	4,250	-15,330
Water year 1954-55	-	-	-7,650

* 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 1955. 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.--16 years, 282 cfs, adjusted for storage (204,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,760 cfs Jan. 1 (gage height, 6.94 ft); minimum, 32 cfs Nov. 4-7 (gage height, 2.66 ft).
1939-55: Maximum discharge recorded, 3,340 cfs Jan. 4, 1943 (gage height, 10.06 ft, site and datum then in use); practically no flow July 5-7, 1945, Aug. 24, 1947.

Remarks.--Records excellent. No diversion above station. Flow regulated since Oct. 31, 1942, by Cottage Grove Reservoir (see preceding page).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.6	27	4.0	295
2.8	43	5.0	700
3.1	74	7.0	1,800
3.5	144		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	246	46	48	1,760	344	77	1,000	425	100	70	49	561
2	246	41	48	1,580	219	644	996	369	*92	60	77	688
3	246	37	47	716	99	960	672	203	84	50	95	820
4	242	33	47	548	76	573	433	106	88	50	95	830
5	239	32	58	529	94	330	312	83	88	50	95	810
6	242	32	601	373	121	152	253	84	88	50	107	*790
7	246	33	480	323	171	76	253	84	88	50	138	673
8	250	33	219	306	433	158	253	84	88	50	138	596
9	246	*40	204	284	598	195	253	70	88	50	138	583
10	239	48	179	320	354	195	309	67	88	50	138	489
11	239	47	144	239	219	195	385	67	88	49	138	401
12	242	85	144	192	195	429	528	67	88	49	138	290
13	246	73	624	260	156	525	1,270	68	88	49	138	130
14	246	80	*527	250	112	*521	1,130	213	88	49	138	80
15	182	136	326	271	86	301	660	337	83	49	182	80
16	144	232	278	540	74	142	660	260	68	49	216	80
17	144	253	213	632	74	140	660	205	68	49	216	80
18	144	187	163	435	74	138	*485	110	69	*49	216	78
19	142	156	142	326	74	138	377	80	69	49	216	54
20	140	138	142	323	74	138	536	78	68	49	216	48
21	138	95	109	323	74	103	945	84	69	50	213	48
22	138	68	94	524	74	102	1,110	102	70	50	213	48
23	140	68	103	553	74	91	786	131	70	50	213	48
24	138	68	168	449	74	617	538	168	70	50	213	48
25	138	77	210	*445	74	1,020	445	168	70	50	210	48
26	136	84	210	354	74	1,010	445	168	70	50	210	48
27	136	83	153	302	74	1,010	445	168	70	50	210	48
28	134	67	123	253	74	1,010	323	121	70	50	210	48
29	131	55	243	253	-	1,010	256	100	70	50	210	48
30	97	48	1,210	253	-------	1,010	374	100	70	50	424	48
31	55	-------	1,750	253	-------	1,000	-------	100	-------	49	565	-------
Total	5,692	2,475	9,007	14,169	4,239	14,010	17,092	4,470	2,368	1,569	5,775	8,641
Mean	184	82.5	291	457	151	452	570	144	78.9	50.6	186	288
Ac-ft	11,290	4,910	17,870	28,100	8,410	27,790	33,900	8,870	4,700	3,110	11,450	17,140

Adjusted for change in contents in Cottage Grove Reservoir

Mean	37.1	82.3	305	444	259	633	689	221	71.1	38.9	4.23	30.4
Cfsm	0.357	0.791	2.93	4.27	2.49	6.09	6.62	2.12	0.684	0.374	0.041	0.292
In.	0.41	0.88	3.39	4.93	2.59	7.02	7.39	2.44	0.76	0.43	0.05	0.33
Ac-ft	2,280	4,900	18,780	27,330	14,390	38,950	41,010	13,560	4,230	2,390	260	1,810

Observed

Calendar year 1954: Max 2,410 Min 32 Mean 237 Ac-ft 171,300
Water year 1954-55: Max 1,760 Min 32 Mean 245 Ac-ft 177,500

Adjusted

Calendar year 1954: Mean 238 Cfsm 2.29 In. 31.04 Ac-ft 172,200
Water year 1954-55: Mean 235 Cfsm 2.26 In. 30.63 Ac-ft 169,800

* 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 sec. 24, T. 21 S., R. 2 W., on right bank half a mile upstream from Pitcher Creek and 1½ miles northwest of Dorena.

Drainage area.--211 sq mi.

Records available.--September 1935 to September 1955. 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 at site 450 ft upstream at datum 1 ft higher.

Average discharge.--20 years, 589 cfs (426,400 acre-ft per year).

Extremes.--Maximum discharge during year, 7,100 cfs Dec. 30 (gage height, 9.47 ft); minimum, 21 cfs Sept. 6, 7.
1935-55: Maximum discharge, 19,600 cfs Dec. 28, 1945 (gage height, 14.35 ft), from rating curve extended above 9,300 cfs by logarithmic plotting; minimum, 10 cfs Sept. 24, 25, 1951.

Remarks.--Records excellent. No diversion above station; slight regulation at times by log ponds.

Cooperation.--Gage height record collected in cooperation with U. S. Weather Bureau and Corps of Engineers.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.6	22	4.0	520
1.9	45	5.0	1,080
2.2	71	6.0	1,880
2.5	110	7.0	3,000
3.0	195	8.5	5,280
3.5	330		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	46	70	4,190	972	730	1,510	1,170	427	236	53	28
2	30	43	69	2,000	726	1,410	1,330	1,010	*378	218	52	28
3	30	41	69	1,120	600	792	1,160	858	455	200	51	28
4	30	41	66	792	520	545	1,030	852	670	178	52	27
5	29	41	75	635	580	415	936	1,080	695	158	53	26
6	29	43	724	530	660	364	918	1,240	685	160	56	24
7	29	43	447	447	1,160	460	1,070	1,210	690	145	48	22
8	30	42	267	407	1,800	960	1,160	1,210	705	142	42	*22
9	30	52	220	431	1,960	876	1,310	924	685	143	41	26
10	31	*49	197	431	1,210	768	1,430	876	595	136	40	27
11	33	43	174	384	906	1,210	1,200	1,070	455	124	38	27
12	48	114	195	330	715	1,210	1,430	1,060	392	112	37	26
13	116	109	780	395	615	1,100	2,390	786	324	107	36	27
14	67	93	570	431	525	852	1,610	744	267	97	35	63
15	48	218	*463	467	475	*675	1,270	876	238	93	34	58
16	42	388	364	630	443	595	1,200	864	209	92	34	162
17	41	342	291	535	431	520	1,280	954	189	87	34	151
18	40	256	262	471	370	516	1,090	1,080	191	*79	33	82
19	148	256	240	392	330	506	*1,060	1,460	180	78	32	55
20	170	256	213	336	300	439	1,370	1,510	178	75	31	45
21	109	184	195	360	279	392	2,150	1,090	174	70	30	41
22	240	143	180	1,330	265	628	2,500	846	170	69	29	37
23	195	118	189	1,450	246	1,340	1,960	720	195	67	28	35
24	148	100	324	1,130	248	2,480	1,630	645	200	63	29	34
25	109	104	303	1,080	265	2,280	1,230	600	161	61	33	34
26	84	120	251	*852	262	1,900	1,070	580	172	68	33	30
27	71	100	213	810	262	1,870	918	540	154	83	32	30
28	62	91	216	822	262	2,380	912	516	213	68	31	41
29	55	82	436	720	-	2,680	1,140	605	367	62	29	41
30	51	75	3,480	858	------	1,960	1,240	625	262	62	29	34
31	49	-----	4,480	990	------	1,550	-----	502	------	58	29	------
Total	2,225	3,633	16,023	25,756	17,387	34,403	40,504	28,103	10,676	3,391	1,164	1,311
Mean	71.8	121	517	831	621	1,110	1,350	907	356	109	37.5	43.7
Cfsm	0.340	0.573	2.45	3.94	2.94	5.26	6.40	4.30	1.69	0.517	0.178	0.207
In.	0.39	0.64	2.82	4.54	3.06	6.06	7.14	4.95	1.88	0.60	0.21	0.23
Ac-ft	4,410	7,210	31,780	51,090	34,490	68,240	80,340	55,740	21,180	6,730	2,310	2,600

Calendar year 1954: Max 4,790 Min 29 Mean 468 Cfsm 2.22 In. 30.07 Ac-ft 338,700
Water year 1954-55: Max 4,480 Min 22 Mean 506 Cfsm 2.40 In. 32.52 Ac-ft 366,100

Peak discharge (base, 4,800 cfs).--Dec. 30 (10:30 p.m.) 7,100 cfs (9.47 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 on Row River, 5 miles east of Cottage Grove.

Drainage area.--265 sq mi.

Records available.--October 1949 to September 1955.

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

Extremes.--Maximum contents during year, 75,800 acre-ft May 27 (elevation, 834.09 ft); minimum, 6,790 acre-ft Nov. 23 (elevation, 770.13 ft).
1949-55: Maximum contents, 76,210 acre-ft May 27, 1953 (elevation, 834.31 ft); minimum since first filling, 5,660 acre-ft Dec. 20, 1951 (elevation, 767.75 ft).

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, 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, in acre-feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20,580	7,860	7,280	17,760	7,470	22,720	46,060	61,640	74,200	72,170	66,970	15,160
2	20,110	7,440	7,260	14,640	7,380	25,760	43,540	61,740	73,460	72,320	65,550	14,240
3	19,620	7,220	7,230	10,050	7,890	26,580	43,210	62,050	73,020	72,320	64,140	13,510
4	19,150	7,090	7,190	7,460	8,690	26,700	43,930	62,860	72,960	72,210	62,610	12,780
5	18,670	7,030	7,280	7,100	9,630	26,820	44,820	64,280	72,940	72,240	60,990	12,060
6	18,200	7,010	7,560	7,010	10,690	27,300	46,170	65,760	72,910	72,320	59,290	11,330
7	17,750	6,970	7,100	7,130	11,930	28,080	47,270	66,070	72,870	72,370	57,480	10,590
8	17,300	6,970	7,040	7,260	13,000	28,910	47,890	66,400	72,870	72,460	55,720	9,970
9	16,860	7,010	7,060	7,200	13,160	29,350	48,720	66,090	72,810	72,540	53,970	9,550
10	16,420	7,040	7,200	7,130	12,960	30,100	48,810	66,260	72,540	72,560	52,210	9,310
11	16,010	7,080	7,230	7,150	13,380	31,310	49,120	67,190	72,390	72,570	50,380	9,140
12	15,690	7,240	7,170	7,030	13,960	31,790	50,870	68,020	72,460	72,560	48,540	8,970
13	15,460	7,230	7,230	7,130	14,670	31,760	53,160	68,410	72,410	72,520	46,720	8,820
14	15,120	7,160	7,040	7,270	15,330	32,040	53,000	68,410	72,410	72,460	44,910	8,760
15	14,750	7,240	7,040	7,390	15,950	32,770	52,800	68,650	72,500	72,430	43,180	8,690
16	14,390	7,160	7,030	7,480	16,520	33,510	52,740	69,540	72,520	72,390	41,420	8,850
17	14,010	7,140	7,030	7,230	17,040	34,070	52,780	70,780	72,500	72,350	39,710	8,980
18	13,620	6,990	7,030	7,130	17,480	34,560	53,160	71,710	72,480	72,280	37,980	8,960
19	13,560	7,030	6,950	7,070	17,910	35,030	53,950	72,780	72,450	72,190	36,380	8,860
20	13,490	7,150	7,000	7,060	18,250	35,620	55,040	73,240	72,390	72,100	34,660	8,740
21	13,360	7,060	7,080	7,360	18,530	36,210	56,130	72,800	72,320	71,910	32,980	8,600
22	13,500	6,870	7,110	8,030	18,820	37,520	56,830	72,500	72,260	71,620	31,340	8,450
23	13,500	6,860	7,210	7,320	19,040	40,730	56,600	72,910	72,260	71,350	29,620	8,300
24	13,360	6,920	7,070	7,160	19,300	44,790	56,910	73,830	72,300	71,070	27,850	8,150
25	13,150	7,020	7,080	7,170	19,630	47,390	57,300	74,710	72,240	70,770	26,100	7,980
26	12,690	7,140	7,090	7,050	19,930	49,030	57,870	75,520	72,190	70,710	24,290	7,820
27	11,920	7,230	7,040	7,280	20,250	50,380	58,310	75,760	72,130	70,680	22,470	7,670
28	11,080	7,280	7,060	7,490	20,620	51,560	59,270	75,700	72,320	70,800	20,680	7,540
29	10,240	7,300	7,340	7,480	-	51,960	60,260	75,570	72,370	70,330	18,970	7,390
30	9,410	7,300	10,740	7,380	-------	50,520	61,080	75,330	72,170	69,540	17,560	7,240
31	8,580	-------	14,690	7,470	-------	48,220	-------	74,880	-------	68,280	16,340	-------

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	791.99	21,070	-
Oct. 31.....	775.50	8,560	-12,510
Nov. 30.....	771.13	7,300	-1,260
Dec. 31.....	783.54	14,690	+7,390
Calendar year 1954.....	-	-	+7,470
Jan. 31.....	771.47	7,470	-7,220
Feb. 28.....	791.45	20,620	+13,150
Mar. 31.....	817.06	48,220	+27,600
Apr. 30.....	825.73	61,080	+12,860
May 31.....	833.60	74,880	+13,800
June 30.....	832.14	72,170	-2,710
July 31.....	829.98	68,280	-3,890
Aug. 31.....	785.91	16,340	-51,940
Sept.30.....	771.02	7,240	-9,100
Water year 1954-55.....	-	-	-13,830

† Elevation at 12 p.m.

Row River near Cottage Grove, Oreg.

Location.--Lat 43°47'40", long 122°59'40", 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 1955. 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.--16 years, 749 cfs, adjusted for storage (542,300 acre-ft per year).

Extremes.--Maximum discharge during year, 4,700 cfs Jan. 2 (gage height, 8.00 ft); minimum, 52 cfs Nov. 8 (gage height, 1.65 ft).
1939-55: 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 good. No diversion above station. Flow regulated since October 1949 by Dorena Reservoir (see preceding page).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.6	45	3.0	495
1.8	80	4.0	1,070
2.2	185	6.0	2,650
2.5	290	8.0	4,700

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	290	426	110	3,630	1,200	227	3,170	1,210	760	266	744	650
2	286	258	110	4,230	924	573	3,110	1,210	*760	216	744	495
3	286	158	112	4,040	502	750	1,720	878	760	216	738	405
4	286	110	112	2,480	286	744	924	590	755	216	766	401
5	283	89	114	1,070	290	525	706	530	755	155	864	397
6	283	76	839	788	294	281	436	627	755	141	888	*393
7	280	76	951	540	724	206	682	1,220	755	141	937	389
8	276	62	414	490	1,560	739	1,050	1,230	755	141	930	322
9	276	54	318	610	2,330	834	1,140	1,230	755	138	930	244
10	276	*54	220	610	1,660	585	1,690	917	755	138	924	147
11	276	54	220	486	930	876	1,410	728	555	138	958	114
12	276	89	262	486	580	1,360	1,150	733	381	138	993	114
13	272	152	1,020	486	373	1,520	1,970	733	381	135	986	114
14	269	176	*870	490	308	1,050	2,350	1,060	276	135	979	114
15	269	255	689	540	255	*538	1,900	1,080	224	124	958	114
16	266	540	550	804	255	405	1,710	700	224	120	944	114
17	266	505	414	852	255	405	1,710	550	224	120	937	112
18	262	454	365	678	241	405	1,300	788	224	*122	930	112
19	262	357	365	570	188	405	*1,040	1,180	224	124	924	112
20	262	297	276	454	192	280	1,450	1,500	224	124	918	112
21	262	297	224	454	196	216	2,390	1,500	224	149	900	110
22	262	297	224	1,520	196	220	2,910	1,130	224	210	888	110
23	262	164	227	2,190	196	224	2,730	614	227	210	924	110
24	262	110	542	1,550	196	957	1,990	283	224	210	958	110
25	258	110	450	1,340	199	1,610	1,480	227	224	210	937	110
26	371	110	369	1,110	202	1,620	1,160	227	224	133	965	110
27	575	110	337	*840	202	1,630	1,010	448	220	110	979	110
28	560	110	337	846	206	2,330	760	565	224	110	951	110
29	545	110	513	852	-	3,050	1,070	700	351	193	930	110
30	535	110	2,400	1,010	-------	3,220	1,210	766	393	436	777	110
31	520	-------	3,420	1,130	-------	3,190	-------	780	-------	645	662	-------
Total	9,914	5,770	17,374	37,176	14,940	30,975	47,328	25,914	13,037	5,664	27,863	6,075
Mean	320	192	560	1,199	534	999	1,578	836	435	183	899	202
Ac-ft	19,660	11,440	34,460	73,740	29,630	61,440	93,870	51,400	25,860	11,230	55,270	12,050

Adjusted for change in contents in Dorena Reservoir

Mean	116	171	681	1,082	770	1,448	1,793	1,060	389	119	54.2	49.6
Cfsm	0.430	0.633	2.52	4.01	2.85	5.36	6.64	3.93	1.44	0.441	0.201	0.184
In.	0.50	0.71	2.91	4.62	2.97	6.18	7.41	4.53	1.61	0.51	0.23	0.20
Ac-ft	7,150	10,180	41,850	66,520	42,780	89,040	106,700	65,200	23,150	7,340	3,330	2,950

Observed

Calendar year 1954: Max 4,930 Min 54 Mean 582 Ac-ft 421,300
Water year 1954-55: Max 4,230 Min 54 Mean 663 Ac-ft 480,000

Adjusted

Calendar year 1954: Mean 592 Cfsm 2.19 In. 29.78 Ac-ft 428,800
Water year 1954-55: Mean 644 Cfsm 2.39 In. 32.38 Ac-ft 466,200

* Discharge measurement made on this day.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 676.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--9 years, 257 cfs (186,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,610 cfs Dec. 30 (gage height, 5.69 ft); minimum, 6.6 cfs Sept. 5.
1946-55: 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30		Dec. 31 to Sept. 30			
1.1	10	1.0	5.4	1.6	64
1.2	15	1.1	8.9	1.9	133
1.3	22	1.2	14	2.4	320
1.4	33	1.3	22	3.0	635
Note.--Same as following table above 1.4 ft.		1.4	33	5.0	2,060

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	21	33	1,640	298	642	635	385	80	41	16	10
2	12	19	31	885	263	1,180	618	316	*70	40	15	9.8
3	12	18	30	520	227	591	542	263	76	37	14	9.3
4	12	18	29	365	212	365	486	227	96	33	14	9.3
5	13	18	39	320	208	263	415	235	98	32	14	9.3
6	13	20	518	298	205	201	360	247	96	33	14	8.9
7	14	21	330	259	235	183	345	235	98	32	14	8.5
8	14	19	173	224	434	284	316	231	98	33	13	*8.9
9	16	26	128	224	647	271	316	183	93	36	12	8.5
10	16	*25	110	208	430	239	340	163	86	33	12	8.9
11	18	21	89	183	320	365	370	177	74	30	12	8.9
12	27	46	89	163	259	465	642	177	64	29	12	8.9
13	50	49	450	180	205	542	1,190	151	59	26	12	9.8
14	33	46	*355	180	173	*455	794	170	52	24	12	22
15	25	107	263	205	154	365	596	271	47	22	12	23
16	22	216	205	390	142	306	536	251	43	23	12	49
17	22	170	157	415	133	251	569	235	39	22	11	49
18	21	142	128	335	120	224	476	224	36	*21	11	32
19	66	130	112	263	110	205	430	239	34	20	11	22
20	86	133	100	208	102	183	743	239	33	19	10	18
21	57	98	89	224	98	160	1,120	194	32	19	9.3	16
22	130	76	80	492	93	378	992	157	32	19	9.3	15
23	91	61	89	525	91	1,020	768	130	41	18	9.3	14
24	62	50	176	410	98	1,220	596	123	43	18	9.3	14
25	46	50	208	345	117	866	481	112	36	18	9.8	14
26	37	50	166	*271	117	671	425	105	33	20	9.8	14
27	32	46	142	231	128	574	395	98	33	26	9.8	14
28	29	41	139	224	136	653	380	91	41	22	9.8	16
29	26	37	227	194	-	820	465	91	57	19	9.8	16
30	23	36	1,310	201	------	737	445	93	44	18	10	15
31	21	-----	1,680	224	-----	635	-----	89	------	17	10	------
Total	1,058	1,810	7,675	10,806	5,755	15,314	16,786	5,902	1,764	800	359.2	482.0
Mean	34.1	60.3	248	349	206	494	560	190	58.8	25.8	11.6	16.1
Cfsm	0.355	0.628	2.58	3.64	2.15	5.15	5.83	1.98	0.612	0.269	0.121	0.168
In.	0.41	0.70	2.97	4.19	2.23	5.93	6.50	2.29	0.68	0.31	0.14	0.19
Ac-ft	2,100	3,590	15,220	21,430	11,410	30,370	33,290	11,710	3,500	1,590	712	956

Calendar year 1954: Max 2,770 Min 12 Mean 192 Cfsm 2.00 In. 27.18 Ac-ft 139,200
Water year 1954-55: Max 1,680 Min 8.5 Mean 188 Cfsm 1.96 In. 26.54 Ac-ft 135,900

Peak discharge (base, 2,500 cfs).--Dec. 30 (11:30 p.m.) 2,610 cfs (5.69 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 upstream from confluence with Middle Fork Willamette River.

Drainage area.--642 sq mi.

Records available.--August 1905 to February 1912, October 1950 to September 1955.

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.--11 years (1905-11, 1950-55), 1,766 cfs (1,279,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,440 cfs Dec. 31 (gage height, 10.17 ft); minimum, 118 cfs Nov. 9, 10 (gage height, 2.16 ft).
1905-12, 1950-55: Maximum discharge, 58,500 cfs Nov. 22, 1909 (gage height, 19.5 ft, site and datum then in use, from graph based on gage readings), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum, 36 cfs Sept. 29, 30, Oct. 11, 12, 1908.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Flow regulated by Cottage Grove Reservoir (see p. 114) and Dorena Reservoir (see p. 117). Only small diversions above station.

Revisions (water years).--WSP 1218: Drainage area. WSP 1248: 1905-12.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 22				Apr. 23 to Sept. 30			
2.1	100	6.0	3,150	2.2	155	4.0	1,340
2.5	240	8.0	5,750	2.5	270	6.0	3,150
3.0	545	10.0	9,110	3.0	580	8.0	5,750
4.0	1,310						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	510	524	228	8,170	2,240	2,080	5,510	2,470	1,080	601	811	1,250
2	510	306	220	a7,000	2,070	4,590	5,400	2,340	1,050	440	818	1,240
3	503	*270	220	a6,000	1,470	3,540	4,170	1,940	1,060	404	860	1,250
4	503	168	220	a4,000	958	2,690	2,720	1,450	1,090	392	868	1,280
5	496	154	246	a2,500	958	1,940	*2,130	1,240	1,080	374	980	1,240
6	496	144	1,990	a2,200	1,010	1,340	1,690	1,220	1,070	295	1,000	1,220
7	503	144	2,660	a2,000	1,240	910	1,600	1,700	1,050	280	1,100	1,150
8	496	137	1,340	a1,700	2,450	1,300	1,920	1,760	1,060	280	1,110	988
9	489	121	1,090	a1,800	4,230	1,800	2,040	1,700	1,060	275	1,110	876
10	489	127	846	a1,800	3,160	1,410	2,450	1,500	1,050	266	1,100	720
11	496	130	692	*1,320	2,170	1,680	2,830	1,230	948	250	1,130	517
12	531	165	706	1,210	1,530	2,410	3,100	1,230	615	234	1,170	440
13	559	285	2,250	1,270	1,180	3,160	5,810	1,200	594	*230	1,160	320
14	531	301	2,640	1,320	982	2,930	5,740	1,440	545	218	1,160	234
15	489	503	1,760	1,400	770	2,130	4,070	2,110	416	218	*1,160	230
16	405	982	1,530	2,750	713	1,470	3,720	1,590	386	206	1,210	238
17	399	1,440	1,250	2,950	671	1,330	3,770	1,360	374	210	1,200	275
18	393	1,110	990	2,370	650	1,220	3,190	1,310	374	198	1,190	238
19	440	974	854	1,760	538	1,160	2,670	1,590	374	194	1,170	222
20	496	778	792	1,480	503	1,050	3,610	*1,840	380	194	1,160	186
21	468	664	629	1,610	*489	785	5,750	1,900	386	194	1,160	183
22	601	538	545	2,880	475	1,140	6,380	1,640	398	250	1,140	180
23	545	440	552	3,900	468	2,340	5,390	1,200	416	250	1,150	180
24	482	296	1,130	3,030	475	3,460	4,110	811	434	262	1,200	172
25	447	290	1,410	2,590	566	4,320	3,120	650	428	270	1,200	172
26	440	318	1,370	2,320	629	3,920	2,760	629	428	270	1,200	169
27	685	296	1,100	1,800	699	3,670	2,490	720	434	206	1,230	169
28	685	285	1,050	1,670	785	4,260	2,180	932	475	198	1,210	176
29	678	260	1,210	1,610	-	5,690	2,440	940	545	190	1,180	176
30	650	236	4,700	1,710	------	6,100	2,520	1,090	713	398	1,180	172
31	559	-----	8,280	1,930	-----	5,640	-----	1,090	------	650	1,260	------
Total	15,974	12,386	44,500	80,050	34,079	81,465	105,280	43,822	20,313	8,897	34,577	15,863
Mean	515	413	1,435	2,582	1,217	2,628	3,509	1,414	677	287	1,115	529
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	31,680	24,570	88,260	158,800	67,590	161,600	208,800	86,920	40,290	17,650	68,580	31,460

Calendar year 1954: Max 11,400 Min 121 Mean 1,317 Cfsm 2.05 In. 27.85 Ac-ft 953,600
Water year 1954-55: Max 8,280 Min 121 Mean 1,362 Cfsm 2.12 In. 28.80 Ac-ft 986,200

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, records for station below Cottage Grove Dam, Row River near Cottage Grove, and Mosby Creek at mouth near Cottage Grove.

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 1955. Published as "at Eugene" June 1919 to September 1928; gage-height records collected at site at Eugene since 1878 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.--37 years (1912-13, 1919-55), 5,294 cfs (3,833,000 acre-ft per year).

Extremes.--Maximum discharge during year, 25,900 cfs Dec. 31 (gage height, 7.53 ft); minimum daily, 900 cfs Dec. 5.
1911-13, 1919-55: 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 no gage-height record, which are fair. Small diversions above station. Flow regulated by Cottage Grove Reservoir (see p. 114), Dorena Reservoir (see p. 117), and Lookout Point Reservoir (see p. 109).

Revisions (water years).--WSP 694: Drainage area. WSP 984: 1921, 1923, 1927. WSP 1248: 1912-13, 1926, 1928, 1930.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 24, 28-30, Dec. 1, 6)

1.4	920	3.5	5,410
1.8	1,400	5.0	11,400
2.5	2,720	7.0	22,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,210	2,490	1,960	18,600	5,260	6,410	12,200	5,900	6,400	4,180	1,860	2,650
2	2,190	2,290	a1,000	15,000	5,540	11,000	12,100	5,380	5,470	3,910	1,920	2,650
3	2,190	2,150	a1,500	12,400	4,660	7,820	11,000	4,860	5,440	3,700	*1,980	2,580
4	2,170	2,030	a1,100	*8,610	3,990	6,060	8,730	4,180	5,380	3,620	2,070	2,510
5	2,150	1,920	a900	7,560	3,420	4,770	8,330	4,100	6,680	3,580	2,170	2,630
6	2,150	1,920	3,450	6,500	3,320	3,910	9,030	*3,700	7,780	3,100	2,190	2,600
7	2,150	1,920	4,430	5,670	4,230	3,250	8,690	4,070	9,110	2,400	2,270	2,560
8	2,150	1,900	2,700	5,190	6,370	3,580	8,940	4,200	9,510	2,420	2,290	2,380
9	2,150	1,880	2,270	7,240	9,870	4,230	9,160	4,070	9,920	2,130	2,340	2,270
10	2,150	1,850	1,990	10,600	7,750	3,860	9,960	3,800	10,700	1,900	2,380	2,210
11	2,190	1,850	1,980	9,740	*5,960	4,890	10,700	3,780	8,820	2,230	2,380	1,980
12	2,310	1,920	2,270	9,740	4,630	5,760	12,200	3,960	7,940	2,050	2,450	2,090
13	2,510	2,150	4,430	8,570	4,010	6,610	17,300	3,930	7,630	1,990	2,450	2,890
14	*2,470	2,170	5,040	5,990	3,450	6,160	16,400	4,950	7,000	2,290	2,420	2,630
15	2,360	2,420	3,730	5,010	3,010	5,040	13,400	5,900	6,090	2,310	2,420	2,380
16	2,230	3,060	3,250	6,720	2,790	4,010	12,600	5,440	5,160	2,090	2,450	2,250
17	2,150	3,750	2,890	7,330	2,740	3,650	12,800	5,160	*4,680	1,690	2,470	2,380
18	2,130	2,790	2,490	6,500	2,670	3,380	12,300	4,480	4,150	2,420	2,510	2,190
19	2,230	2,420	2,310	5,470	2,490	3,200	11,600	5,630	3,420	2,110	2,540	2,070
20	2,490	2,790	2,130	5,100	2,380	2,980	13,200	6,720	3,800	1,690	2,670	2,740
21	2,450	2,940	1,900	5,130	2,270	2,600	16,600	9,330	4,480	1,600	2,470	2,630
22	2,910	2,560	1,740	6,090	2,230	3,060	18,000	10,200	4,540	1,660	2,450	2,380
23	2,910	*2,270	1,600	7,940	2,230	5,760	15,800	8,570	4,370	1,860	2,490	2,380
24	2,630	2,110	2,150	7,000	2,250	8,370	12,400	6,470	3,880	2,050	2,630	2,340
25	2,420	2,290	2,820	6,540	2,450	*12,200	9,820	5,700	3,350	2,050	2,600	2,110
26	2,290	2,340	2,790	6,400	2,490	11,600	8,610	5,220	3,320	2,310	2,560	2,010
27	2,340	2,270	2,380	5,630	2,600	11,000	8,170	4,570	3,880	3,680	2,560	2,400
28	2,030	2,250	2,700	5,130	2,790	11,400	7,560	4,830	3,860	4,040	2,540	*2,540
29	2,170	2,070	3,800	4,480	-	13,600	7,780	5,100	4,010	2,670	2,510	2,560
30	2,560	1,920	12,300	4,260	- -	13,900	6,330	5,760	4,260	1,680	2,510	2,580
31	2,540	-	22,400	4,570	- -	12,500	-----	6,890	- - - -	1,730	2,670	- -
Total	71,980	68,690	108,400	230,750	107,850	206,460	341,710	166,850	175,030	77,140	74,220	72,570
Mean	2,322	2,290	3,497	7,444	3,852	6,660	11,390	5,382	5,834	2,488	2,394	2,419
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	142,800	136,200	215,000	457,700	213,900	409,500	677,800	330,900	347,200	153,000	147,200	143,900

Calendar year 1954: Max 30,500 Min 900 Mean 4,825 Cfsm 2.38 In. 32.26 Ac-ft 3,493,000
Water year 1954-55: Max 22,400 Min 900 Mean 4,662 Cfsm 2.30 In. 31.17 Ac-ft 3,375,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Middle Fork Willamette River at Jasper and Coast Fork Willamette River near Goshen.

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 (river-profile survey).

Drainage area.--101 sq mi.

Records available.--June 1912 to July 1915, October 1947 to September 1955.

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.--10 years (1912-14, 1947-55), 506 cfs (366,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,360 cfs June 11 (gage height, 4.88 ft); minimum, 230 cfs Mar. 20, 21, 23, 24.

1912-15, 1947-55: Maximum discharge, 2,600 cfs Jan. 18, 1953 (gage height, 7.21 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 good. Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sinkholes in lava rock along south edge of lake above station.

Revisions (water years).--WSP 1124: Drainage area. WSP 1288: 1949.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 10		June 11 to Sept. 30	
1.5	220	1.7	288
2.0	333	3.0	620
3.0	620	5.0	1,410
5.0	1,410		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	283	314	356	331	274	311	283	361	*828	790	448	360
2	283	311	348	340	269	297	285	361	790	776	440	350
3	280	304	346	353	267	285	295	358	786	758	438	350
4	276	299	340	366	267	278	295	358	825	741	*438	340
5	276	292	338	374	267	271	297	358	896	724	438	340
6	271	290	346	376	267	264	302	361	984	706	436	330
7	276	280	333	381	278	*262	302	368	1,060	685	433	320
8	271	276	326	387	295	258	304	371	1,140	671	433	320
9	269	274	323	389	307	255	311	376	1,270	660	430	320
10	269	269	319	*387	316	258	319	395	1,340	647	420	320
11	274	267	311	384	326	255	328	417	1,330	632	421	314
12	276	267	309	381	333	258	336	440	1,290	623	410	312
13	274	264	311	379	340	353	346	550	1,230	617	410	320
14	274	267	299	374	346	249	350	617	1,150	614	410	320
15	278	271	297	371	350	244	356	599	1,100	605	410	320
16	283	278	290	366	350	240	366	590	1,060	596	410	314
17	283	295	285	356	350	238	363	587	1,020	578	400	314
18	280	297	280	350	350	236	366	602	1,010	560	400	310
19	287	314	276	343	348	234	368	668	992	548	400	310
20	285	323	274	336	346	232	368	825	980	533	400	310
21	297	333	271	328	343	230	368	892	980	515	400	306
22	299	343	267	323	338	242	371	842	960	500	390	*303
23	304	348	271	316	331	234	371	808	924	490	390	301
24	319	353	276	309	328	232	371	783	888	480	380	299
25	326	361	278	304	328	232	371	780	856	480	380	297
26	328	361	283	295	323	232	371	783	850	480	370	297
27	328	363	283	285	316	234	368	800	832	480	370	297
28	328	361	287	283	314	244	368	808	832	470	370	297
29	328	361	287	278	-	260	366	842	825	465	360	292
30	326	358	302	274	------	264	363	900	797	458	360	290
31	321	-----	323	276	-----	269	-----	880	------	452	360	------
Total	9,052	9,294	9,435	10,595	8,867	7,851	10,228	18,680	29,825	18,334	12,555	9,473
Mean	292	310	304	342	317	253	341	603	994	591	405	316
Cfsm	2.89	3.07	3.01	3.39	3.14	2.50	3.38	5.97	9.84	5.85	4.01	3.13
In.	3.33	3.42	3.47	3.90	3.26	2.89	3.77	6.88	10.98	6.75	4.62	3.49
Ac-ft	17,950	18,430	18,710	21,010	17,590	15,570	20,290	37,050	59,160	36,360	24,900	18,790

Calendar year 1954: Max 860 Min 264 Mean 478 Cfsm 4.73 In. 64.19 Ac-ft 345,800
Water year 1954-55: Max 1,340 Min 230 Mean 422 Cfsm 4.18 In. 57.76 Ac-ft 305,800

Peak discharge (base, 750 cfs).--June 11 (3 to 4 a.m.) 1,360 cfs (4.88 ft).

* Discharge measurement made on this day.

Note.--No gage-height record July 23-27, Aug. 9, 10, Aug. 12 to Sept. 10, Sept. 13-15, 18-20; discharge estimated on basis of recorded range in stage and records for station at McKenzie Bridge.

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 Horse Creek, and at mile 66.4 (river-profile survey).

Drainage area.--345 sq mi at measuring section three-quarters of a mile upstream from gage.

Records available.--August 1910 to September 1955. 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 at various datums.

Average discharge.--39 years (1910-14, 1915-16, 1918-21, 1923-25, 1926-55), 1,643 cfs (1,189,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,950 cfs June 9 (gage height, 3.39 ft); minimum, 1,180 cfs Sept. 30.
1910-55: Maximum discharge, 16,500 cfs 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.

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

Revisions (water years).--WSP 814: Drainage area. WSP 1248: 1911-16, 1919(M), 1920-25.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30		Dec. 31 to Sept. 30	
1.2	1,220	1.2	1,160
1.9	2,000	2.0	2,000
		4.0	4,960

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,280	1,300	1,380	2,600	1,420	1,430	1,820	1,750	2,410	2,300	1,570	1,310
2	1,270	1,290	1,380	2,220	1,390	1,430	1,780	1,740	2,320	2,240	1,550	1,300
3	1,270	1,280	1,360	1,990	1,380	1,410	1,730	1,700	2,380	2,200	1,540	1,300
4	1,270	1,270	1,350	1,860	1,350	1,380	*1,660	1,700	2,560	2,140	1,530	1,290
5	1,270	1,270	1,360	1,750	1,350	1,350	1,630	1,790	2,830	2,110	1,520	1,290
6	1,260	1,260	1,460	1,650	1,370	1,330	1,610	1,920	3,060	2,080	1,520	1,280
7	1,270	1,260	*1,410	1,600	1,740	1,330	1,630	1,960	3,340	2,050	1,510	1,270
8	1,260	1,260	1,380	1,580	2,120	1,330	1,690	2,060	3,540	*2,040	1,500	1,270
9	1,260	1,260	1,360	1,540	2,130	1,320	1,880	2,010	3,780	2,000	1,490	1,260
10	1,280	1,250	1,350	1,500	1,920	1,350	2,070	2,050	3,830	1,980	1,480	1,250
11	1,290	1,250	1,330	1,470	1,790	1,380	1,990	2,270	3,700	1,950	1,470	1,240
12	1,330	1,270	1,350	*1,440	1,720	1,410	1,990	2,380	3,480	1,940	1,460	1,240
13	1,300	1,260	1,390	1,460	1,640	1,400	2,080	2,340	3,200	1,940	1,450	1,260
14	1,280	1,280	1,390	1,420	1,600	1,380	2,000	2,240	2,940	1,940	1,440	1,270
15	1,270	1,300	1,410	1,420	1,570	1,360	1,920	2,120	2,760	1,920	1,440	1,290
16	1,270	1,450	1,390	1,400	1,550	1,340	1,870	*2,050	2,620	1,870	*1,430	1,320
17	1,270	1,880	1,360	1,380	1,540	1,310	1,800	2,020	2,550	1,820	1,420	1,280
18	1,260	1,680	1,340	1,370	1,510	1,300	1,750	2,140	2,540	1,780	1,420	1,240
19	1,340	1,610	1,330	1,350	1,490	1,280	1,700	2,620	2,540	1,750	1,410	1,230
20	*1,350	1,550	1,320	1,340	1,470	1,270	1,690	3,120	2,560	1,730	1,400	1,220
21	1,460	1,500	1,320	1,340	1,440	1,260	1,780	3,020	2,600	1,700	1,400	1,220
22	1,560	1,460	1,340	1,350	1,430	1,320	1,990	2,770	2,560	1,680	1,390	1,210
23	1,450	1,440	1,400	1,350	1,410	1,330	1,990	2,580	2,500	1,670	1,380	1,210
24	1,410	1,420	1,440	1,350	1,410	1,510	1,950	2,450	2,410	1,650	1,370	1,210
25	1,390	1,430	1,410	1,350	*1,380	1,650	1,900	2,400	2,330	1,630	1,360	1,200
26	1,360	1,420	1,380	1,340	1,370	1,660	1,860	2,400	2,300	1,650	1,350	1,200
27	1,350	1,440	1,350	1,330	1,350	1,640	1,780	2,440	2,290	1,630	1,340	1,200
28	1,340	1,420	1,350	1,330	1,360	1,700	1,750	2,460	2,370	1,620	1,330	1,220
29	1,330	1,400	1,400	1,330	-	2,000	1,740	2,620	2,340	1,600	1,330	1,190
30	1,320	1,390	1,970	1,340	------	1,890	1,740	2,710	2,280	1,590	1,320	1,190
31	1,310	-----	2,950	1,400	-----	1,800	-----	2,560	------	1,580	1,320	------
Total	40,930	41,550	44,710	47,150	43,180	44,850	54,770	70,390	82,920	57,780	44,440	37,460
Mean	1,320	1,385	1,442	1,521	1,542	1,447	1,828	2,271	2,764	1,864	1,434	1,249
Cfsm	3.83	4.01	4.18	4.41	4.47	4.19	5.29	6.58	8.01	5.40	4.16	3.62
In.	4.41	4.48	4.82	5.08	4.65	4.83	5.90	7.59	8.94	6.23	4.79	4.04
Ac-ft	81,180	82,410	88,680	93,520	85,650	88,960	108,600	139,600	164,500	114,600	88,150	74,300

Calendar year 1954: Max 3,310 Min 1,250 Mean 1,836 Cfsm 5.32 In. 72.23 Ac-ft 1,329,000
Water year 1954-55: Max 3,830 Min 1,190 Mean 1,672 Cfsm 4.85 In. 65.76 Ac-ft 1,210,000

Peak discharge (base, 3,000 cfs).--Dec. 31 (6:30 a.m.) 3,020 cfs (2.78 ft); May 20 (8 to 11 p.m.) 3,200 cfs (2.90 ft); June 9 (8:30 p.m.) 3,950 cfs (3.39 ft).
* Discharge measurement made on this day.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 1,236.42 ft above mean sea level (U. S. Public Roads Administration benchmark).

Average discharge.--8 years, 945 cfs (684,200 acre-ft per year).

Extremes.--Maximum discharge during year, 3,790 cfs Dec. 30 (gage height, 4.33 ft); minimum, 258 cfs Sept. 12, 13 (gage height, 1.28 ft).

1947-55: Maximum discharge, 16,400 cfs Jan. 18, 1953 (gage height, 8.34 ft), from rating curve extended above 8,200 cfs by logarithmic plotting; minimum, about 210 cfs Oct. 1, 1947.

Maximum discharge known, 24,500 cfs Dec. 28, 1945 (gage height, 8.8 ft, from floodmarks, at Corps of Engineers gage at site 40 ft upstream; corresponding gage height at present site and datum, about 9.3 ft), computed by Corps of Engineers.

Remarks.--Records good except those for periods of doubtful gage-height record, which are fair. Records of water temperatures for period July to September 1955 are given in WSP 1403. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.2	230
1.5	350
2.0	680
3.0	1,700
4.5	4,110

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	297	d320	d360	2,400	877	640	1,310	1,040	1,300	868	328	269
2	297	d320	d340	1,520	778	712	1,210	1,000	1,160	832	323	269
3	297	d320	d340	1,140	696	572	1,090	940	1,300	778	318	265
4	297	d320	d320	931	640	502	*990	960	1,600	704	314	265
5	297	d300	d320	823	640	467	913	1,180	1,990	664	310	265
6	297	d300	d440	688	664	460	886	1,450	2,370	656	305	265
7	293	d300	*418	648	1,300	481	950	1,520	2,710	624	305	262
8	297	d300	390	d600	1,700	565	1,120	1,680	3,010	624	305	262
9	297	d290	d360	d550	1,620	600	1,460	1,540	3,200	600	301	265
10	314	d290	d340	d500	1,230	640	1,790	1,530	3,100	579	301	265
11	355	314	d320	d460	1,000	823	1,580	1,900	2,760	551	301	262
12	406	412	d380	*460	877	850	1,510	2,060	2,400	537	297	262
13	424	d360	d460	523	787	787	1,640	1,710	1,990	530	297	269
14	375	d400	d550	481	720	680	1,400	1,470	1,650	516	293	305
15	350	488	600	488	688	608	1,190	1,280	1,390	502	289	301
16	346	656	d550	495	688	572	1,120	*1,150	1,230	481	*289	400
17	360	d850	d480	460	688	558	1,030	1,130	1,140	460	289	341
18	346	769	d440	460	632	551	960	1,330	1,130	430	289	305
19	*406	d650	d400	442	616	530	922	2,130	1,120	412	285	293
20	412	d550	d380	430	593	516	931	2,850	1,150	400	285	281
21	442	d480	d400	436	565	502	1,110	2,430	1,190	385	281	277
22	558	d440	d420	516	551	640	1,460	1,970	1,160	375	281	273
23	509	d420	448	565	537	712	1,370	1,700	1,130	370	281	273
24	460	d400	d600	572	544	990	1,280	1,500	1,020	355	281	273
25	424	d400	d550	608	*488	1,240	1,140	1,400	931	350	281	269
26	395	d380	d500	600	474	1,180	1,040	1,400	913	365	277	269
27	375	d380	d460	600	460	1,160	940	1,370	858	375	277	273
28	d360	d380	d550	624	460	1,360	895	1,400	990	350	277	289
29	d340	d380	d700	640	-	1,830	940	1,650	1,010	346	269	273
30	d340	d360	d2,100	696	------	1,540	970	1,780	877	341	269	269
31	d340	-----	3,280	832	-----	1,300	-----	1,520	------	332	269	------
Total	11,306	12,529	18,196	21,188	21,513	24,568	35,147	47,970	47,780	15,692	9,067	8,409
Mean	365	418	587	683	768	793	1,172	1,547	1,593	506	292	280
Cfsm	1.73	1.98	2.78	3.24	3.64	3.76	5.55	7.33	7.55	2.40	1.38	1.33
In.	1.99	2.21	3.21	3.73	3.79	4.33	6.19	8.46	8.42	2.77	1.60	1.48
Ac-ft	22,430	24,850	36,090	42,030	42,670	48,730	69,710	95,150	94,770	31,120	17,980	16,680

Calendar year 1954: Max 3,280 Min 277 Mean 752 Cfsm 3.56 In. 48.36 Ac-ft 544,400
Water year 1954-55: Max 3,280 Min 262 Mean 749 Cfsm 3.55 In. 48.18 Ac-ft 542,200

Peak discharge (base, 3,500 cfs).--Dec. 30 (11 p.m.) 3,790 cfs (4.33 ft).

* Discharge measurement made on this day.

d Doubtful gage-height record; discharge computed on basis of appearance of recorder chart, weather records, and records for McKenzie River near Vida and Blue River near Blue River.

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 1955 (discontinued).

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.--8 years, 72.6 cfs (52,560 acre-ft per year).

Extremes.--Maximum discharge during year, 267 cfs June 8 (gage height, 2.18 ft); minimum, 2.7 cfs Sept. 13.
1947-55: Maximum discharge, 1,630 cfs Jan. 18, 1953 (gage height, 4.18 ft), from rating curve extended above 530 cfs by logarithmic plotting; maximum gage height, 4.54 ft Jan. 18, 1953 (momentary backwater from debris); minimum discharge, 2.1 cfs Sept. 19-25, 1951, Oct. 7-30, 1952 (gage height, 0.62 ft).

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

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.6	1.6	1.2	51
.7	5.2	1.5	100
.8	11	2.0	215
1.0	26	2.5	380

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	12	22	188	68	48	112	76	122	68	12	4.3
2	5.2	12	22	140	62	35	104	77	110	63	12	4.3
3	5.2	11	21	106	52	28	89	76	122	63	12	4.3
4	5.2	10	21	82	48	25	76	79	161	56	12	3.9
5	4.7	10	24	69	47	24	71	102	185	48	11	3.5
6	4.7	11	48	57	52	24	68	129	205	47	10	3.5
7	6.2	10	36	50	133	24	74	142	*229	41	10	3.5
8	6.2	12	33	44	173	26	89	156	255	40	9.8	3.1
9	5.2	13	32	38	166	26	127	149	258	37	9.8	3.1
10	9.8	10	29	36	131	35	156	149	252	35	9.2	3.1
11	20	12	28	32	100	43	142	173	226	34	9.2	
12	23	20	35	30	82	50	142	188	195	34	9.2	3.1
13	17	15	44	33	71	40	154	166	171	34	8.6	3.1
14	12	25	41	29	63	34	129	142	144	34	8.0	8.6
15	10	27	50	28	58	32	106	120	110	33	7.4	20
16	9.8	50	41	27	56	30	95	106	95	30	7.4	21
17	10	129	37	26	56	28	82	104	89	26	6.8	12
18	8.6	93	35	25	51	27	72	122	89	24	6.8	8.6
19	24	77	33	23	47	26	66	188	89	22	6.2	6.8
20	17	62	32	22	44	25	64	240	98	21	5.7	5.7
21	52	51	34	*25	40	25	82	215	104	20	5.7	5.2
22	54	*43	38	36	37	47	112	183	100	18	5.7	a4.8
23	34	36	56	30	35	34	114	159	89	17	5.7	a4.4
24	27	33	64	28	35	57	110	140	74	17	5.7	a4
25	23	37	57	29	34	72	96	127	66	16	5.7	a3.6
26	20	30	48	29	33	77	86	124	63	20	5.2	a3.4
27	17	35	41	29	30	79	74	135	63	*18	5.2	a4.2
28	16	27	40	29	36	102	69	140	74	16	5.2	a8
29	14	25	47	30	-	156	69	164	68	15	4.7	a6.5
30	14	24	115	35	------	142	72	166	63	14	4.7	a5
31	13	-----	232	54	-----	114	-----	147	------	13	4.3	------
Total	493.0	962	1,436	1,439	1,840	1,535	2,902	4,384	3,969	974	240.9	183.2
Mean	15.9	32.1	46.3	46.4	65.7	49.5	96.7	141	132	31.4	7.77	6.11
Cfsm	1.38	2.79	4.03	4.03	5.71	4.30	8.41	12.3	11.5	2.73	0.676	0.531
In.	1.59	3.11	4.64	4.65	5.95	4.96	9.38	14.18	12.84	3.15	0.78	0.59
Ac-ft	978	1,910	2,850	2,850	3,650	3,040	5,760	8,700	7,870	1,930	478	363

Calendar year 1954: Max 232 Min 4.3 Mean 49.5 Cfsm 4.30 In. 58.40 Ac-ft 35,830
Water year 1954-55: Max 258 Min 3.1 Mean 55.8 Cfsm 4.85 In. 65.82 Ac-ft 40,380

Peak discharge (base, 400 cfs).--No peak above base.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, records for station near Blue River, and Lookout Creek near Blue River.

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 town of Blue River.

Drainage area.--24.1 sq mi.

Records available.--August 1949 to September 1955 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 1,370 ft (from topographic map).

Average discharge.--6 years, 140 cfs (101,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,150 cfs Dec. 30 (gage height, 5.15 ft), from rating curve extended above 700 cfs by logarithmic plotting; maximum gage height, 5.23 ft Dec. 30 (momentary backwater from debris); minimum discharge, 14 cfs Oct. 3-7, 9. 1949-55: Maximum discharge, 3,620 cfs Jan. 18, 1953 (gage height, 7.18 ft), from rating curve extended above 700 cfs by logarithmic plotting; minimum, 6.4 cfs Nov. 25-30, 1952.

Remarks.--Records excellent. No regulation or diversion above station. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30		Dec. 31 to Sept. 30			
1.9	13	1.9	14	3.0	127
2.1	19	2.1	22	3.5	260
2.3	29	2.3	32	4.0	445
2.6	59	2.6	59	5.0	1,030

Note.--Same as following table above 2.6 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	23	35	650	155	150	242	165	170	93	24	*16
2	15	22	32	384	134	150	215	158	158	84	23	16
3	14	21	31	257	117	103	188	150	180	75	23	16
4	14	20	30	198	105	79	*165	155	242	69	22	16
5	14	20	33	160	103	69	150	182	287	62	22	16
6	14	20	76	129	117	60	145	218	338	69	21	15
7	15	20	*62	111	257	69	158	236	376	65	21	15
8	15	19	52	102	475	81	182	260	404	*62	21	15
9	14	20	48	93	416	84	251	239	409	58	21	15
10	19	19	44	83	297	98	314	245	384	54	20	15
11	27	19	40	73	230	141	281	300	322	50	20	15
12	45	27	52	*67	188	155	311	328	263	49	20	15
13	40	23	102	√76	162	138	353	272	212	48	19	17
14	28	31	107	70	145	109	275	224	175	45	19	20
15	23	43	109	70	132	93	221	195	148	43	19	24
16	22	98	91	69	127	83	198	*175	129	41	19	36
17	23	242	76	63	121	75	175	168	121	38	*18	25
18	20	155	66	59	111	73	155	200	119	36	18	20
19	*35	121	59	55	102	69	143	339	115	34	18	18
20	41	94	55	52	94	63	148	455	123	33	17	18
21	98	76	55	51	87	60	195	380	125	31	17	16
22	125	63	59	67	83	123	275	300	119	30	17	16
23	84	54	75	78	76	127	260	251	109	29	17	16
24	63	46	84	79	*78	215	224	215	96	28	17	16
25	49	49	75	84	73	236	195	200	89	27	17	16
26	41	43	66	84	70	215	175	195	84	32	17	15
27	35	51	58	84	67	203	155	192	79	30	16	16
28	31	43	58	86	73	254	150	198	96	28	16	21
29	27	40	99	86	-	342	162	236	98	26	16	17
30	26	36	574	98	------	297	162	239	84	25	16	16
31	24	-----	897	132	-----	254	-----	203	------	25	16	------
Total	1,056	1,558	3,300	3,750	4,197	4,268	6,223	7,273	5,652	1,419	587	528
Mean	34.1	51.9	106	121	150	138	207	235	188	45.8	18.9	17.6
Cfsm	1.41	2.15	4.40	5.02	6.22	5.73	8.59	9.75	7.80	1.90	0.784	0.730
In.	1.63	2.40	5.09	5.79	6.48	6.59	9.60	11.22	8.72	2.19	0.91	0.81
Ac-ft	2,090	3,090	6,550	7,440	8,320	8,470	12,340	14,430	11,210	2,810	1,160	1,050

Calendar year 1954: Max 897 Min 13 Mean 100 Cfsm 4.15 In. 56.52 Ac-ft 72,660
Water year 1954-55: Max 897 Min 14 Mean 109 Cfsm 4.52 In. 61.43 Ac-ft 78,960

Peak discharge (base, 800 cfs).--Dec. 30 (10 p.m.) 1,150 cfs (5.15 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 town of Blue River.

Drainage area.--75 sq mi, approximately.

Records available.--September 1935 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,225 ft (from profile map of McKenzie River).

Average discharge.--20 years, 385 cfs (278,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,030 cfs Dec. 31 (gage height, 4.86 ft), from rating curve extended above 2,500 cfs on basis of shape of previous curve defined to 7,500 cfs; minimum, 28 cfs Sept. 12.
1935-55: 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 excellent. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.0	16	2.5	860
1.1	36	3.0	1,350
1.3	90	4.0	2,650
1.5	175	5.0	4,280
2.0	465		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	81	148	2,140	600	352	788	551	478	280	66	36
2	41	78	139	1,180	452	382	680	517	432	269	63	36
3	41	75	130	788	388	269	572	472	510	236	63	36
4	43	69	130	586	334	210	*472	498	689	220	63	34
5	43	66	130	472	328	180	426	707	851	190	60	34
6	43	69	328	382	352	170	420	860	968	190	60	32
7	46	66	*298	340	1,010	185	537	905	1,090	180	58	32
8	43	63	252	310	1,640	236	672	959	1,150	175	58	32
9	43	72	225	292	1,360	269	905	815	1,140	170	55	30
10	63	63	210	269	851	280	1,100	851	1,080	157	53	30
11	102	63	190	242	586	446	869	1,100	914	148	50	30
12	162	102	210	*225	478	465	914	1,090	743	*148	48	30
13	175	87	370	258	420	400	1,100	833	593	148	48	38
14	118	134	382	236	388	316	788	664	478	148	48	63
15	98	225	413	236	376	269	593	572	394	139	48	66
16	81	446	346	225	382	236	524	504	340	130	46	152
17	84	1,080	292	215	376	220	478	*510	316	118	*43	87
18	72	656	264	205	328	215	413	689	316	106	43	63
19	*134	498	242	190	298	210	370	1,240	316	102	41	53
20	185	400	230	175	269	190	382	1,540	334	94	41	46
21	388	322	264	170	258	180	537	1,180	346	90	41	43
22	498	264	280	230	236	292	905	896	340	87	38	38
23	298	225	340	298	215	334	806	707	298	84	38	36
24	225	195	400	298	220	600	689	600	269	81	38	36
25	175	195	334	304	*215	806	558	572	236	78	38	34
26	148	175	286	310	210	761	491	565	225	94	38	32
27	126	215	247	310	195	689	426	579	220	94	36	34
28	114	185	242	328	215	959	394	600	269	81	36	53
29	98	175	304	328	-	1,310	452	761	280	78	36	41
30	90	162	1,490	382	------	1,020	491	743	242	72	36	36
31	84	-----	3,130	491	-----	806	-----	593	------	69	36	------
Total	3,904	6,506	12,246	12,415	12,980	13,257	18,752	23,673	15,857	4,256	1,466	1,343
Mean	126	217	395	400	464	428	625	764	529	137	47.3	44.8
Cfsm	1.68	2.89	5.27	5.33	6.19	5.71	8.33	10.2	7.05	1.83	0.631	0.597
In.	1.94	3.23	6.07	6.16	6.44	6.57	9.30	11.74	7.86	2.11	0.73	0.67
Ac-ft	7,740	12,900	24,290	24,620	25,750	26,290	37,190	46,950	31,450	8,440	2,910	2,660

Calendar year 1954: Max 3,130 Min 41 Mean 345 Cfsm 4.60 In. 62.45 Ac-ft 249,700
Water year 1954-55: Max 3,130 Min 30 Mean 347 Cfsm 4.63 In. 62.82 Ac-ft 251,200

Peak discharge (base, 2,600 cfs).--Dec. 31 (12:30 a.m.) 4,030 cfs (4.86 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 (river-profile survey).

Drainage area.--930 sq mi, approximately.

Records available.--June 1910 to March 1911 (gage heights only), September 1924 to September 1955. 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.--31 years, 3,895 cfs (2,820,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,500 cfs Dec. 31 (gage height, 7.08 ft, from recorded range in stage); minimum, 1,940 cfs Sept. 12, 26 (gage height, 0.96 ft).
1924-55: 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 excellent except those for period of no gage-height record, which are good.

Revisions (water years).--WSP 1124: 1943.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	1,840
2.0	3,700
4.0	8,250
7.0	18,200

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,030	2,220	2,480	11,000	4,360	4,380	6,150	5,100	5,620	4,640	2,600	2,050
2	2,030	2,190	2,460	8,500	3,950	4,720	5,820	4,910	5,200	4,460	2,560	2,100
3	2,000	2,160	2,450	7,000	3,610	3,760	5,350	4,680	5,510	4,260	2,530	2,080
4	2,000	2,140	2,380	6,000	3,480	3,360	4,950	4,700	6,290	4,060	2,500	2,060
5	2,000	2,130	2,380	5,500	3,500	3,130	4,580	5,350	7,330	3,910	2,480	2,050
6	2,000	2,140	3,160	5,000	3,630	3,010	4,480	6,020	8,190	3,870	2,450	2,030
7	2,030	2,130	*3,060	4,600	6,320	3,080	4,740	6,150	9,120	3,780	2,430	2,030
8	2,030	2,110	2,820	4,200	8,460	3,410	*5,180	6,620	9,870	3,740	2,400	2,020
9	1,970	2,140	2,740	3,800	8,000	3,470	6,080	6,180	10,500	3,680	2,380	2,000
10	2,110	2,100	2,630	3,400	5,990	3,500	7,300	6,130	10,500	3,590	2,370	2,000
11	2,300	2,100	2,500	3,200	5,080	4,380	6,670	7,120	9,720	3,480	2,340	2,000
12	2,560	2,340	2,600	3,000	4,560	4,520	6,800	7,650	8,820	*3,470	2,340	1,980
13	2,620	2,240	3,000	3,000	4,260	4,300	7,940	6,740	7,700	3,480	2,320	2,030
14	2,290	2,340	3,600	*3,200	4,020	3,830	6,650	6,040	6,770	3,480	2,300	2,240
15	2,190	2,630	4,000	3,290	3,890	3,520	5,750	5,660	5,990	3,450	2,290	2,190
16	2,140	3,340	3,600	3,340	3,830	3,340	5,460	5,250	5,510	3,380	2,270	2,600
17	2,190	5,100	3,200	3,270	3,780	3,200	5,200	*5,100	5,290	3,230	*2,240	2,400
18	2,110	4,100	3,000	3,160	3,560	3,180	4,870	5,570	5,230	3,130	2,210	2,190
19	2,510	3,660	2,900	3,040	3,430	3,130	4,680	7,650	5,200	3,080	2,210	2,100
20	*2,740	3,360	2,800	3,010	3,300	2,990	4,760	9,840	5,290	3,010	2,190	2,060
21	3,090	3,110	2,700	3,010	3,200	2,900	5,510	8,940	5,400	2,960	2,180	2,030
22	5,870	2,940	3,200	3,380	3,140	3,780	7,120	7,590	5,350	2,920	2,180	2,030
23	3,210	2,800	3,600	3,650	3,040	4,120	6,720	6,770	5,290	2,870	2,160	2,020
24	2,920	2,670	3,800	3,540	*3,090	5,460	6,200	6,130	4,950	2,840	2,160	2,000
25	2,700	2,740	3,600	3,560	3,060	6,340	5,600	5,840	4,680	2,790	2,160	1,950
26	2,580	2,700	3,200	3,540	3,020	5,880	5,310	5,790	4,580	2,840	2,160	1,950
27	2,460	2,720	3,000	3,410	2,990	5,550	4,870	5,840	4,440	2,900	2,140	1,980
28	2,380	2,650	3,000	3,470	3,010	6,340	4,660	5,840	4,810	2,770	2,110	2,100
29	2,340	2,620	3,200	3,470	-	7,890	4,890	6,530	4,870	2,680	2,100	2,030
30	2,300	2,510	9,000	3,610	------	7,000	4,930	6,920	4,480	2,650	2,100	1,950
31	2,270	-----	16,000	4,100	-----	6,130	-----	6,290	------	2,630	2,080	------
Total	73,970	80,130	112,060	129,250	115,560	133,600	169,220	194,940	192,500	104,030	70,940	62,250
Mean	2,386	2,671	3,615	4,169	4,127	4,310	5,641	6,288	6,417	3,356	2,288	2,075
Cfsm	2.57	2.87	3.89	4.48	4.44	4.63	6.07	6.76	6.90	3.61	2.46	2.23
In.	2.96	3.20	4.48	5.17	4.62	5.34	6.77	7.80	7.70	4.16	2.84	2.49
Ac-ft	146,700	158,900	222,300	256,400	229,200	265,000	335,600	386,700	381,800	206,300	140,700	123,500

Calendar year 1954: Max 16,000 Min 1,970 Mean 4,122 Cfsm 4.43 In. 60.16 Ac-ft 2,984,000
Water year 1954-55: Max 16,000 Min 1,950 Mean 3,941 Cfsm 4.24 In. 57.53 Ac-ft 2,853,000

Peak discharge (base, 16,000 cfs).--Dec. 31 (time unknown) 18,500 cfs (7.08 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 11 to Jan. 13; discharge estimated on basis of weather records, records for station at McKenzie Bridge and Blue River near Blue River, and recorded range in stage.

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 1955.

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, 3,540 cfs Dec. 30 (gage height, 8.28 ft); minimum, 19 cfs Sept. 12, 13.
1951-55: Maximum discharge, 5,510 cfs Jan. 18, 1953 (gage height, 9.38 ft), from rating curve extended above 3,400 cfs; minimum, 12 cfs Nov. 26, 27, 1952.

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

Revisions (water years).--WSP 1348: 1952(M), 1953.

Rating table, water year 1954-55 (gage height in feet, and discharge, in cubic feet per second)

1.7	16	4.0	445
2.0	35	5.0	840
2.3	63	6.0	1,330
2.6	105	7.0	2,090
3.0	180	8.0	3,190
3.5	300		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	38	75	1,480	288	570	632	377	136	81	36	22
2	23	37	71	832	240	524	548	335	126	77	34	22
3	23	37	67	536	212	308	476	305	138	66	33	21
4	23	35	63	395	205	230	*424	300	154	60	33	20
5	23	36	68	322	252	192	386	332	144	56	33	20
6	23	40	198	270	290	178	380	340	140	61	32	20
7	23	37	*164	232	708	202	417	338	135	61	31	20
8	23	36	133	210	792	282	420	330	127	61	30	20
9	23	39	120	198	692	280	456	298	119	59	30	20
10	37	34	108	180	459	290	516	290	110	55	29	20
11	50	35	98	162	365	459	512	310	100	52	29	20
12	94	70	128	150	310	438	741	298	92	*50	29	19
13	79	50	362	192	272	380	912	265	86	48	28	25
14	48	64	308	*182	245	300	660	270	82	47	28	39
15	40	92	272	188	225	258	512	265	76	46	27	37
16	37	206	225	202	210	232	500	242	73	48	27	71
17	40	484	184	190	196	212	470	*242	70	46	*26	52
18	33	255	158	180	176	208	398	250	67	43	25	36
19	*69	205	138	160	166	200	374	285	64	42	25	29
20	68	166	124	156	156	182	420	295	63	41	25	26
21	176	131	115	170	146	176	576	260	60	41	24	25
22	207	110	108	302	144	424	868	225	60	39	24	24
23	110	98	110	320	133	445	760	200	67	38	23	23
24	83	87	138	295	*144	970	620	182	63	37	23	22
25	67	105	127	312	150	930	492	172	58	37	23	22
26	58	94	114	292	146	744	438	168	56	54	23	21
27	50	102	104	272	140	652	383	164	54	53	23	22
28	48	93	115	262	150	776	365	154	87	43	22	32
29	44	86	440	240	-	844	410	156	77	40	22	24
30	41	79	2,180	250	------	708	398	158	67	39	22	23
31	40	-----	2,000	278	-----	656	-----	148	------	37	23	------
Total	1,726	2,981	8,615	9,410	7,612	13,250	15,464	7,954	2,751	1,558	842	797
Mean	55.7	99.4	278	304	272	427	515	257	91.7	50.3	27.2	26.6
Cfsm	1.17	2.09	5.84	6.39	5.71	8.97	10.8	5.40	1.93	1.06	0.571	0.559
In.	1.35	2.33	6.73	7.35	5.95	10.35	12.08	6.21	2.15	1.22	0.66	0.62
Ac-ft	3,420	5,910	17,090	18,660	15,100	26,280	30,670	15,780	5,460	3,090	1,670	1,580

Calendar year 1954 : Max 2,180 Min 23 Mean 181 Cfsm 3.80 In. 51.62 Ac-ft 131,000
Water year 1954-55 : Max 2,180 Min 19 Mean 200 Cfsm 4.20 In. 57.00 Ac-ft 144,700

Peak discharge (base, 1,800 cfs).--Dec. 30 (8 p.m.) 3,540 cfs (8.28 ft).
* Discharge measurement made on this day.

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 1955. 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 396.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 24, 1944, wire-weight gage at same site and datum.

Average discharge.--11 years, 6,059 cfs (4,387,000 acre-ft per year).

Extremes.--Maximum discharge during year, 30,600 cfs Dec. 31 (gage height, 9.48 ft); minimum, 1,830 cfs Nov. 9 (gage height, 1.30 ft).
1944-55: Maximum discharge, 88,200 cfs Dec. 29, 1945 (gage height, 17.36 ft), from rating curve extended above 59,000 cfs; minimum daily, 1,310 cfs Oct. 29, 1944.

Remarks.--Records good except those for period of shifting control, which are fair. 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 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
1.6	2,140	4.0	6,500	1.6	2,090	4.0	6,550
2.0	2,640	6.0	13,500	2.0	2,610	6.0	13,200
3.0	4,210	9.0	27,700	3.0	4,270	9.0	27,700

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,240	2,470	*3,060	23,700	6,120	6,800	10,300	7,350	6,480	5,420	2,680	2,190
2	2,220	2,470	2,940	15,700	5,710	10,200	9,960	7,100	5,880	5,370	2,620	2,170
3	2,210	2,440	2,940	11,100	5,240	7,290	9,150	6,600	5,830	5,090	2,610	2,210
4	2,170	2,380	2,910	*8,910	4,930	5,900	8,430	6,410	6,550	4,820	*2,560	2,210
5	2,180	2,370	2,850	7,950	5,000	5,150	7,590	6,760	7,500	4,580	2,520	2,170
6	2,210	2,420	3,810	6,840	5,090	4,760	7,040	7,560	8,490	4,490	2,510	2,160
7	2,200	2,370	4,390	6,190	7,260	4,580	6,910	7,680	9,220	4,390	2,480	2,130
8	2,250	2,370	3,870	5,810	10,600	4,890	7,110	8,190	10,100	4,350	2,470	2,180
9	2,220	2,330	3,690	5,610	13,000	5,000	7,950	7,860	10,600	4,310	2,470	2,130
10	2,250	2,370	3,530	5,240	9,540	4,890	9,990	7,380	11,000	4,170	2,430	2,130
11	2,400	2,450	3,360	4,930	*7,830	6,070	10,200	8,160	10,900	4,030	2,400	2,120
12	2,820	2,570	3,270	4,710	6,730	6,600	10,700	9,030	10,300	3,950	2,390	2,160
13	3,120	2,640	4,810	4,840	6,090	6,860	15,200	8,400	9,540	3,830	2,390	2,160
14	2,760	2,580	5,030	4,890	5,640	6,190	12,500	7,860	8,850	3,850	2,380	2,380
15	*2,540	3,100	4,800	4,800	5,330	5,590	10,300	7,620	7,860	3,800	2,360	2,400
16	2,470	3,530	4,580	5,350	5,130	5,170	9,570	6,780	7,130	3,760	2,350	2,600
17	2,450	6,680	4,210	5,400	5,040	4,910	9,460	6,430	*6,650	3,620	2,440	2,860
18	2,410	6,290	3,890	5,170	4,820	4,710	8,610	6,530	6,450	3,510	2,340	2,480
19	2,510	4,910	3,710	4,870	4,540	4,540	7,980	7,950	6,430	3,350	2,300	2,320
20	3,200	4,480	3,550	4,650	4,410	4,330	8,550	10,700	6,360	3,300	2,310	2,230
21	3,090	4,010	3,500	4,690	4,270	4,210	9,710	10,700	6,430	3,210	2,250	2,230
22	4,620	3,740	3,450	5,350	4,090	5,480	12,800	9,180	6,480	3,140	2,270	2,220
23	3,920	3,490	3,470	6,000	4,010	7,530	12,600	8,190	6,360	3,060	2,250	2,210
24	3,440	3,330	3,960	5,690	3,970	9,180	11,000	7,320	6,140	3,020	2,250	2,190
25	3,180	3,330	4,020	5,590	4,110	*11,200	9,570	6,810	5,690	2,960	2,230	2,160
26	2,970	3,410	3,870	5,490	4,070	10,400	8,850	6,580	5,520	2,990	2,260	2,170
27	2,790	3,320	3,630	5,240	4,170	9,220	7,980	6,680	5,310	3,210	2,230	*2,210
28	2,720	3,240	3,680	5,130	4,090	9,880	7,380	6,530	5,490	3,000	2,190	2,300
29	2,630	3,210	4,140	5,020	-	12,000	7,680	6,890	5,970	2,850	2,210	2,310
30	2,570	3,100	11,500	5,040	- - - -	12,000	7,500	7,590	5,470	2,780	2,210	2,230
31	2,490	- - - -	27,600	5,350	- - - -	10,800	- - - -	7,210	- - - -	2,740	2,210	- - - -
Total	83,250	97,400	148,020	205,250	160,830	216,330	282,570	236,030	220,980	116,950	73,570	67,620
Mean	2,685	3,247	4,775	6,621	5,744	6,978	9,419	7,614	7,366	3,773	2,373	2,254
Cfsm	2.05	2.48	3.65	5.05	4.38	5.33	7.19	5.81	5.62	2.88	1.81	1.72
In.	2.36	2.77	4.20	5.83	4.57	6.14	8.02	6.70	6.27	3.32	2.09	1.92
Ac-ft	165,100	193,200	293,600	407,100	319,000	429,100	560,500	468,200	438,300	232,000	145,900	134,100

Calendar year 1954: Max 32,800 Min 2,170 Mean 5,330 Cfsm 4.07 In. 55.23 Ac-ft 3,859,000
Water year 1954-55: Max 27,600 Min 2,120 Mean 5,230 Cfsm 3.99 In. 54.19 Ac-ft 3,786,000

Peak discharge (base, 24,000 cfs).--Dec. 31 (9 a.m.) 30,600 cfs (9.48 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used June 11 to July 22.

Willamette River at Harrisburg, Oreg.

Location.--Lat 44°16'05", long 123°10'25", in SW¼NE¼ sec. 16, T. 15 S., R. 4 W., on right bank 10 ft downstream from east end of State highway bridge at Harrisburg and at mile 162.9.

Drainage area.--3,420 sq mi, approximately.

Records available.--October 1944 to September 1955. 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.--11 years, 12,620 cfs (9,137,000 acre-ft per year).

Extremes.--Maximum discharge during year, 53,400 cfs Dec. 31 (gage height, 11.27 ft); minimum, 3,200 cfs Dec. 5.

1944-55: 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. 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 Lookout Point Reservoir (see p. 109), Cottage Grove Reservoir (see p. 114), and Dorena Reservoir (see p. 117).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-21		Oct. 22 to Sept. 30			
1.9	3,900	1.5	3,250	7.0	24,800
2.5	5,300	3.0	7,450	11.0	51,000
3.0	6,650	5.0	15,000		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,100	4,990	5,160	44,100	11,700	10,400	23,800	14,600	14,400	9,520	4,610	4,610
2	4,080	4,800	3,820	34,300	*12,000	21,600	23,800	14,000	12,600	9,270	4,550	4,550
3	4,040	4,520	3,620	26,300	10,500	17,200	22,200	13,000	12,300	8,710	4,550	4,500
4	4,020	4,250	3,900	20,000	9,520	13,300	19,000	11,800	12,800	8,500	4,550	4,390
5	4,000	4,080	3,420	17,300	8,820	10,800	17,200	12,000	14,600	8,040	4,610	4,500
6	4,020	4,120	5,540	14,600	8,850	9,410	17,600	12,300	17,300	7,660	4,610	4,360
7	4,040	4,050	10,500	12,800	10,600	8,320	16,800	12,900	19,600	6,850	4,720	4,360
8	4,020	4,000	7,870	11,800	16,200	8,570	17,600	13,600	21,100	6,760	4,690	4,220
9	4,020	*4,000	6,550	12,300	23,400	9,760	18,500	13,400	22,300	6,580	4,720	4,150
10	4,020	3,780	5,860	16,300	18,800	9,300	21,200	12,500	*23,700	6,130	4,720	4,080
11	4,300	4,020	5,300	15,600	14,900	10,800	22,800	12,700	21,800	6,130	4,660	3,900
12	4,820	4,100	5,380	15,100	12,400	12,400	23,200	14,200	19,600	6,130	4,720	3,800
13	5,420	4,690	8,720	14,700	10,900	14,200	32,300	13,600	18,200	5,770	4,660	4,550
14	5,080	4,640	11,900	12,300	9,860	13,600	31,800	13,800	16,300	6,160	4,610	4,770
15	4,580	5,350	9,760	10,400	8,990	11,600	26,400	15,000	14,200	6,190	4,610	4,690
16	4,320	6,580	8,990	12,200	8,500	9,830	24,000	13,700	12,500	5,890	4,640	4,690
17	4,220	11,000	7,870	13,500	8,320	9,100	24,400	12,900	11,400	5,410	4,660	5,180
18	4,200	11,600	6,880	12,500	8,040	*8,500	23,000	12,000	10,500	5,710	4,640	4,640
19	4,280	8,570	6,340	11,100	7,520	8,150	21,600	13,800	9,800	5,590	4,660	4,280
20	5,300	8,290	5,830	10,200	7,210	7,700	22,800	18,300	9,620	*5,050	4,740	4,500
21	5,250	7,520	*5,350	10,200	6,970	7,120	27,300	20,800	10,700	4,800	4,520	4,690
22	8,180	6,760	4,990	11,400	6,670	7,450	31,900	21,600	10,900	4,690	4,520	4,300
23	8,040	6,220	4,740	14,400	6,640	13,400	31,100	19,200	10,800	4,860	4,580	4,250
24	6,850	5,410	5,680	13,500	6,550	16,700	26,000	15,700	10,000	4,990	4,610	4,200
25	6,130	5,470	6,910	12,600	6,850	23,800	22,100	14,000	8,880	5,080	4,610	4,000
26	5,680	5,800	6,880	12,500	6,790	23,400	19,600	13,300	8,710	5,160	4,610	3,920
27	5,590	5,530	6,040	11,400	7,060	21,600	18,100	12,500	8,850	6,190	4,580	4,150
28	5,050	5,440	5,830	10,800	7,120	22,000	16,800	12,600	9,160	7,000	4,500	4,470
29	4,800	5,300	7,730	10,000	-	25,800	*17,100	13,000	9,720	6,130	4,500	4,690
30	5,210	5,200	19,800	9,660	- -	27,200	15,600	14,200	9,660	4,580	4,500	4,830
31	5,130	- -	47,000	10,200	- -	25,100	- - - - -	15,700	- - - - -	4,520	*4,640	- - -
Total	152,790	170,080	254,160	464,060	281,680	438,110	675,600	442,700	412,000	194,050	143,100	132,220
Mean	4,929	5,669	8,199	14,970	10,060	14,130	22,520	14,280	13,730	6,260	4,616	4,407
Ac-ft	303,100	337,300	504,100	920,400	558,700	869,000	‡1,340	878,100	817,200	384,900	283,800	262,300

Calendar year 1954: Max 62,200 Min 3,420 Mean 10,050 Ac-ft 7,274,000
Water year 1954-55: Max 47,000 Min 3,420 Mean 10,300 Ac-ft 7,459,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

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 1955.

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.--20 years, 241 cfs (174,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,560 cfs Dec. 31 (gage height, 11.54 ft); minimum, 13 cfs Sept. 5, 6, 7.
1935-55: Maximum discharge, 5,400 cfs Jan. 28, 1954 (gage height, 18.56 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 22 to June 4)

0.6	14	5.0	481
1.0	34	8.0	902
1.5	73	11.0	1,440
2.0	122		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	30	68	1,010	271	816	587	291	82	49	27	18
2	23	30	67	692	310	958	484	269	80	49	26	*16
3	24	30	63	504	277	693	416	243	78	46	24	15
4	24	30	65	419	261	499	370	241	78	44	22	15
5	26	30	68	473	257	394	332	224	75	44	22	14
6	27	38	271	436	250	334	301	209	70	45	22	14
7	30	46	452	380	267	301	271	197	66	43	22	14
8	33	44	320	333	404	281	266	187	62	43	22	14
9	33	44	277	349	559	259	250	175	59	45	22	14
10	33	43	238	311	421	243	247	163	56	47	20	14
11	36	47	199	278	352	238	486	156	56	42	20	15
12	52	*68	188	245	308	304	651	152	55	38	20	16
13	74	54	349	256	277	369	1,110	147	55	35	20	17
14	49	74	393	263	250	429	769	147	54	32	20	24
15	40	183	349	291	229	384	557	152	55	32	20	28
16	37	195	*289	601	215	*338	547	138	54	33	18	44
17	37	750	239	815	203	307	528	135	52	33	18	34
18	36	516	199	652	187	272	455	127	52	32	18	26
19	44	286	171	474	175	227	420	121	50	*30	17	22
20	63	227	153	380	169	233	481	116	49	30	16	20
21	69	166	141	351	161	220	533	109	47	29	16	20
22	113	131	132	340	157	333	*566	105	46	28	15	18
23	77	106	152	308	152	400	511	102	50	28	15	18
24	54	104	199	287	153	396	445	101	53	29	15	20
25	45	92	272	268	165	368	400	96	50	31	16	18
26	34	97	315	245	177	349	411	101	48	32	16	17
27	33	87	260	*229	193	319	355	97	47	42	16	18
28	30	80	236	215	275	308	331	89	51	35	17	22
29	30	72	248	202	e	426	341	87	51	30	17	23
30	32	69	832	199	------	720	314	86	48	32	15	22
31	32	-----	1,440	206	-----	727	-----	*86	------	30	18	------
Total	1,293	3,769	8,645	12,012	7,075	12,445	13,735	4,649	1,729	1,138	592	588
Mean	41.7	126	279	387	253	401	458	150	57.6	36.7	19.1	19.6
Cfsm	0.474	1.43	3.17	4.40	2.87	4.56	5.20	1.70	0.655	0.417	0.217	0.223
In.	0.55	1.59	3.65	5.08	2.99	5.28	5.80	1.96	0.73	0.48	0.25	0.25
Ac-ft	2,560	7,480	17,150	23,830	14,030	24,680	27,240	9,220	3,430	2,260	1,170	1,170

Calendar year 1954: Max 4,670 Min 20 Mean 284 Cfsm 3.23 In. 43.80 Ac-ft 205,600
Water year 1954-55: Max 1,440 Min 14 Mean 185 Cfsm 2.10 In. 28.59 Ac-ft 134,200

Peak discharge (base, 1,300 cfs).--Dec. 31 (9:30 a.m.) 1,560 cfs (11.54 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 1955.

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.--15 years, 182 cfs (131,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,280 cfs Apr. 13 (gage height, 9.78 ft); minimum, practically no flow Sept. 12-15.
1940-55: 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.

Remarks.--Records good except those below 10 cfs, which are fair. Some small diversions above station for irrigation.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30

0.3	0.4	1.0	30
.4	1.2	2.0	81
.5	2.6	4.0	215
.6	5.4	7.0	485
.7	11		

Dec. 31 to Sept. 30

0.1	0	0.6	5.0	6.0	407
.2	.1	.7	9.4	8.0	688
.3	.4	1.0	30	9.0	940
.4	1.2	2.0	82	10.0	1,420
.5	2.6	4.0	225		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	3.4	21	802	156	513	557	177	24	13	3.4	0.2
2	1.5	3.4	20	505	176	983	410	157	23	12	2.4	*.1
3	1.7	3.0	19	344	154	810	309	140	22	12	1.8	.4
4	1.7	3.0	19	274	145	487	249	123	23	11	1.7	.3
5	1.3	2.8	24	312	149	308	205	106	22	8.2	1.2	.2
6	1.3	3.0	291	278	140	240	174	94	*21	8.2	1.2	.4
7	1.3	3.2	452	233	133	198	149	83	21	8.2	.9	.4
8	1.1	4.5	271	202	194	171	130	75	21	8.2	.7	.3
9	1.1	5.4	227	229	307	149	126	66	20	8.8	1.0	.3
10	1.1	5.4	209	193	265	130	152	60	18	10	1.5	.1
11	1.3	5.9	151	154	219	125	324	56	18	10	1.4	.1
12	1.4	*7.0	128	133	186	161	444	52	16	8.8	1.1	0
13	2.4	11	270	146	158	256	1,170	50	15	7.6	.9	0
14	4.9	18	328	141	137	354	1,100	55	15	6.8	.5	0
15	4.9	34	*261	215	121	347	636	66	15	5.8	.4	0
16	3.6	54	190	656	110	*282	495	54	15	5.8	.6	.1
17	2.8	205	144	922	99	234	510	50	14	5.4	.9	1.2
18	2.4	241	118	714	87	191	394	45	13	4.4	.9	2.6
19	2.8	140	98	426	77	162	350	40	13	*4.4	.9	2.6
20	5.9	105	88	287	70	140	422	34	12	4.4	.8	2.6
21	9.1	70	76	276	66	124	602	32	11	4.4	.4	2.3
22	8.6	51	69	315	62	211	*599	30	11	3.9	.2	2.0
23	11	38	70	260	59	375	481	29	11	2.8	.3	1.7
24	11	30	166	*226	60	450	364	29	12	2.3	.3	1.7
25	8.6	27	286	199	70	412	305	28	13	2.3	.6	1.2
26	6.5	29	362	169	96	322	301	27	11	3.0	.4	1.2
27	4.5	27	269	149	119	260	239	27	11	4.1	.2	1.3
28	3.8	26	225	133	187	259	222	25	11	4.4	.2	1.3
29	3.8	24	207	118	-	382	279	25	14	4.4	.2	1.3
30	3.8	23	468	109	------	632	212	24	14	3.9	.3	1.5
31	3.4	------	871	116	------	696	------	24	------	3.9	.3	------
Total	120.0	1,203.0	6,398	9,236	3,802	10,364	11,910	1,883	480	202.4	27.6	27.4
Mean	3.87	40.1	206	298	136	334	397	60.7	16.0	6.53	0.89	0.91
Ac-ft	238	2,390	12,690	18,320	7,540	20,560	23,620	3,730	952	401	55	54

Calendar year 1954: Max 5,540 Min 0.4 Mean 183 Ac-ft 132,800
Water year 1954-55: Max 1,170 Min 0 Mean 125 Ac-ft 90,550

26.72

Peak discharge (base, 1,600 cfs).--No peak above base.
* 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, not including Amazon Creek basin.

Records available.--October 1941 to September 1955.

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

Extremes.--Maximum contents during year, 101,500 acre-ft May 14 (elevation, 373.53 ft); minimum observed, 3,270 acre-ft Dec. 5, 8, 9 (elevation, 350.0 ft).
1941-55: 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. Beginning in November 1951, most of flow of Amazon Creek has been diverted in SE¼ sec. 29, R. 17 S., R. 4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Cooperation.--Water-stage recorder inspected by employees of Corps of Engineers.

Contents, in acre-feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45,510	12,760	7,380	8,050	8,130	35,800	78,660	100,900	100,700	99,650	96,260	73,980
2	44,180	11,950	7,100	7,220	8,740	38,280	79,450	101,000	100,800	99,460	95,720	73,090
3	42,930	11,180	5,830	7,250	9,620	38,860	79,530	100,900	100,900	99,370	95,270	72,060
4	41,710	10,680	g4,130	7,220	10,740	39,780	79,680	101,100	101,000	99,280	94,730	71,470
5	40,480	10,300	g3,270	7,270	11,780	41,140	80,240	101,200	100,900	99,280	94,100	70,530
6	39,320	10,090	g4,020	7,040	12,870	42,540	80,960	101,200	101,000	99,180	93,390	69,670
7	38,100	9,800	g3,380	7,330	14,000	43,830	81,690	100,900	101,000	99,280	92,600	68,600
8	36,920	9,600	g3,270	7,750	15,660	44,890	82,580	100,700	101,100	99,370	91,720	67,050
9	35,720	9,430	g4,130	7,680	17,800	45,820	83,560	100,900	100,900	99,370	91,190	65,130
10	34,640	9,320	5,390	7,150	19,670	46,820	84,640	101,100	100,800	99,180	90,410	62,770
11	33,540	9,460	6,410	7,070	20,530	47,780	86,220	101,200	100,700	99,090	89,710	60,230
12	32,750	9,460	7,190	7,180	20,760	48,860	87,740	101,200	100,600	99,090	88,940	57,820
13	31,770	9,440	7,640	7,330	21,120	50,980	88,940	101,300	100,500	99,000	88,170	55,490
14	30,610	9,970	7,860	7,470	21,890	52,410	88,600	101,100	100,300	98,820	87,570	53,280
15	29,550	10,530	7,830	7,980	22,740	52,990	89,110	100,400	100,200	98,720	86,810	51,490
16	28,480	11,520	7,480	8,790	23,620	53,760	89,890	100,500	100,200	98,450	86,140	49,410
17	27,370	13,750	7,530	8,940	24,350	54,770	90,580	100,800	100,100	98,360	85,550	47,450
18	26,450	15,660	7,620	8,590	24,930	55,970	91,540	101,000	100,000	98,170	84,880	45,400
19	25,450	16,310	7,540	7,560	25,450	56,830	92,680	101,000	99,920	98,080	84,060	43,380
20	24,440	15,960	7,380	7,320	26,020	57,700	94,460	100,900	99,740	97,900	83,150	41,470
21	23,930	15,390	7,150	7,650	26,480	58,760	95,900	101,100	99,650	97,620	82,580	39,450
22	23,150	14,700	7,210	7,760	26,920	60,160	96,350	100,900	99,740	97,530	81,930	37,480
23	22,130	13,910	7,760	7,450	27,470	62,510	95,990	100,900	99,740	97,350	81,280	35,590
24	21,060	12,980	8,180	7,180	27,920	64,850	96,710	101,000	99,650	97,170	80,640	33,620
25	20,070	12,150	8,270	7,210	28,440	66,920	98,170	101,200	99,650	96,990	79,840	31,700
26	18,970	11,320	8,050	7,180	29,190	68,600	98,260	101,100	99,550	97,170	79,050	29,760
27	17,910	10,490	7,320	7,210	30,160	70,170	97,900	100,900	100,000	96,900	78,190	27,960
28	16,810	9,440	7,040	7,360	31,970	72,130	98,820	100,900	99,920	96,800	77,410	25,920
29	15,810	8,290	7,160	7,440	-	73,980	99,180	100,800	99,740	96,710	76,480	23,870
30	14,720	7,640	9,060	7,480	-------	75,870	99,740	100,700	99,650	96,620	75,640	21,710
31	13,710	-------	9,510	7,780	-------	77,640	-------	100,700	-------	96,440	74,810	-------

g From graph based on gage readings.

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	365.98	46,710	-
Oct. 31	356.65	13,710	-33,000
Nov. 30	353.43	7,640	-6,070
Dec. 31	354.56	9,510	+1,870
Calendar year 1954	-	-	+2,550
Jan. 31	353.52	7,780	-1,730
Feb. 28	362.73	31,970	+24,190
Mar. 31	370.75	77,640	+45,670
Apr. 30	373.34	99,740	+22,100
May 31	373.44	100,700	+960
June 30	373.33	99,650	-1,050
July 31	372.98	96,440	-3,210
Aug. 31	370.38	74,810	-21,630
Sept.30	359.70	21,710	-53,100
Water year 1954-55	-	-	-25,000

† Elevations at 12 p.m.

Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.

Location.--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 2½ miles south of Smithfield.

Drainage area.--252 sq mi, not including Amazon Creek basin.

Records available.--August 1939 to September 1955. 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.--16 years, 540 cfs, adjusted for diversion to Coyote Creek since 1943 (390,900 acre-ft per year).

Extremes.--Maximum discharge during year, 3,170 cfs Dec. 31; minimum daily, 41 cfs June 21-24.
1939-55: 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 4-inch concrete pipe 600 ft long, record for which is based on daily staff-gage readings and occasional measurements. The diversion is several hundred feet upstream and point of return to Long Tom River about 2½ miles downstream. Fern Ridge Dam, 1,000 ft above station, was completed in 1941, and has regulated flow since Nov. 13, 1941 (see preceding page). Discharge not adjusted for storage or release from Fern Ridge Dam as evaporation from reservoir at times exceeds natural flow and diversions, and beginning in November 1951 most of flow of Amazon Creek has been diverted in SE¼ sec. 29, T. 17 S., R. 4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Revisions (water years).--WSP 1248: 1940-41, 1948.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	624	489	224	3,060	470	59	969	60	65	45	49	380
2	616	404	227	2,240	396	974	969	416	60	43	120	380
3	617	399	609	1,260	191	1,570	913	547	62	43	185	375
4	610	274	726	1,130	79	873	689	278	69	43	214	375
5	611	205	474	1,190	65	325	450	288	69	43	300	375
6	611	205	632	1,110	65	119	249	346	69	43	295	370
7	610	202	1,350	777	50	61	108	428	69	43	295	486
8	604	*199	949	624	46	*62	62	374	69	44	295	708
9	604	137	343	912	47	62	62	167	69	43	295	*899
10	598	97	91	980	53	60	62	109	58	43	295	1,140
11	598	95	92	650	335	60	713	188	53	43	295	1,180
12	598	91	234	507	535	60	1,390	202	52	46	295	1,180
13	592	90	710	513	391	61	1,910	206	52	47	296	1,160
14	592	91	890	513	127	511	2,470	453	52	48	296	1,050
15	586	93	861	695	50	728	1,470	552	52	48	296	1,010
16	579	93	791	1,410	56	455	1,140	192	52	49	296	1,010
17	567	97	*507	1,850	55	214	1,030	66	50	51	292	998
18	561	98	395	1,850	55	56	682	65	50	53	288	991
19	556	387	395	1,730	55	58	566	123	50	*52	283	983
20	556	609	395	1,100	55	58	*663	156	46	52	278	976
21	562	609	380	840	55	58	1,080	92	41	52	282	955
22	556	573	255	911	55	60	1,340	213	41	52	278	948
23	586	585	189	903	55	60	1,330	108	41	52	279	927
24	592	591	408	*839	53	60	672	71	41	50	278	948
25	556	567	911	611	56	60	361	69	45	50	278	955
26	567	561	1,100	575	58	60	913	152	45	50	313	941
27	561	533	1,090	501	58	60	857	176	45	49	379	927
28	555	609	805	406	58	60	462	123	46	48	379	971
29	549	629	677	406	-	326	656	120	46	47	379	985
30	543	397	1,010	408	----	754	368	120	45	48	379	970
31	538	- -	1,940	406	---	989	------	*86	------	49	380	--- ---
Total	18,055	10,009	19,660	30,905	3,624	8,953	24,606	6,546	1,604	1,469	8,862	25,553
Mean	582	334	634	997	129	289	820	211	53.5	47.4	286	852
Ac-ft	35,810	19,850	39,000	61,300	7,190	17,760	48,810	12,980	3,180	2,910	17,580	50,680

Calendar year 1954: Max 3,980 Min 36 Mean 625 Ac-ft 452,400
Water year 1954-55: Max 3,060 Min 41 Mean 438 Ac-ft 317,000

* Discharge measurement made on this day.

Amazon Creek near Eugene, Oreg.

Location.--Lat 44°03'40", long 123°11'40", in SE¼ sec. 29, T. 17 S., R. 4 W., on right bank 250 ft upstream from diversion structure and 5 miles west of Eugene.

Drainage area.--21.3 sq mi.

Records available.--October 1954 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 372.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 722 cfs Apr. 12 (gage height, 5.96 ft); no flow Oct. 1-10.

Remarks.--Records good above 10 cfs and fair below. During summer and fall natural flow (if any) may be augmented slightly by return flow from irrigation in and below the city of Eugene. Records include diversion at station to Fern Ridge Reservoir; diversion in 1955 water year amounted to 11,660 acre-ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*0	0.1	2.9	61	32	213	66	21	1.6	1.0	0.5	0.2
2	0	.1	2.1	33	25	*151	45	15	1.6	1.1	.4	*.1
3	0	.1	1.7	22	14	58	34	*13	1.6	1.0	.4	.1
4	0	.1	2.9	37	16	36	25	11	2.7	.8	.3	.1
5	0	.1	17	72	18	21	16	8.7	1.9	.8	.3	.1
6	0	.1	133	30	22	15	13	5.7	1.4	.9	.3	.1
7	0	.6	52	19	14	13	10	4.1	1.3	1.0	.3	.1
8	0	.5	18	16	63	10	6.6	2.0	1.2	1.1	.4	.1
9	0	.9	35	49	37	8.3	27	1.0	1.2	4.2	.4	.1
10	0	.8	16	22	20	6.3	34	.9	1.1	5.0	.4	.1
11	.2	.3	10	13	15	12	184	.9	1.1	4.2	.5	.1
12	1.9	.8	19	8.9	13	32	260	.9	1.1	3.8	.5	.1
13	3.8	.7	69	19	9.5	88	174	1.0	1.0	3.1	.5	.1
14	.6	.8	30	14	8.4	58	124	7.5	1.0	2.4	.4	.2
15	.4	*9.1	34	106	7.4	33	56	24	1.0	1.8	.4	.3
16	.3	11	*16	192	7.4	*22	96	15	1.1	1.5	.4	.3
17	.3	102	6.3	76	6.3	16	56	11	1.0	1.3	.3	.4
18	*.3	19	3.8	40	5.6	11	37	4.9	1.0	1.0	.3	.3
19	5.8	25	1.7	25	4.3	8.9	47	1.8	1.0	*.9	.3	.2
20	9.8	8.4	1.5	25	4.0	6.8	129	1.4	1.0	.8	.2	.2
21	1.8	6.5	.4	59	4.0	5.6	119	1.3	1.0	.8	.3	.2
22	12	5.4	.4	78	4.0	48	*78	1.3	1.0	.7	.2	.1
23	11	4.7	1.9	32	4.0	64	42	1.3	1.2	.7	.2	.2
24	2.8	4.0	54	*25	5.1	69	26	1.4	1.3	.7	.2	.2
25	.6	5.1	71	21	6.3	45	24	1.5	1.2	.8	.2	.1
26	.2	5.4	41	16	38	28	23	1.5	1.1	.8	.2	.1
27	.2	5.1	16	13	32	20	21	1.6	1.1	1.0	.2	.1
28	.1	4.7	27	9.9	*75	41	46	1.6	3.8	.9	.2	.4
29	.1	4.0	17	8.8	-	132	71	1.6	2.7	.8	.2	.6
30	.1	3.7	140	9.9	------	139	30	1.6	1.1	.7	.2	.3
31	.1	-----	72	14	-----	62	------	*1.6	------	.6	.2	------
Total	52.4	229.1	912.6	1,166.5	510.3	1,472.9	1,919.6	167.1	41.4	46.2	9.8	5.6
Mean	1.69	7.64	29.4	37.6	18.2	47.5	64.0	5.39	1.38	1.49	0.32	0.19
Cfsm	0.079	0.359	1.38	1.77	0.854	2.23	3.00	0.253	0.065	0.070	0.015	0.0089
In.	0.09	0.40	1.59	2.04	0.89	2.57	3.35	0.29	0.07	0.08	0.02	0.01
Ac-ft	104	454	1,810	2,310	1,010	2,920	3,810	331	82	92	19	11

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 260 Min 0 Mean 17.9 Cfsm 0.840 In. 11.40 Ac-ft 12,950

Peak discharge (base, 400 cfs).--Apr. 12 (6 p.m.) 722 cfs (5.96 ft).
* 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 1955 (1925-27 incomplete). Prior to October 1930, published as "near Monroe."

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.--32 years (1921-25, 1927-55), 758 cfs (548,800 acre-ft per year).

Extremes.--Maximum discharge during year, 4,670 cfs Jan. 1 (gage height, 7.74 ft); minimum, 43 cfs July 30.
1920-55: 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.

Remarks.--Records excellent. A few small diversions above station. Flow regulated by Fern Ridge Reservoir beginning Nov. 13, 1941 (see p. 134). In 1943 and 1944 river channel was improved from outlet of Fern Ridge Reservoir to a point below Monroe.

Cooperation.--Water-stage recorder inspected by employee of Corps of Engineers.

Revisions (water years).--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). WSP 1288: 1952 (yearly runoff only).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17		Nov. 18 to Sept. 30			
4.3	72	4.2	34	5.5	1,030
4.6	205	4.4	100	6.5	2,420
5.0	470	4.6	190	7.7	4,590
5.3	730	4.9	420		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	613	502	258	4,510	690	920	1,670	314	108	64	52	393
2	613	398	250	3,570	730	1,450	1,580	*516	96	64	71	393
3	604	390	516	*2,090	520	2,690	1,480	865	93	61	*175	393
4	604	327	898	1,740	290	1,610	1,200	580	96	58	180	393
5	604	195	780	2,120	258	839	865	429	100	58	282	384
6	604	200	901	1,900	258	411	580	540	96	61	282	384
7	604	205	1,940	1,390	*266	258	357	580	100	61	282	456
8	*604	200	1,750	1,100	505	238	226	590	96	61	282	720
9	604	165	1,060	1,470	600	220	220	402	93	61	282	964
10	604	106	393	1,600	402	208	238	170	89	61	282	1,220
11	604	106	290	1,160	508	208	1,200	282	78	58	282	1,340
12	613	110	353	865	865	306	2,640	282	75	58	274	1,340
13	613	110	1,390	898	760	483	3,500	306	*71	58	282	1,340
14	595	128	1,680	876	411	942	3,930	454	71	55	282	1,270
15	568	175	1,510	1,140	220	1,270	2,780	810	71	55	282	1,150
16	568	190	1,250	2,570	214	975	1,960	447	71	55	274	1,160
17	568	676	975	3,200	202	590	1,880	160	68	55	274	1,130
18	559	570	670	2,740	180	274	1,340	145	71	55	274	1,120
19	568	*552	650	2,470	170	232	1,080	140	68	55	266	*1,120
20	559	909	630	1,840	160	214	1,290	258	64	52	266	1,110
21	568	843	600	1,190	155	*202	2,030	132	58	49	266	1,100
22	577	770	510	1,410	155	358	2,240	214	58	49	266	1,100
23	577	750	357	1,320	150	510	2,260	208	64	46	266	1,070
24	595	740	728	*1,190	150	483	1,410	120	64	46	266	1,080
25	568	730	1,650	942	160	438	750	116	68	46	274	1,110
26	577	720	1,910	800	180	357	1,300	140	68	52	282	1,100
27	568	680	1,680	720	214	298	1,500	232	64	55	402	1,080
28	559	690	1,430	550	314	314	832	160	71	52	402	1,110
29	550	760	1,160	540	-	730	1,160	155	68	49	393	1,140
30	542	628	2,440	540	------	1,720	920	150	64	49	393	1,120
31	534	------	3,230	550	------	1,860	------	140	------	52	402	------
Total	18,088	13,525	33,839	49,001	9,687	21,608	44,418	10,037	2,322	1,711	8,538	28,790
Mean	583	451	1,092	1,581	346	697	1,481	324	77.4	55.2	275	960
Ac-ft	35,880	26,830	67,190	97,190	19,210	42,860	88,100	19,910	4,610	3,390	16,930	57,100

Calendar year 1954: Max 5,810 Min 30 Mean 903 Ac-ft 653,500
Water year 1954-55: Max 4,510 Min 46 Mean 662 Ac-ft 479,100

*Discharge measurement made on this day.

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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 downstream 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 1955.

Gage.--Wire-weight gage read twice daily, oftener during floods. Altitude of gage is 218 ft (by barometer).

Average discharge.--15 years, 464 cfs (335,900 acre-ft per year).

Extremes.--Maximum discharge observed, 3,670 cfs Dec. 31 (gage height, 18.0 ft); minimum, observed, 12 cfs Sept. 6-8.
1940-55: Maximum discharge, 8,250 cfs Dec. 15, 1946 (gage height, 20.67 ft, from floodmark); maximum gage height, 20.8 ft Jan. 18, 1953, from graph based on gage readings; minimum discharge observed, 4.7 cfs Oct. 15, 1952.

Remarks.--Records good. Records include flow of Evergreen 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.--WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris July 4 to Sept. 30)

1.9	12	7.0	600
2.1	18	10.0	1,150
2.8	49	15.0	2,500
3.8	128	18.0	3,670
5.0	270		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	45	166	3,130	618	1,690	1,490	612	153	76	28	16
2	24	44	154	2,260	652	2,130	1,250	*555	144	81	*27	15
3	22	43	148	1,610	612	1,610	1,070	510	142	74	25	14
4	22	41	145	1,210	586	1,200	961	461	137	65	25	14
5	22	42	149	1,190	578	917	834	420	129	62	24	13
6	22	59	811	1,000	589	761	738	388	128	60	22	12
7	24	66	1,420	881	*940	672	666	361	109	58	22	12
8	22	62	957	780	1,560	608	603	332	113	63	20	12
9	22	59	761	777	1,640	546	553	315	104	63	20	13
10	26	61	618	657	1,300	512	532	297	100	60	21	14
11	*24	81	497	589	1,030	550	826	287	97	57	20	16
12	40	158	442	524	853	858	1,530	276	97	51	20	14
13	63	157	750	708	728	1,030	2,450	270	94	49	21	16
14	56	213	732	684	645	1,060	1,900	264	*94	45	20	29
15	40	326	841	741	578	982	1,400	266	93	42	18	22
16	36	808	728	1,190	517	845	1,280	245	90	44	18	57
17	30	2,130	630	1,460	460	738	1,130	230	86	42	18	45
18	31	1,400	548	1,220	409	666	982	218	84	40	17	35
19	45	*1,000	467	969	372	608	887	206	78	38	16	*30
20	72	708	396	818	326	542	854	206	77	37	15	26
21	130	544	358	735	318	*488	849	177	74	35	15	22
22	245	410	322	696	304	938	917	187	70	34	15	21
23	195	334	350	630	295	1,210	927	182	70	32	14	21
24	137	287	586	591	298	1,140	837	168	70	32	14	20
25	95	263	756	551	366	1,010	758	168	71	32	14	19
26	76	259	672	510	385	894	849	168	69	34	14	18
27	68	237	591	467	407	796	754	168	68	36	15	19
28	59	216	*582	431	645	729	723	158	78	37	15	28
29	53	189	660	401	-	1,130	747	152	82	34	15	24
30	50	178	2,150	401	------	1,970	672	152	75	32	14	26
31	45	-----	3,520	415	-----	1,800	-----	158	------	30	16	------
Total	1,820	10,420	21,907	28,226	16,031	30,630	29,969	8,557	2,876	1,475	578	643
Mean	58.7	347	707	911	644	988	999	276	95.9	47.6	18.6	21.4
Cfsm	0.369	2.18	4.45	5.73	4.05	6.21	6.28	1.74	0.603	0.299	0.117	0.135
In.	0.43	2.44	5.12	6.60	4.22	7.16	7.01	2.00	0.67	0.35	0.14	0.15
Ac-ft	3,610	20,670	43,450	55,990	35,760	60,750	59,440	16,970	5,700	2,930	1,150	1,280

Calendar year 1954: Max 4,880 Min 20 Mean 510 Cfsm 3.21 In. 43.54 Ac-ft 369,200
Water year 1954-55: Max 3,520 Min 12 Mean 425 Cfsm 2.67 In. 36.29 Ac-ft 307,700

Peak discharge (base, 2,500 cfs).--Dec. 31 (11 a.m.) 3,670 cfs (18.0 ft); Apr. 13 (about 4 a.m.) 2,600 cfs (15.3 ft).
* Discharge measurement made on this day.

Calapooya River at Holley, Oreg.

Location.--Lat 44°21'05", long 122°47'10", 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 1955.

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.--20 years, 439 cfs (317,800 acre-ft per year).

Extremes.--Maximum discharge during year, 4,450 cfs Dec. 30 (gage height, 7.40 ft, from graph based on gage readings); minimum, 35 cfs Sept. 5, 6, 8, 9.
1935-55: 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. Diversions for irrigation of about 150 acres 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).--WSP 1044: 1943. WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.7	29	3.0	710
1.1	65	4.0	1,370
1.5	130	6.0	3,050
2.0	270	7.0	4,050

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	90	178	2,920	582	710	1,290	666	353	170	65	38
2	41	84	168	1,800	492	890	1,100	635	305	203	61	37
3	41	81	158	1,260	443	560	942	582	345	166	58	37
4	41	78	153	1,020	393	461	842	*560	393	146	57	36
5	43	75	192	*854	417	377	734	645	425	128	*56	35
6	45	84	770	710	417	345	699	752	456	130	54	35
7	45	78	605	596	890	337	746	758	470	122	52	36
8	45	78	470	538	1,410	461	842	782	479	137	52	35
9	43	88	393	515	1,400	452	988	694	479	126	50	35
10	50	84	345	448	*896	417	1,140	635	461	118	50	37
11	65	78	309	409	746	630	1,120	758	401	107	49	37
12	166	96	359	353	605	770	1,440	758	329	100	49	37
13	*153	110	830	409	524	688	1,890	645	284	96	49	46
14	107	142	728	369	470	582	1,370	582	237	93	48	74
15	81	218	770	448	425	506	1,050	560	*206	90	47	60
16	75	470	582	524	385	448	1,050	528	184	88	47	124
17	86	1,230	470	506	377	401	994	515	173	88	47	105
18	65	655	425	448	345	385	818	551	158	82	45	81
19	206	551	377	405	325	361	794	758	153	77	45	62
20	200	497	337	353	298	369	884	860	153	74	44	53
21	244	385	305	337	270	345	1,160	710	153	72	44	50
22	605	321	277	515	257	780	1,880	582	153	66	43	44
23	305	284	291	582	244	800	1,490	524	158	69	43	44
24	244	237	393	515	237	*1,300	1,240	456	148	66	41	42
25	200	212	385	515	263	1,500	1,000	417	130	66	41	41
26	158	*237	345	506	244	1,310	916	393	120	87	41	*40
27	137	260	353	461	257	1,200	776	417	116	112	40	40
28	122	237	425	434	244	1,490	682	389	176	82	40	68
29	110	212	790	452	-	1,800	722	417	218	70	39	53
30	100	195	3,180	461	------	1,620	688	417	170	68	39	53
31	96	-----	3,650	538	------	1,320	-----	393	------	65	39	------
Total	3,959	7,447	19,013	20,201	13,856	23,615	31,287	18,339	7,986	3,164	1,475	1,515
Mean	128	248	613	652	495	762	1,043	592	266	102	47.6	50.5
Cfsm	1.22	2.36	5.84	6.21	4.71	7.26	9.93	5.64	2.53	0.971	0.453	0.481
In.	1.40	2.64	6.73	7.16	4.91	8.36	11.08	6.50	2.83	1.12	0.52	0.54
Ac-ft	7,850	14,770	37,710	40,070	27,480	46,840	62,060	36,370	15,840	6,280	2,930	3,000

Calendar year 1954: Max 7,000 Min 40 Mean 410 Cfsm 3.90 In. 52.98 Ac-ft 296,700
Water year 1954-55: Max 3,650 Min 35 Mean 416 Cfsm 3.96 In. 53.79 Ac-ft 301,200

Peak discharge (base, 2,600 cfs).--Dec. 30 (about 11 p.m.) 4,450 cfs (7.40 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 1955.

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.--15 years, 909 cfs (658,100 acre-ft per year).

Extremes.--Maximum discharge during year, 6,380 cfs Jan. 1 (gage height, 15.08 ft); minimum, 19 cfs Aug. 26.
1940-55: 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, 4 cfs Oct. 7, 1952; minimum daily, 6 cfs Aug. 14, 21, 28, Sept. 18, 1951, Sept. 30, 1952.

Remarks.--Records good. A few small diversions above station for irrigation. Diurnal fluctuation caused by ponds at flour mills near Shedd.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Nov. 13-23)

1.2	18	4.0	430
1.6	39	6.0	1,050
2.0	72	9.0	2,260
2.5	127	12.0	3,870
3.0	205	15.0	6,300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	135	368	5,900	1,070	1,790	2,520	1,060	420	197	70	39
2	51	110	330	5,380	1,020	2,820	2,460	970	385	195	*74	34
3	54	113	305	3,690	786	2,560	2,150	868	368	225	78	28
4	30	102	295	2,120	690	1,500	1,750	*780	395	195	77	42
5	67	100	281	1,820	741	980	1,380	738	435	173	75	23
6	48	103	975	1,990	777	762	1,160	798	458	156	68	23
7	42	134	2,690	1,390	*878	675	1,020	858	452	152	68	30
8	*42	113	2,000	1,100	1,310	642	1,020	834	465	155	51	32
9	38	110	1,150	1,370	2,390	681	1,040	834	475	152	78	29
10	33	117	1,220	1,320	2,240	663	1,450	732	465	144	68	28
11	33	121	804	896	1,400	696	1,890	702	440	131	54	22
12	70	123	660	744	1,080	952	2,700	786	385	127	56	22
13	102	152	1,900	726	892	1,490	4,190	783	350	108	51	35
14	205	207	2,570	966	786	1,800	4,920	708	305	113	63	27
15	115	245	1,970	875	699	1,310	3,940	1,300	*281	110	27	34
16	110	408	1,800	1,940	642	945	2,260	1,120	245	103	69	68
17	94	990	1,190	2,400	642	768	2,100	780	241	a100	43	79
18	80	2,500	878	1,530	600	666	1,800	708	170	a100	42	125
19	101	*1,910	738	1,030	540	612	1,510	708	185	a95	42	103
20	107	1,370	666	804	475	549	1,680	847	187	a90	43	87
21	209	889	600	777	450	*513	2,460	896	179	a85	46	77
22	269	654	555	1,000	420	830	3,090	747	176	83	25	68
23	624	546	543	1,220	405	2,300	3,510	636	174	82	61	58
24	420	486	1,160	1,020	380	2,120	2,850	573	178	80	37	42
25	283	450	2,600	889	412	2,350	2,040	510	170	72	34	62
26	257	630	2,900	861	480	2,470	1,750	475	155	85	26	28
27	176	519	1,410	768	750	1,840	1,590	465	152	95	34	*61
28	173	534	994	714	732	1,730	1,220	458	149	121	51	44
29	162	468	*1,280	708	-	2,420	1,330	430	179	114	25	40
30	144	400	2,040	684	------	3,550	1,320	465	249	96	32	53
31	135	-----	3,920	704	------	3,450	-----	465	------	104	33	------
Total	4,321	14,739	40,792	47,336	23,687	46,434	64,100	23,034	8,868	3,838	1,601	1,443
Mean	139	491	1,316	1,527	846	1,498	2,137	743	296	124	51.6	48.1
Cfsm	0.374	1.32	3.54	4.10	2.27	4.03	5.74	2.00	0.796	0.333	0.139	0.129
In.	0.43	1.47	4.08	4.73	2.37	4.64	6.41	2.30	0.89	0.38	0.16	0.14
Ac-ft	8,570	29,230	80,910	93,890	46,980	92,100	127,100	45,690	17,590	7,610	3,180	2,860

Calendar year 1954: Max 16,000 Min 26 Mean 886 Cfsm 2.38 In. 32.32 Ac-ft 641,300
Water year 1954-55: Max 5,900 Min 22 Mean 768 Cfsm 2.06 In. 28.00 Ac-ft 555,700

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

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 1955.

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 a quarter of a mile upstream at same datum. Sept. 27, 1906, to Nov. 14, 1934, staff gage 300 ft upstream at same datum.

Average discharge.--60 years (1895-1955), 14,050 cfs (10,170,000 acre-ft per year).

Extremes.--Maximum discharge during year, 62,200 cfs Jan. 1 (gage height, 14.62 ft); minimum, 4,400 cfs Nov. 10.
1878-82, 1892-1955: 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).

Remarks.--Records good. Flow regulated at times by Lookout Point, Cottage Grove, Fern Ridge and Dorena Reservoirs (see p. 109, 114, 134, 117). Albany power canal diverts water from South Santiam River into Willamette River above station; small diversions for irrigation.

Revisions (water years).--WSP 694: Drainage area. WSP 904: 1939. WSP 964: 1881, 1890, 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927, 1932(M). WSP 984: 1916. WSP 1248: 1895, 1902, 1907, 1915(M), 1917(M), 1918-19, 1934(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-22)

-0.5	4,400	6.0	23,600
0	5,400	10.0	40,100
2.0	10,100	15.0	64,100

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,980	5,780	6,240	59,400	14,300	13,200	33,400	19,300	15,900	9,880	4,920	*5,040
2	4,940	5,560	5,800	58,800	*15,900	23,800	32,100	17,900	14,100	10,100	4,920	4,960
3	4,900	5,340	5,040	45,200	14,500	30,000	30,500	17,100	12,900	9,550	4,980	4,900
4	4,840	5,160	5,480	33,000	12,500	23,400	27,200	15,600	13,100	9,220	4,980	4,800
5	4,880	4,900	5,580	27,000	11,500	17,900	23,300	14,300	13,900	8,800	4,960	4,800
6	4,840	4,800	6,780	24,500	11,100	14,000	21,900	14,500	16,700	8,500	5,020	4,800
7	4,860	4,820	15,000	21,000	11,800	11,800	20,900	15,100	18,900	7,680	5,000	4,760
8	4,840	4,740	16,300	18,100	17,600	10,800	20,500	15,700	20,900	7,220	5,060	4,840
9	4,880	4,660	12,200	17,400	25,900	11,500	20,900	15,900	22,000	7,120	5,060	4,940
10	4,880	*4,580	10,400	20,200	28,000	11,800	22,700	14,600	*23,300	6,700	5,120	5,060
11	4,960	4,680	8,850	21,000	22,000	11,700	26,500	14,100	23,700	6,400	5,040	5,180
12	5,380	4,800	8,120	19,300	18,400	14,700	31,400	15,300	21,300	6,580	5,040	4,980
13	5,840	5,180	10,600	19,000	g15,900	17,900	39,200	16,000	19,700	6,200	5,080	5,260
14	6,260	5,580	17,800	18,200	g14,200	19,900	47,200	15,500	18,300	6,240	5,020	5,880
15	5,700	5,980	17,400	15,600	g12,200	18,600	43,300	17,300	16,000	6,480	5,000	5,900
16	5,400	7,250	15,300	18,500	g10,400	15,900	34,400	17,100	14,100	6,320	5,020	5,900
17	5,160	11,600	12,900	23,900	g10,100	13,200	32,300	15,200	12,600	6,000	5,000	6,140
18	5,120	18,600	10,800	22,500	g9,850	*11,800	30,800	14,200	11,500	5,680	5,080	6,180
19	5,200	15,200	9,580	19,700	g9,350	10,800	28,200	13,800	10,800	6,220	5,000	5,720
20	5,360	12,800	8,880	16,900	g8,850	10,100	27,600	17,800	9,920	5,640	5,020	5,460
21	6,340	11,400	8,150	14,900	g8,600	9,420	31,700	21,100	10,600	*5,300	5,020	5,860
22	6,680	9,800	7,600	15,500	g8,100	9,800	37,100	22,700	11,200	5,080	4,860	5,540
23	9,150	8,820	7,180	18,100	g7,850	15,800	41,300	21,900	11,400	5,020	4,940	5,340
24	8,200	7,980	8,550	18,900	g7,850	20,200	37,000	18,900	11,000	5,080	4,960	5,340
25	7,250	7,500	13,600	17,200	7,920	25,700	30,400	16,200	9,980	5,260	4,960	5,260
26	6,620	7,750	16,100	16,500	8,300	29,400	26,500	14,800	9,320	5,380	4,940	5,040
27	6,260	7,600	13,300	15,400	8,780	27,300	g24,500	14,000	9,100	5,780	5,000	5,140
28	6,080	7,320	11,400	14,100	9,300	25,700	g22,200	13,400	9,700	6,980	5,000	5,400
29	5,700	7,180	11,600	13,100	-	29,200	*g21,600	13,600	9,720	7,220	4,860	5,620
30	5,760	6,750	17,500	12,300	------	36,300	21,700	14,500	10,400	5,700	4,840	5,740
31	5,940	------	40,000	12,300	------	37,100	------	16,000	------	5,000	4,980	------
Total	177,200	224,110	364,030	687,500	361,050	578,720	888,300	503,400	432,040	208,330	154,680	159,780
Mean	5,716	7,470	11,740	22,180	12,890	18,670	29,610	16,240	14,400	6,720	4,990	5,326
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	351,500	444,500	722,000	‡1,364	716,100	‡1,148	‡1,762	998,500	856,900	413,200	306,800	316,900

Calendar year 1954: Max 91,700 Min 4,480 Mean 13,520 Cfsm 2.79 In. 37.93 Ac-ft 9,790,000
Water year 1954-55: Max 59,400 Min 4,580 Mean 12,980 Cfsm 2.68 In. 36.42 Ac-ft 9,400,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
g Computed from once-daily Telemark readings.

North Santiam River below Boulder Creek, near Detroit, Oreg.

Location.--Lat 44°42'25", long 122°06'00", in SE¼NW¼ sec. 17, T. 10 S., R. 6 E., on right bank half a mile downstream from Boulder Creek and 3 miles southeast of Detroit.

Drainage area.--216 sq mi.

Records available.--January 1907 to October 1909, October 1928 to September 1955. Prior to October 1952, published as North Santiam River at Detroit.

Gage.--Water-stage recorder. Datum of gage is 1,590.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Jan. 24, 1907, to Oct. 31, 1909, staff gage at site 1 3/4 miles downstream at different datum. Oct. 1, 1928, to June 30, 1932, staff gage at site 2½ miles downstream at different datum. July 1932 to Sept. 30, 1952, water-stage recorder at site 2¼ miles downstream at datum 114.39 ft lower.

Average discharge.--29 years (1907-9, 1928-55), 984 cfs (712,400 acre-ft per year).

Extremes.--Maximum discharge during year, 4,470 cfs June 9 (gage height, 5.71 ft); minimum, 431 cfs Sept. 27.
1907-9, 1928-55: Maximum discharge, 20,300 cfs Dec. 28, 1945 (gage height, 11.24 ft, site and datum then in use); minimum, 250 cfs Sept. 13, 1909 (gage height, 0.40 ft, site and datum then in use).

Remarks.--Records excellent except those for period of shifting control, which are good. No diversion above station; slight diurnal fluctuation caused by powerplant at Idanha. Records of water temperature for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 814: Drainage area. WSP 1248: 1931.

Rating tables, water year 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 8		Feb. 9 to Sept. 30			
2.5	480	2.5	420	4.0	1,690
3.0	790	3.0	740	5.0	3,100
4.0	1,720	3.5	1,150	6.0	5,100
5.0	3,100				

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	508	579	590	1,920	727	684	1,100	975	1,630	1,480	684	481
2	502	568	584	1,530	713	656	1,050	975	1,480	1,360	663	487
3	502	568	584	1,300	699	628	975	967	1,570	1,340	642	487
4	502	557	579	1,160	692	600	*919	1,000	1,860	1,260	621	487
5	502	552	584	1,040	699	574	903	1,140	2,230	*1,180	621	481
6	508	557	776	956	727	580	911	1,300	2,640	1,150	607	481
7	518	557	720	916	1,050	587	959	1,420	2,900	1,120	607	481
8	518	562	713	868	1,390	594	1,050	1,540	3,290	1,110	*607	475
9	508	568	699	839	1,370	600	1,260	1,530	3,990	1,100	594	470
10	546	552	692	*790	1,160	614	1,500	1,610	4,070	1,050	587	470
11	602	552	685	762	1,030	642	1,440	1,950	3,730	1,040	580	470
12	678	590	706	734	959	663	1,460	2,110	3,350	1,060	574	464
13	638	574	776	755	895	649	1,560	1,860	2,830	1,120	568	*475
14	579	596	769	720	839	621	1,350	1,610	2,360	1,170	554	517
15	557	638	804	720	*815	600	1,190	1,470	2,060	1,160	548	568
16	546	755	769	713	800	580	1,140	*1,380	1,810	1,100	542	656
17	568	1,330	734	685	778	574	1,040	1,370	1,700	975	535	561
18	546	1,200	713	664	740	568	967	1,590	1,690	919	535	511
19	657	1,180	699	650	726	568	935	2,200	1,710	887	529	481
20	699	1,060	678	644	705	548	927	2,890	1,790	847	523	470
21	884	940	685	638	691	542	1,040	2,710	1,940	815	523	458
22	*1,110	868	699	657	677	635	1,240	2,320	1,930	808	517	453
23	900	*825	769	678	663	621	1,210	2,030	1,800	800	511	464
24	790	762	832	657	670	698	1,130	1,790	1,610	785	505	458
25	727	762	790	664	649	800	1,090	1,680	1,500	748	505	442
26	685	720	769	650	642	847	1,030	1,650	1,450	762	499	436
27	644	748	734	644	621	815	951	1,680	1,440	778	493	448
28	632	706	734	644	628	895	919	1,740	1,580	719	487	487
29	614	650	762	644	-	1,210	927	1,950	1,530	705	487	464
30	596	620	1,280	650	------	1,170	935	2,100	1,420	705	487	453
31	584	-----	2,320	699	------	1,070	-----	1,880	------	698	487	------
Total	19,350	21,696	24,228	25,591	22,755	21,433	33,108	52,417	64,890	30,751	17,222	14,536
Mean	624	723	782	826	813	691	1,104	1,691	2,163	992	556	485
Cfsm	2.89	3.35	3.62	3.82	3.76	3.20	5.11	7.83	10.0	4.59	2.57	2.25
In.	3.33	3.74	4.17	4.41	3.92	3.69	5.70	9.02	11.17	5.29	2.97	2.50
Ac-ft	38,380	43,030	48,060	50,760	45,130	42,510	65,670	104,000	128,700	60,990	34,160	28,830

Calendar year 1954: Max 2,580 Min 502 Mean 1,065 Cfsm 4.93 In. 66.90 Ac-ft 770,800
Water year 1954-55: Max 4,070 Min 436 Mean 953 Cfsm 4.41 In. 59.91 Ac-ft 690,200

Peak discharge (base, 3,200 cfs).--June 9 (9 p.m.) 4,470 cfs (5.71 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Apr. 10 to June 8.

Breitenbush River above Canyon Creek, near Detroit, Oreg.

Location.--Lat 44°45'10", long 122°07'40", in SE¼NE¼ sec. 36, T. 9 S., R. 5 E., on left bank 600 ft upstream from Canyon Creek and 1½ miles northeast of Detroit.

Drainage area.--106 sq mi.

Records available.--June 1932 to September 1955. Prior to Oct. 1, 1952, published as "above French Creek, near Detroit."

Gage.--Water-stage recorder. Datum of gage is 1,573.10 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1952, at site 0.2 mile downstream at datum 13.46 ft lower.

Average discharge.--23 years, 560 cfs (405,400 acre-ft per year).

Extremes.--Maximum discharge during year, 3,070 cfs Dec. 30 (gage height, 6.72 ft); minimum, 146 cfs Oct. 6, 7, Sept. 11.
1932-55: Maximum discharge, 11,600 cfs Dec. 28, 1945 (gage height, 11.86 ft, site and datum then in use); minimum, 87 cfs Sept. 2, 1940 (gage height, 0.36 ft, site and datum then in use).

Remarks.--Records good. No diversion or regulation above station. Records of water temperature for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1044: 1943(M). WSP 1248: 1947.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.7	146	4.0	605
3.0	215	5.0	1,320
3.5	370	7.0	3,400

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	218	329	1,520	442	335	714	627	897	666	329	163
2	152	212	314	1,020	394	320	660	590	799	600	305	161
3	150	205	305	778	360	296	580	565	890	545	284	159
4	150	200	293	605	346	275	*525	610	1,170	515	266	156
5	148	198	299	555	346	263	495	799	1,510	*500	266	154
6	146	208	455	490	382	260	525	946	1,780	480	260	154
7	150	198	424	446	1,060	272	627	1,020	1,960	480	257	152
8	154	200	378	410	1,580	296	752	1,130	2,240	510	*251	154
9	148	202	356	390	1,170	311	939	1,050	2,590	505	239	152
10	185	192	335	*363	827	329	1,090	1,130	2,480	480	227	150
11	278	192	314	335	660	374	939	1,510	2,150	490	224	150
12	428	218	329	326	560	386	1,020	1,620	1,860	530	215	148
13	332	215	390	335	500	352	1,080	1,280	1,450	610	212	*159
14	263	260	394	314	460	320	855	1,050	1,150	660	210	178
15	242	317	465	314	*446	302	720	932	974	649	205	245
16	230	432	414	308	432	290	660	*848	827	585	200	308
17	254	1,070	370	299	410	284	595	848	799	485	198	236
18	218	960	346	290	382	287	545	1,100	876	437	195	190
19	304	876	329	281	370	287	505	1,820	904	432	192	172
20	356	720	314	272	356	275	500	2,260	974	410	190	167
21	1,010	580	320	269	342	272	627	1,900	1,060	394	188	159
22	*890	500	378	281	335	370	876	1,490	1,010	406	185	156
23	550	*432	480	299	320	352	827	1,220	897	406	181	159
24	428	386	555	299	323	414	726	1,040	752	398	181	156
25	363	410	480	302	311	530	638	960	714	363	178	150
26	317	402	419	302	308	560	600	981	708	382	176	148
27	293	480	378	302	299	505	525	995	714	398	172	161
28	275	442	378	302	305	595	500	1,020	806	329	169	200
29	257	390	419	302	-	974	510	1,260	702	323	167	167
30	242	356	1,440	320	------	799	560	1,360	632	338	167	163
31	227	-----	2,520	386	-----	678	-----	1,080	------	332	165	------
Total	9,292	11,671	14,920	13,015	14,026	12,163	20,715	35,041	36,275	14,638	6,654	5,127
Mean	300	389	481	420	501	392	690	1,130	1,209	472	215	171
Cfsm	2.83	3.67	4.54	3.96	4.73	3.70	6.51	10.7	11.4	4.45	2.03	1.61
In.	3.26	4.09	5.23	4.57	4.92	4.27	7.27	12.29	12.73	5.14	2.33	1.80
Ac-ft	18,430	23,150	29,590	25,810	27,820	24,120	41,090	69,500	71,950	29,030	13,200	10,170

Calendar year 1954: Max 2,520 Min 146 Mean 590 Cfsm 5.57 In. 75.52 Ac-ft 427,000
Water year 1954-55: Max 2,590 Min 146 Mean 530 Cfsm 5.00 In. 67.90 Ac-ft 383,900

Peak discharge (base, 4,000 cfs).--No peak above base.
* Discharge measurement made on this day.

Detroit Reservoir near Detroit, Oreg.

Location.--Lat 44°43'20", long 122°15'20", in NW¼ sec. 7, T. 10 S., R. 5 E., in control house near right abutment of Detroit Dam and 5 miles west of Detroit.

Drainage area.--437 sq mi.

Records available.--January 1953 to September 1955.

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

Extremes.--Maximum contents during year, 444,500 acre-ft June 8 (elevation, 1,566.02 ft); minimum, 152,100 acre-ft Jan. 21 (elevation, 1,448.28 ft).
1953-55: Maximum contents, that of June 8, 1955; minimum since first filling, 151,000 acre-ft Jan. 8, 1954 (elevation, 1,447.63 ft).

Remarks.--Reservoir is formed by concrete, gravity-type dam with six 42- by 28-foot control gates. Length of dam is 1,580 ft; built by Corps of Engineers. Storage began in January 1953. Total capacity is 454,900 acre-ft and usable capacity is 340,200 acre-ft between elevation 1,425.0 ft (proposed lower limit of operation) and 1,569.0 ft (top of spillway gates). Reservoir used for flood control, power development, irrigation, improvement of navigation, pollution abatement, and other purposes. Capacity table computed by Corps of Engineers. Figures shown herein are for total storage.

Contents, in acre-feet, at 12 p.m., water year 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	347,700	259,500	156,500	184,900	158,600	208,900	229,800	257,700	425,200	438,200	435,700	425,900
2	344,600	256,800	156,300	182,300	159,600	209,800	229,800	259,900	426,200	438,200	435,800	425,200
3	342,000	254,500	155,300	177,500	160,600	210,400	229,200	262,000	427,800	438,500	435,800	423,800
4	338,900	251,400	155,100	171,900	161,300	210,900	228,400	265,100	431,100	437,900	435,800	423,400
5	336,100	248,300	155,400	165,300	162,400	211,200	227,100	269,200	436,100	436,400	435,500	423,300
6	333,300	244,500	155,600	159,200	164,000	211,800	226,500	274,000	441,700	436,200	435,600	419,900
7	330,200	240,400	155,700	155,800	168,300	211,300	226,000	278,800	443,600	436,500	435,800	417,200
8	327,400	235,900	155,100	157,000	177,000	211,800	226,400	285,800	444,300	436,400	435,400	414,100
9	324,500	233,600	154,300	158,000	183,500	212,400	228,500	290,200	444,200	436,900	435,300	411,000
10	321,800	231,200	153,800	157,000	187,600	213,100	231,900	296,600	443,400	437,300	435,000	408,500
11	319,900	229,000	154,000	156,800	190,800	214,000	233,800	305,000	440,400	436,200	434,800	406,200
12	318,300	227,000	155,200	156,500	194,600	215,900	236,900	313,200	437,100	436,500	434,500	402,400
13	314,500	224,900	155,300	156,300	196,500	217,500	240,400	319,300	436,600	436,800	434,500	399,200
14	311,000	223,100	155,400	155,900	197,000	217,700	242,100	324,200	436,600	436,600	434,700	397,100
15	307,900	220,900	155,700	156,500	198,400	217,900	242,700	328,400	436,400	436,900	434,000	396,400
16	305,000	218,800	155,600	157,100	199,800	218,600	242,900	330,300	435,800	437,100	433,200	396,000
17	304,400	219,800	155,200	155,600	201,000	219,400	242,400	333,200	435,700	437,100	433,000	394,800
18	300,000	217,400	155,600	154,000	202,000	220,000	241,600	338,200	437,000	435,400	432,600	394,800
19	297,900	214,300	156,100	154,000	203,000	221,400	240,200	347,100	438,000	435,400	432,300	391,900
20	294,600	210,200	155,500	153,200	203,800	222,600	239,000	359,000	438,600	435,400	432,200	390,900
21	293,800	205,100	155,500	152,500	204,100	221,800	238,900	369,500	442,200	435,300	432,100	389,500
22	292,100	199,200	155,700	152,900	205,100	223,200	240,800	377,100	442,000	435,400	431,000	387,900
23	288,500	192,900	156,700	153,500	205,300	224,800	244,000	382,900	441,000	435,800	430,500	386,500
24	284,600	186,100	158,300	153,000	206,000	226,100	246,700	387,600	439,400	436,000	430,000	384,900
25	280,200	180,000	159,800	153,500	206,400	225,800	246,600	391,400	439,300	435,000	429,500	383,900
26	276,200	173,800	161,000	153,900	207,400	225,600	248,500	395,800	439,200	436,100	429,100	380,900
27	273,900	169,000	159,700	154,200	208,200	224,600	249,800	400,200	438,600	436,000	428,700	378,300
28	270,700	163,900	159,100	154,500	207,700	224,500	250,900	404,800	438,800	435,600	428,800	375,700
29	268,000	159,400	158,300	155,300	-	227,200	252,100	410,700	438,400	435,300	427,500	373,100
30	265,500	157,200	164,800	155,900	-------	228,700	254,200	417,200	437,800	435,900	427,000	372,000
31	262,800	-------	179,400	157,000	-------	229,100	-------	421,800	-------	436,400	426,400	-------

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,536.99	350,800	-
Oct. 31	1,503.47	262,800	-88,000
Nov. 30	1,451.29	157,200	-105,600
Dec. 31	1,463.79	179,400	+22,200
Calendar year 1954	-	-	+7,600
Jan. 31	1,451.18	157,000	-22,400
Feb. 28	1,478.56	207,700	+50,700
Mar. 31	1,488.79	229,100	+21,400
Apr. 30	1,499.88	254,200	+25,100
May 31	1,559.35	421,800	+167,600
June 30	1,564.07	437,800	+16,000
July 31	1,563.66	436,400	-1,400
Aug. 31	1,560.70	426,400	-10,000
Sept.30	1,544.02	372,000	-54,400
Water year 1954-55	-	-	+21,200

† Elevation at 12 p.m.

North Santiam River at Niagara, Oreg.

Location.--Lat 44°45'10", long 122°17'50", in NE¼NE¼ sec. 34, T. 9 S., R. 4 E., on left bank 0.8 mile downstream from Big Cliff Dam and 2.1 miles east of Niagara.

Drainage area.--453 sq mi.

Records available.--December 1908 to September 1912 (gage heights and discharge measurements only), October 1912 to December 1919, and October 1938 to September 1955. Prior to October 1912, published as North Fork Santiam River near Niagara, and October 1938 to September 1952, published as North Santiam River above Mayflower Creek, near Detroit.

Gage.--Water-stage recorder. Datum of gage is 1,093.78 ft above mean sea level (Bureau of Public Roads benchmark). Dec. 20, 1908, to Dec. 31, 1919, staff gage at site half a mile west of Niagara at different datum. Oct. 1, 1938, to Sept. 30, 1952, water-stage recorders or staff gages at various sites and datums about 3.5 miles upstream.

Average discharge.--24 years (1912-19, 1938-55), 2,267 cfs, adjusted (1,641,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,810 cfs June 11 (gage height, 7.62 ft); minimum, 402 cfs Dec. 7; minimum daily, 758 cfs Mar. 20.

1912-19, 1938-55: Maximum discharge, 63,200 cfs Nov. 22, 1909 (gage height, 16.4 ft, from floodmark, site and datum then in use), from rating curve extended above 35,000 cfs; minimum, 87 cfs Nov. 8, 1953; minimum daily, 430 cfs Sept. 23-25, 1915 (gage height, 1.25 ft).

Remarks.--Records excellent. No diversion above station. Flow completely regulated by Detroit Reservoir (see preceding page) beginning January 1953. Records of water temperatures for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1288: 1914-18, 1920.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 3		Jan. 4 to June 11		June 12 to Sept. 30	
2.9	1,090	2.5	730	2.6	880
4.0	2,260	3.0	1,120	3.0	1,210
5.0	3,760	4.0	2,210	4.0	2,320
6.1	5,960	5.0	3,760	5.0	3,830
		6.0	5,740	6.0	5,750
		7.6	9,750	7.3	8,900

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,310	2,550	1,740	4,120	1,180	1,030	2,900	1,250	1,960	2,690	1,070	1,020
2	2,140	2,340	1,440	5,960	1,190	1,090	2,890	1,450	2,510	2,690	1,050	952
3	2,360	2,250	1,740	5,920	1,040	1,030	2,940	1,220	2,650	2,370	1,060	952
4	2,240	2,480	1,300	5,550	1,150	1,030	2,900	1,250	2,760	2,800	1,090	1,000
5	2,190	2,430	1,110	5,780	1,100	1,010	*2,830	1,260	2,820	2,860	992	992
6	2,160	2,960	2,120	5,310	1,100	1,020	2,590	1,290	3,380	*2,180	1,040	1,830
7	2,220	3,000	1,710	3,310	1,500	990	2,820	1,230	5,890	1,930	1,040	2,170
8	2,240	3,060	2,040	1,390	1,320	1,040	2,890	1,320	7,560	2,120	1,040	2,280
9	2,130	2,160	1,900	1,240	1,250	1,030	3,050	1,310	8,980	1,750	*1,010	2,350
10	2,390	1,950	1,690	1,960	1,200	1,040	2,970	1,270	9,430	1,740	1,020	1,810
11	2,220	2,020	1,190	*1,540	1,090	1,150	3,020	1,370	9,660	2,510	1,020	1,890
12	2,790	2,080	1,170	1,680	1,080	1,040	2,920	1,410	8,870	1,820	1,050	2,560
13	3,330	2,080	1,700	1,600	1,070	1,090	2,980	1,710	5,620	2,080	1,010	*2,330
14	3,190	2,090	1,800	1,430	1,110	1,170	2,890	1,440	4,660	2,320	1,020	1,880
15	2,750	2,290	1,970	1,160	1,080	875	2,830	1,290	3,970	2,140	1,040	1,450
16	2,530	3,440	1,900	1,170	*1,030	*882	2,830	2,110	3,680	2,030	1,010	1,520
17	1,840	4,010	1,860	2,410	1,180	890	2,770	*1,560	3,270	1,790	976	1,420
18	2,750	5,010	1,230	1,530	1,340	882	2,830	1,630	2,600	2,440	1,000	1,430
19	2,560	5,410	1,320	1,190	1,030	852	2,760	1,720	2,770	1,530	1,000	1,700
20	3,120	4,740	1,690	1,340	982	758	2,800	1,970	3,200	1,510	1,040	1,330
21	*3,620	5,110	1,460	1,520	1,010	927	2,800	1,600	1,960	1,410	1,040	1,530
22	4,510	5,070	1,420	1,100	998	1,120	2,890	1,580	3,970	1,490	1,090	1,540
23	4,050	5,130	1,440	1,170	1,080	1,090	1,870	1,580	3,960	1,450	1,050	1,480
24	4,150	*5,090	1,480	1,690	1,050	1,660	1,700	1,580	3,800	1,450	1,050	1,440
25	3,800	4,870	1,270	1,160	1,010	2,900	2,920	1,580	2,880	1,610	1,030	1,470
26	2,940	4,870	1,310	1,170	998	3,030	1,670	1,600	2,660	1,280	1,020	2,000
27	2,410	4,710	2,040	1,160	1,020	3,000	1,620	1,750	3,190	1,230	984	2,170
28	2,750	4,400	1,980	1,170	1,370	3,060	1,650	1,680	3,060	1,410	1,010	2,150
29	2,460	4,040	2,260	1,130	-	3,130	1,630	1,760	3,100	1,270	1,060	2,170
30	2,300	2,570	2,680	1,130	-------	3,020	1,240	1,700	3,080	1,120	968	1,330
31	2,430	-------	3,250	1,140	-------	2,950	-------	1,830	-------	1,090	1,090	-------
Total	84,880	104,210	53,210	69,130	31,558	45,786	77,400	47,300	127,900	57,910	31,970	50,146
Mean	2,738	3,474	1,716	2,230	1,127	1,477	2,580	1,526	4,263	1,868	1,031	1,672
Ac-ft	168,400	206,700	105,500	137,100	62,590	90,820	153,500	93,820	253,700	114,900	63,410	99,460

Adjusted for change in contents in Detroit Reservoir

Mean	1,308	1,699	2,077	1,865	2,040	1,825	3,001	4,251	4,532	1,846	869	757
Cfsm	2.89	3.75	4.58	4.12	4.50	4.03	6.62	9.38	10.0	4.08	1.92	1.67
In.	3.33	4.18	5.29	4.75	4.69	4.64	7.39	10.82	11.16	4.70	2.21	1.87
Ac-ft	80,400	101,100	127,700	114,700	113,300	112,200	178,600	261,400	269,700	113,500	53,410	45,060

Observed

Calendar year 1954: Max 5,410 Min 704 Mean 2,303 Ac-ft 1,667,000
Water year 1954-55: Max 9,660 Min 758 Mean 2,141 Ac-ft 1,550,000

Adjusted

Calendar year 1954: Mean 2,314 Cfsm 5.11 In. 69.31 Ac-ft 1,675,000
Water year 1954-55: Mean 2,170 Cfsm 4.79 In. 65.03 Ac-ft 1,571,000

* Discharge measurement made on this day.

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 1955.

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.--24 years, 765 cfs (553,800 acre-ft per year).

Extremes.--Maximum discharge during year, 13,000 cfs Dec. 30 (gage height, 11.88 ft); minimum, 40 cfs Sept. 13.
1931-55: 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 except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 754: 1932. WSP 1218: 1934, 1936, 1949-50.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
2.8	75	5.0	940	2.5	36	4.5	585
3.0	107	6.0	1,810	2.7	56	5.0	860
3.5	220	8.0	5,130	3.0	100	6.0	1,770
4.0	390	11.0	11,100	3.5	210	7.0	3,280
4.5	620			4.0	375	8.0	5,130

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	241	470	4,090	950	594	1,400	860	818	748	158	53
2	90	220	418	2,120	850	670	1,240	804	700	797	149	52
3	87	205	386	1,430	700	531	1,040	766	797	621	138	49
4	84	192	350	1,080	650	439	874	811	1,230	531	130	48
5	81	192	343	898	650	379	*790	1,150	1,540	467	122	46
6	80	244	686	740	750	350	797	1,350	1,740	*423	118	45
7	80	210	722	632	2,000	350	1,040	1,370	1,840	407	109	44
8	80	192	600	575	3,500	435	1,260	1,490	2,080	399	104	45
9	78	212	545	535	2,000	471	1,770	1,220	2,240	395	*100	44
10	100	198	495	*490	1,200	479	2,150	1,220	2,080	375	98	42
11	285	190	446	450	900	725	1,510	1,690	1,730	364	97	42
12	1,040	326	480	410	778	680	1,770	1,720	1,400	375	94	41
13	1,140	386	989	495	685	626	2,280	1,300	1,050	407	90	*49
14	615	378	884	470	621	549	1,510	1,040	825	427	87	98
15	422	575	1,030	458	585	479	1,120	895	665	395	84	76
16	329	919	856	466	*549	439	1,010	804	567	344	81	255
17	298	2,980	722	458	518	407	888	*846	540	284	81	284
18	259	2,340	620	438	471	395	760	1,230	567	249	78	168
19	424	1,770	570	394	435	383	705	2,310	580	225	74	122
20	752	1,280	530	370	399	358	680	2,510	660	213	70	104
21	*1,940	940	585	350	372	350	825	1,790	766	202	69	90
22	2,220	*734	668	495	358	881	1,750	1,320	742	198	68	82
23	1,180	590	800	680	336	946	1,470	1,050	635	192	66	75
24	828	495	1,010	656	354	1,790	1,210	860	526	180	65	70
25	632	565	776	710	354	1,940	958	846	483	165	64	68
26	505	570	620	650	344	1,960	867	994	487	222	62	64
27	426	758	510	600	326	1,410	736	1,150	483	305	59	74
28	370	776	515	650	340	1,640	680	1,030	635	225	57	195
29	328	638	1,070	600	-	2,300	736	1,270	685	190	55	153
30	294	540	6,770	650	------	1,730	760	1,520	580	178	54	120
31	285	-----	~9,310	900	-----	1,400	-----	1,090	------	165	54	------
Total	15,405	19,856	34,776	23,940	21,975	26,086	34,566	38,306	29,671	10,668	2,735	2,698
Mean	497	662	1,122	772	785	841	1,152	1,236	989	344	88.2	89.9
Cfsm	4.52	6.02	10.2	7.02	7.14	7.65	10.5	11.2	8.99	3.13	0.802	0.817
In.	5.21	6.71	11.76	8.09	7.43	8.82	11.69	12.95	10.03	3.61	0.92	0.91
Ac-ft	30,560	39,380	68,980	47,480	43,590	51,740	68,560	75,980	58,850	21,160	5,420	5,350

Calendar year 1954: Max 9,310 Min 71 Mean 775 Cfsm 7.05 In. 95.65 Ac-ft 561,000
Water year 1954-55: Max 9,310 Min 41 Mean 714 Cfsm 6.49 In. 88.13 Ac-ft 517,000

Peak discharge (base, 8,200 cfs).--Dec. 30 (10 p.m.) 13,000 cfs (11.88 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 26 to Feb. 11; discharge estimated on basis of recorded range in stage and records for North Santiam River at Mehama and at Niagara.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 602.49 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 15, 1933, staff gage at site 100 ft upstream at same datum.

Average discharge.--39 years (1905-6, 1910-14, 1921-55), 3,270 cfs (2,367,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,600 cfs Dec. 30 (gage height, 8.09 ft); minimum, 957 cfs Aug. 28; minimum daily, 1,070 cfs Sept. 2.
1905-7, 1910-14, 1921-55: 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.

Remarks.--Records excellent. Flow regulated by Detroit Reservoir (see p. 144) beginning January 1953. No diversion above station for irrigation.

Revisions (water years).--WSP 634: Drainage area. WSP 739: 1922-23(M). WSP 1044: 1943. WSP 1248: 1906, 1911-14, 1924(M), 1926, 1934-36(M), 1937, 1938(M), 1942(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.1	1,020	6.0	9,220
3.0	2,010	8.0	17,100
4.0	3,830		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,240	2,650	2,540	9,800	2,530	2,560	5,300	2,650	3,100	3,900	1,280	1,180
2	2,180	2,490	2,010	9,220	2,260	2,530	5,040	2,790	3,450	3,900	1,260	1,070
3	2,400	2,460	2,120	8,080	1,960	2,110	4,800	2,480	3,850	3,350	1,230	1,080
4	2,210	2,540	1,880	7,320	1,970	1,910	4,530	2,540	4,450	3,450	1,290	1,120
5	2,200	2,560	1,640	7,030	2,110	1,760	*4,290	2,850	4,870	3,540	1,200	1,130
6	2,180	3,140	3,220	6,710	2,300	1,750	4,050	3,240	5,440	*2,940	1,210	1,610
7	2,140	3,160	2,850	4,510	4,940	1,720	4,510	3,200	7,710	2,440	1,230	2,260
8	2,270	3,240	3,000	2,830	6,030	1,820	4,760	3,410	9,590	2,610	1,200	2,280
9	2,200	2,460	2,670	2,080	4,560	1,860	5,470	3,100	11,300	2,300	1,190	2,480
10	2,430	2,150	2,410	2,630	3,330	1,880	5,980	3,000	11,600	2,210	1,170	1,980
11	2,790	2,150	1,890	*2,300	2,630	2,320	5,440	3,640	11,500	2,830	1,160	1,920
12	4,030	2,400	1,960	2,160	2,360	2,270	5,900	3,720	10,800	2,360	1,200	2,490
13	4,380	2,460	3,100	2,350	2,180	2,240	6,710	3,620	7,320	2,490	1,130	2,430
14	3,920	2,460	3,020	2,180	2,150	2,180	5,520	3,100	5,800	2,720	1,130	*2,120
15	3,160	2,830	3,450	1,980	2,000	1,800	4,820	2,900	5,010	2,610	1,160	1,630
16	2,900	4,450	3,200	1,970	*1,920	1,720	4,760	3,200	4,560	2,380	1,120	1,760
17	2,200	7,740	2,890	3,100	1,910	1,680	4,530	*3,080	4,140	2,070	1,100	1,740
18	2,870	7,900	2,180	2,330	2,120	1,640	4,360	3,390	3,450	2,610	1,100	1,570
19	3,100	7,930	2,080	1,980	1,760	1,580	4,120	4,620	3,450	1,930	1,120	1,750
20	3,920	6,300	2,330	2,010	1,650	1,460	4,250	5,180	4,050	1,740	1,150	1,510
21	*5,930	6,300	2,240	2,150	1,630	1,500	4,530	4,090	3,000	1,690	1,150	1,580
22	7,030	5,980	2,260	1,960	1,610	2,670	5,850	3,430	4,600	1,600	1,180	1,640
23	5,440	*5,880	2,490	2,200	1,650	2,790	4,490	3,060	4,920	1,650	1,160	1,560
24	5,180	5,750	2,810	2,610	1,680	4,920	3,810	2,770	4,580	1,700	1,140	1,500
25	4,620	5,620	2,380	2,220	1,650	6,140	4,470	2,760	3,790	1,740	1,140	1,550
26	3,600	5,600	2,150	2,140	1,610	6,300	3,490	2,940	3,330	1,650	1,200	2,270
27	2,890	5,800	2,720	2,080	1,640	5,400	2,960	3,330	3,810	1,630	1,100	2,150
28	3,120	5,420	2,700	2,080	1,820	5,750	2,850	3,100	4,070	1,580	1,110	2,300
29	2,850	5,080	3,700	2,020	-	6,770	3,000	3,430	4,120	1,520	1,180	2,260
30	2,540	3,470	10,300	2,040	------	5,960	2,630	3,790	3,980	1,380	1,100	1,630
31	2,720	-----	13,300	2,300	-----	5,300	-----	3,240	------	1,330	1,170	------
Total	101,640	128,370	97,490	106,170	65,960	92,290	137,220	101,650	165,640	71,850	36,260	53,550
Mean	3,279	4,279	3,145	3,425	2,356	2,977	4,574	3,279	5,521	2,318	1,170	1,785
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	201,600	254,600	193,400	210,600	130,800	183,100	272,200	201,600	328,500	142,500	71,920	106,200

Calendar year 1954: Max 13,300 Min 921 Mean 3,343 Cfsm 5.03 In. 68.24 Ac-ft 2,420,000
Water year 1954-55: Max 13,300 Min 1,070 Mean 3,173 Cfsm 4.77 In. 64.77 Ac-ft 2,297,000

* Discharge measurement made on this day.

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 1955.

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.--20 years, 790 cfs (571,900 acre-ft per year).

Extremes.--Maximum discharge during year, 11,400 cfs Dec. 30 (gage height, 11.78 ft); minimum daily, 55 cfs Sept. 6-12.
1935-55: 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 table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	53	4.0	1,060
1.7	98	6.0	2,670
2.0	165	8.0	5,010
2.5	315	10.0	8,100
3.0	515		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	238	386	4,730	1,100	1,030	1,740	1,130	1,130	856	180	65
2	127	220	362	2,770	900	1,100	1,540	1,050	1,020	809	170	65
3	122	214	346	1,790	750	748	1,320	970	1,140	690	160	60
4	118	196	332	1,340	700	590	1,160	976	1,420	610	*158	60
5	120	196	343	*1,110	750	506	1,030	*1,240	1,690	556	150	60
6	118	208	1,020	934	900	462	1,000	1,450	1,880	533	140	55
7	116	193	862	804	2,000	497	1,170	1,500	2,070	492	136	55
8	116	190	670	732	3,000	665	1,340	1,600	2,280	520	129	55
9	104	217	585	690	2,800	690	1,700	1,390	2,430	492	125	55
10	140	188	510	620	*1,730	705	2,040	1,410	2,270	470	118	55
11	220	180	450	560	1,280	1,130	1,750	1,780	1,910	440	116	55
12	*414	250	474	520	1,050	1,190	1,930	1,830	1,620	440	112	55
13	394	290	809	660	928	1,060	2,380	1,470	1,320	440	108	70
14	274	300	754	625	814	826	1,740	1,310	1,100	440	104	150
15	223	500	838	655	738	685	1,340	1,200	922	420	96	160
16	193	800	721	670	695	610	1,230	1,090	*792	400	95	350
17	217	1,800	635	630	660	546	1,140	1,130	748	360	90	250
18	188	1,500	556	570	595	520	1,010	1,370	743	320	90	170
19	389	1,200	510	515	556	497	910	2,140	743	300	85	130
20	458	1,000	484	488	520	458	970	2,540	798	280	85	100
21	1,000	800	484	474	488	434	1,390	2,050	850	260	80	90
22	1,410	600	497	738	484	819	2,550	1,640	844	250	80	85
23	886	500	560	800	446	*1,010	2,070	1,370	770	240	75	*77
24	655	*470	685	750	454	2,660	1,710	1,190	685	230	75	74
25	515	528	600	750	454	2,760	1,330	1,130	620	230	70	72
26	434	492	528	750	434	2,100	1,210	1,170	600	340	70	69
27	379	551	470	700	430	1,780	1,080	1,350	585	320	70	72
28	332	510	502	700	446	2,260	994	1,300	814	260	65	96
29	301	458	988	700	-	2,870	1,130	1,470	809	220	65	84
30	277	422	6,090	750	------	2,190	1,120	1,570	690	200	65	76
31	253	-----	7,490	900	-----	1,770	-----	1,320	------	190	65	------
Total	10,628	15,211	30,541	29,425	26,102	35,168	43,004	44,136	35,293	12,608	3,227	2,870
Mean	343	507	985	949	932	1,134	1,433	1,424	1,176	407	104	95.7
Cfsm	1.97	2.91	5.66	5.45	5.36	6.52	8.24	8.18	6.76	2.34	0.598	0.550
In.	2.27	3.25	6.53	6.29	5.58	7.52	9.19	9.43	7.54	2.69	0.69	0.61
Ac-ft	21,080	30,170	60,580	58,360	51,770	69,750	85,300	87,540	70,000	25,010	6,400	5,690

Calendar year 1954: Max 7,590 Min 76 Mean 740 Cfsm 4.25 In. 57.70 Ac-ft 535,500
Water year 1954-55: Max 7,490 Min 55 Mean 790 Cfsm 4.54 In. 61.59 Ac-ft 571,600

Peak discharge (base, 5,300 cfs).--Dec. 30 (10:30 p.m.) 11,400 cfs (11.78 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 11-23, Jan. 23 to Feb. 9, July 11 to Aug. 3, Aug. 16 to Sept. 22; discharge estimated on basis of weather records, recorded range in stage when available, and records for station at Waterloo.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 562.14 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Oct. 24, 1952, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 24,500 cfs Dec. 30 (gage height, 16.47 ft); minimum, 130 cfs Sept. 13 (gage height, 1.41 ft).
1951-55: Maximum discharge, 38,400 cfs Nov. 22, 1953 (gage height, 19.67 ft); 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 excellent. No regulation or diversion above station. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30		Dec. 31 to Sept. 30			
1.8	182	1.4	129	6.0	1,560
2.0	209	2.0	200	7.0	2,520
3.0	372	3.0	370	10.0	6,690
4.0	600	4.0	600	13.0	13,300
Note.--Same as following table above 4.0 ft.		5.0	960	15.0	19,200

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	430	864	9,950	2,460	1,860	3,430	2,190	2,190	1,500	331	161
2	212	408	790	5,460	1,890	2,070	3,020	2,040	1,940	1,490	313	156
3	206	386	754	3,690	1,590	1,430	2,580	1,900	2,100	1,260	299	152
4	201	368	695	2,860	1,460	1,180	2,210	1,940	2,710	1,120	288	150
5	198	365	684	*2,330	1,540	1,030	1,970	*2,590	3,150	1,010	*278	144
6	194	412	1,790	1,920	1,740	952	1,940	3,060	3,560	960	266	139
7	194	379	1,730	1,670	5,150	974	2,370	3,180	3,910	908	258	139
8	206	358	1,400	1,510	7,450	1,160	2,790	3,460	4,280	892	248	139
9	194	406	1,270	1,420	*5,580	1,210	3,640	2,930	4,340	880	242	136
10	233	376	1,180	1,280	3,670	1,220	4,770	2,930	4,180	844	235	135
11	404	354	1,070	1,180	2,740	1,850	3,860	3,810	3,670	793	229	135
12	*1,030	472	1,210	1,100	2,200	1,940	4,490	3,950	3,070	782	224	132
13	1,020	485	2,300	1,260	1,920	1,780	5,280	3,200	2,460	808	217	147
14	624	603	2,120	1,180	1,740	1,480	3,780	2,690	2,010	804	213	311
15	468	1,060	2,230	1,160	1,620	1,280	2,940	2,370	1,700	744	208	322
16	406	1,560	1,870	1,210	1,520	1,170	2,700	2,140	*1,460	660	203	828
17	420	5,280	1,580	1,160	1,460	1,080	2,410	2,180	1,340	579	199	550
18	370	3,720	1,390	1,100	1,320	1,050	2,080	2,770	1,330	520	195	358
19	586	2,970	1,290	1,020	1,210	1,000	1,930	4,490	1,340	482	190	276
20	932	2,310	1,240	1,000	1,140	920	1,960	5,250	1,430	456	186	237
21	2,470	1,740	1,320	974	1,060	896	2,600	4,200	1,560	438	179	214
22	3,320	1,410	1,390	1,220	1,020	2,030	4,760	3,280	1,530	424	177	197
23	1,820	1,190	1,540	1,430	952	2,020	3,990	2,710	1,380	410	173	186
24	1,310	*1,040	1,910	1,380	1,000	*4,090	3,390	2,300	1,210	390	172	179
25	1,050	1,100	1,590	1,480	1,010	4,230	2,700	2,190	1,100	370	170	170
26	860	1,020	1,340	1,460	969	3,900	2,480	2,320	1,080	458	168	*166
27	723	1,180	1,160	1,420	920	3,290	2,090	2,680	1,050	600	167	178
28	624	1,160	1,140	1,490	932	3,940	1,920	2,520	1,320	450	164	302
29	548	1,050	1,960	1,460	-	5,300	1,990	2,920	1,290	394	163	245
30	500	944	12,300	1,610	------	4,270	2,030	3,060	1,180	368	162	200
31	458	-----	16,400	2,100	-----	3,510	-----	2,620	------	346	162	------
Total	21,999	34,536	69,507	59,484	57,263	64,112	88,100	89,870	64,870	22,140	6,679	6,785
Mean	710	1,151	2,242	1,919	2,045	2,068	2,937	2,899	2,162	714	215	226
Cfsm	2.47	4.01	7.81	6.69	7.13	7.21	10.2	10.1	753	2.49	0.749	0.787
In.	2.85	4.48	9.01	7.71	7.42	8.31	11.42	11.65	8.41	2.87	0.87	0.88
Ac-ft	43,630	68,500	137,900	118,000	113,600	127,200	174,700	178,300	128,700	43,910	13,250	13,460

Calendar year 1954: Max 16,400 Min 176 Mean 1,537 Cfsm 5.36 In. 72.68 Ac-ft 1,112,000
Water year 1954-55: Max 16,400 Min 132 Mean 1,604 Cfsm 5.59 In. 75.88 Ac-ft 1,161,000

Peak discharge (base, 12,000 cfs).--Dec. 30 (10 p.m.) 24,500 cfs (16.47 ft).
* 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 1955.

Gage.--Water-stage recorder. Datum of gage is 718.08 ft above mean sea level (Corps of Engineers benchmark).

Average discharge.--8 years, 235 cfs (170,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,310 cfs Dec. 30 (gage height, 5.01 ft); minimum, 14 cfs Sept. 5-12.
1947-55: Maximum discharge, 5,410 cfs Jan. 7, 1948 (gage height, 7.52 ft); maximum gage height, 7.80 ft Jan. 18, 1953 (backwater from debris); minimum discharge, 5.6 cfs about Nov. 26, 1952.

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

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	14	2.5	470
1.1	31	3.0	730
1.4	75	4.0	1,420
1.7	145	5.0	2,300
2.0	250		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	56	98	1,170	294	444	585	346	157	85	29	17
2	25	52	91	760	238	420	510	322	140	91	28	16
3	24	50	87	530	203	250	460	302	166	73	*27	15
4	24	46	79	410	189	178	410	302	196	65	26	15
5	23	46	95	*350	189	148	354	*342	200	60	26	14
6	23	52	485	302	203	135	338	380	196	65	25	14
7	23	46	358	254	366	154	362	385	192	60	24	14
8	23	48	258	226	618	203	395	390	192	63	23	14
9	22	50	218	210	505	196	490	350	178	63	22	14
10	27	44	178	182	*435	214	560	350	154	58	22	14
11	46	a44	151	160	346	346	545	410	130	52	22	14
12	*97	a55	203	145	290	400	744	400	112	49	21	14
13	87	a65	415	189	242	350	844	322	98	46	21	18
14	56	a90	338	169	210	278	600	330	85	43	20	39
15	44	a120	370	192	186	226	470	322	77	41	20	31
16	41	a300	302	222	172	196	480	286	*70	41	20	66
17	46	a550	242	203	157	172	435	278	65	39	20	43
18	38	a380	203	172	138	163	362	314	61	37	19	31
19	145	a320	178	145	125	148	350	415	56	36	18	25
20	130	a270	163	138	120	135	425	440	54	35	18	22
21	295	a220	151	130	110	130	636	358	52	33	18	20
22	380	a180	142	258	105	376	898	298	52	32	18	*19
23	246	a150	169	278	95	375	660	250	54	31	17	20
24	172	a130	203	254	102	*718	540	218	52	30	17	19
25	135	a120	182	258	100	760	445	206	46	30	17	18
26	110	*135	157	238	100	640	420	203	44	49	17	18
27	93	154	140	222	102	580	354	206	43	55	17	20
28	81	135	163	218	126	742	338	192	92	39	16	37
29	73	120	371	206	-	910	358	218	95	35	16	24
30	66	110	1,540	218	------	754	346	218	68	33	16	21
31	60	-----	1,520	278	-----	610	-----	182	------	30	17	------
Total	2,680	4,138	9,250	8,687	6,166	11,351	14,714	9,535	3,177	1,499	637	666
Mean	86.5	138	298	280	220	366	490	308	106	48.4	20.5	22.2
Cfsm	1.66	2.65	5.73	5.38	4.23	7.04	9.42	5.92	2.04	0.931	0.394	0.427
In.	1.92	2.96	6.62	6.21	4.41	8.12	10.52	6.82	2.27	1.07	0.46	0.48
Ac-ft	5,320	8,210	18,350	17,230	12,230	22,510	29,180	18,910	6,300	2,970	1,260	1,320

Calendar year 1954: Max 2,860 Min 17 Mean 199 Cfsm 3.83 In. 51.90 Ac-ft 144,000
Water year 1954-55: Max 1,540 Min 14 Mean 199 Cfsm 3.83 In. 51.86 Ac-ft 143,800

Peak discharge (base, 1,400 cfs).--Dec. 30 (7:30 p.m.) 2,310 cfs (5.01 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for Calapooya River at Holley.

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 1955. 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.--33 years (1905-6, 1923-55), 2,806 cfs (2,031,000 acre-ft per year).

Extremes.--Maximum discharge during year, 36,900 cfs Dec. 31 (gage height, 14.71 ft); minimum, 205 cfs Sept. 6 (gage height, 2.20 ft).
1905-7, 1910-11, 1923-55: Maximum discharge, 74,200 cfs Dec. 28, 1945 (gage height, 22.85 ft), from rating curve extended above 37,000 cfs by logarithmic plotting; minimum, 96 cfs Sept. 1, 2, 1940.

Remarks.--Records excellent except those for period of no gage-height record, which are good. No regulation or diversion 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 (water years).--WSP 1248: 1907, 1924-30, 1932.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.2	205	5.0	3,490
2.5	360	7.0	8,700
3.0	720	10.0	18,600
4.0	1,790	13.0	29,700

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	408	828	1,480	18,000	4,350	3,740	6,710	4,110	3,720	2,310	584	255
2	396	774	1,390	11,000	3,450	4,950	6,130	3,890	3,210	2,470	560	250
3	384	729	1,340	7,340	2,900	3,290	5,300	3,510	3,230	2,100	*532	245
4	366	688	1,240	5,580	2,640	2,500	4,600	*5,470	4,170	1,830	511	245
5	360	656	1,220	4,700	2,740	2,100	4,000	4,240	4,930	1,650	490	240
6	360	720	3,230	*3,910	2,880	1,920	3,760	5,150	a5,500	1,560	469	225
7	366	720	3,600	3,330	7,670	1,860	4,200	5,300	a6,500	1,510	448	215
8	372	656	2,720	2,980	11,300	2,230	4,860	5,780	a7,000	1,460	427	220
9	360	720	2,390	2,810	*10,800	2,330	5,860	5,050	a7,500	1,480	414	220
10	372	696	2,160	2,470	6,940	2,310	8,330	4,810	a7,000	1,410	402	215
11	546	656	1,890	2,230	5,120	3,620	7,170	5,970	a6,500	1,330	390	220
12	*1,320	900	1,930	2,060	4,130	4,000	7,850	6,600	a5,500	1,300	378	220
13	1,790	1,000	4,020	2,390	3,510	3,800	10,700	5,450	a4,500	1,320	366	230
14	1,130	1,010	3,800	2,370	3,090	3,110	7,730	4,860	a3,500	1,330	360	418
15	891	1,580	4,000	2,360	2,830	2,580	5,860	4,460	*2,810	1,290	354	497
16	747	2,310	3,490	2,720	2,640	2,310	5,300	3,950	2,390	1,190	349	983
17	747	8,370	2,880	2,600	2,490	2,110	4,910	3,800	2,180	1,090	344	909
18	688	6,660	2,470	2,360	2,280	1,990	4,170	4,370	2,110	963	338	632
19	828	5,380	2,230	2,080	2,080	1,860	3,800	6,690	2,110	900	322	483
20	1,660	4,220	2,100	1,990	1,930	1,720	4,020	8,760	2,180	855	310	396
21	2,710	3,110	2,110	1,920	1,800	1,630	5,180	7,370	2,390	810	305	354
22	6,190	2,450	2,160	2,470	1,720	3,340	10,000	5,730	2,440	774	295	327
23	3,370	2,060	2,330	3,050	1,630	*4,240	8,270	4,720	2,250	747	290	310
24	2,360	*1,790	3,110	2,830	1,630	8,420	8,830	4,000	1,990	720	285	305
25	1,860	1,890	2,830	2,920	1,720	9,320	5,420	3,680	1,790	680	280	280
26	1,490	1,890	2,390	2,860	1,660	8,030	5,050	3,660	1,690	720	275	*275
27	1,310	1,990	2,100	2,700	1,690	6,600	4,280	4,350	1,660	1,050	270	265
28	1,150	2,000	2,160	2,740	1,670	7,640	3,780	4,130	2,050	819	265	420
29	1,040	1,790	3,390	2,690	-	10,300	4,060	4,580	2,450	704	260	420
30	945	1,750	18,000	2,810	------	8,700	3,980	5,000	1,930	656	255	344
31	891	-----	27,000	3,390	-----	7,060	-----	4,460	------	616	255	------
Total	37,407	59,993	117,160	115,660	99,290	129,610	172,110	151,900	107,160	37,644	11,383	10,618
Mean	1,207	2,000	3,779	3,731	3,546	4,181	5,737	4,900	3,572	1,214	367	354
Cfsm	1.89	3.12	5.90	5.83	5.54	6.53	8.96	7.66	5.58	1.90	0.573	0.553
In.	2.17	3.49	6.81	6.72	5.77	7.53	10.00	8.83	6.23	2.19	0.66	0.62
Ac-ft	74,200	119,000	232,400	229,400	196,900	257,100	341,400	301,300	212,500	74,670	22,580	21,060

Calendar year 1954: Max 29,000 Min 290 Mean 2,778 Cfsm 4.34 In. 58.93 Ac-ft 2,011,000
Water year 1954-55: Max 27,000 Min 215 Mean 2,877 Cfsm 4.50 In. 61.02 Ac-ft 2,083,000

Peak discharge (base, 21,000 cfs).--Dec. 31 (1 a.m.) 36,900 cfs (14.71 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station below Cascadia.

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 1955.

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.--29 years, 210 cfs (152,000 acre-ft per year).

Extremes.--1926-55: Maximum daily discharge, 332 cfs Dec. 29, 1936; minimum daily, 8 cfs Sept. 16, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Canal diverts from South Santiam River at Lebanon and discharges into Calapooya River at mouth. Lebanon ditch discharges into canal just below canal intake. Water is used for power and water supply at Albany.

Cooperation.--Recorder inspected by employee of Pacific Power & Light Co.

Revisions (water years).--WSP 1248: 1926, 1930, 1939, 1942.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	206	144	186	167	238	178	227	226	64	175	249	188
2	203	144	182	154	224	202	224	226	64	180	243	180
3	198	142	182	177	220	198	221	221	64	177	*249	179
4	196	140	180	212	200	194	224	*199	65	174	247	181
5	193	139	180	216	210	194	226	188	65	157	229	180
6	191	140	212	209	220	192	220	219	65	151	205	164
7	188	142	205	200	230	190	222	221	80	147	200	150
8	186	148	196	198	220	198	228	221	150	131	198	152
9	186	156	214	200	*216	202	238	202	120	158	195	155
10	187	158	207	188	208	200	250	198	100	156	188	150
11	197	150	204	180	232	205	248	213	110	154	195	151
12	*195	173	207	176	227	207	238	233	100	127	212	151
13	189	185	224	185	220	209	233	210	90	157	213	160
14	190	186	209	192	209	209	229	229	75	206	216	191
15	192	225	209	204	206	209	221	228	*67	233	212	209
16	188	244	212	217	204	205	228	218	116	230	209	216
17	188	188	211	198	205	199	227	200	187	224	206	211
18	187	161	211	179	209	192	229	229	184	209	209	195
19	177	197	209	166	201	192	235	240	186	211	213	194
20	172	187	205	175	199	191	191	248	185	212	209	202
21	162	181	201	188	189	184	231	236	189	219	204	*195
22	164	194	176	205	187	199	227	229	156	220	202	191
23	169	209	176	222	182	209	204	231	122	233	200	194
24	160	200	214	214	182	223	196	231	165	233	198	190
25	155	204	216	216	186	218	218	224	160	234	198	187
26	151	*205	206	214	186	212	236	226	159	249	192	183
27	153	204	194	211	188	207	228	232	157	267	194	177
28	152	211	192	211	170	210	222	232	166	286	188	201
29	149	200	209	211	-	221	224	234	180	262	115	207
30	149	194	182	212	------	221	223	236	167	259	114	195
31	146	------	144	223	------	226	------	121	------	254	191	------
Total	5,519	5,351	6,155	6,120	5,768	6,296	6,768	6,801	3,758	6,265	6,293	5,479
Mean	178	178	199	197	206	203	226	219	125	202	203	183
Ac-ft	10,950	10,610	12,210	12,140	11,440	12,490	13,420	13,490	7,450	12,430	12,480	10,870

Calendar year 1954: Max 245 Min 8 Mean 177 Ac-ft 128,100
Water year 1954-55: Max 267 Min 64 Mean 193 Ac-ft 140,000

* Discharge measurements made on this day.
Note.--No gage-height record Feb. 3-8, June 4-14; discharge estimated on basis of recorded range in stage and records of power generation for Pacific Power & Light Co.'s plant at Albany.

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 1955, 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.--25 years (1907-16, 1939-55), 7,651 cfs (5,539,000 acre-ft per year).
Extremes.--Maximum discharge during year, 65,200 cfs Dec. 31 (gage height, 17.40 ft); minimum, 729 cfs Aug. 28 (gage height, 2.31 ft).
1905-6, 1907-16, 1939-55: 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, site and datum in use prior to Oct. 1, 1940; corresponding gage height at present site, 24.4 ft, from curve of relation).
Remarks.--Records excellent except those for period of shifting control, which are good. 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. Flow regulated by Detroit Reservoir (see p. 144).
Revisions (water years).--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1922(M), 1943. WSP 1248: 1911, 1915-16(M).

Rating table, water year 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.3	720	9.0	15,400
3.0	1,450	13.0	34,000
4.0	2,800	17.0	61,800
6.0	6,770		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,190	3,440	*5,330	41,500	8,790	7,760	15,800	8,530	8,040	6,310	1,510	920
2	2,360	3,540	4,430	29,500	7,540	10,900	15,200	8,430	7,610	6,720	*1,460	820
3	2,340	3,380	4,070	21,000	6,530	8,060	13,600	7,760	7,980	6,110	1,370	783
4	2,200	3,070	3,990	17,200	5,990	6,410	12,200	*7,510	9,360	5,430	1,340	774
5	2,190	3,440	3,490	15,000	6,240	5,390	10,800	8,170	10,600	5,200	1,280	810
6	2,230	3,740	6,790	13,900	6,480	4,910	9,910	9,580	11,600	4,930	1,220	801
7	2,170	4,030	10,100	10,700	11,800	4,650	10,200	9,770	14,000	4,310	1,230	1,820
8	*2,230	3,900	8,270	8,630	19,500	4,930	11,100	10,400	16,800	4,140	1,190	1,820
9	2,260	3,700	7,260	7,480	*21,600	5,140	12,500	9,820	19,500	4,100	1,140	2,190
10	2,240	3,040	6,770	7,010	14,100	5,050	17,000	9,050	20,000	3,850	1,130	1,950
11	2,750	2,880	5,610	6,530	10,700	6,720	16,300	10,400	19,100	4,070	1,120	1,620
12	4,260	3,510	4,970	5,850	8,950	7,740	17,000	11,600	17,300	3,920	1,110	1,930
13	6,530	3,880	9,990	6,060	7,780	8,110	25,300	10,700	13,400	3,740	1,080	2,310
14	5,330	3,810	9,850	6,180	7,080	7,460	19,700	9,850	10,100	3,880	1,020	2,170
15	4,310	4,870	9,850	5,940	6,460	6,310	15,100	9,530	*8,820	3,850	1,020	1,950
16	3,530	6,410	9,580	6,820	6,060	5,480	13,600	8,760	7,640	3,530	1,020	1,950
17	3,240	18,200	8,010	7,760	5,700	5,030	12,900	8,530	6,720	3,190	980	2,750
18	3,040	19,700	7,010	7,060	5,650	4,730	11,700	8,710	6,110	3,100	920	2,140
19	3,720	17,300	6,060	5,970	4,970	4,510	10,700	11,700	5,650	3,010	910	1,930
20	5,390	13,500	5,830	5,430	4,590	4,120	11,100	15,300	6,110	2,330	900	1,810
21	6,770	11,700	5,830	5,500	4,330	3,880	12,500	13,700	6,110	2,200	910	*1,530
22	15,200	10,400	5,790	5,830	4,100	6,600	20,200	10,900	6,310	2,080	890	1,630
23	11,000	9,310	6,150	6,870	3,990	*10,600	17,700	9,310	7,510	1,980	920	1,550
24	8,820	8,790	8,350	6,870	3,940	16,100	14,700	8,090	6,790	2,110	870	1,500
25	7,510	8,790	8,610	6,770	4,240	20,100	12,800	7,560	6,040	2,030	870	1,420
26	6,010	9,310	7,380	6,510	4,220	19,200	11,800	7,560	5,220	2,070	830	1,650
27	5,160	8,770	6,670	6,180	4,200	15,700	9,990	8,580	5,260	2,360	820	2,000
28	4,280	8,890	7,110	6,080	4,260	16,000	8,870	8,300	5,990	2,160	783	2,480
29	4,310	7,760	*8,350	5,970	-	21,400	9,310	8,610	7,010	2,040	870	2,480
30	3,830	6,500	25,200	5,940	------	20,300	8,660	9,720	6,310	1,770	950	2,070
31	3,810	------	58,000	6,670	------	16,900	------	9,000	------	1,650	850	------
Total	141,210	219,560	284,700	304,710	209,790	290,190	408,240	295,430	288,990	108,170	32,493	51,558
Mean	4,555	7,319	9,184	9,829	7,492	9,361	13,610	9,530	9,633	3,489	1,048	1,719
Ac-ft	280,100	435,500	564,700	604,400	416,100	575,600	809,700	586,000	573,200	214,600	64,450	102,300

Calendar year 1954: Max 58,100 Min 880 Mean 7,444 Ac-ft 5,389,000
Water year 1954-55: Max 58,000 Min 774 Mean 7,219 Ac-ft 5,227,000

* Discharge measurement made on this day.
Note.--Discharge for Nov. 22-30, Dec. 7-21 computed from graph of once-daily Telemark readings and recorded range in stage. Shifting-control method used Oct. 1 to Dec. 6.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 378.7 ft above mean sea level (river-profile survey).

Average discharge.--21 years, 206 cfs (149,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,780 cfs Dec. 30 (gage height, 8.44 ft); minimum daily, 10 cfs Sept. 4-7, 9-12.
1934-55: Maximum discharge, 5,560 cfs Dec. 14, 1946, Feb. 17, 1949; maximum gage height, 13.22 ft Dec. 14, 1946; minimum daily discharge, 5 cfs Oct. 15, 16, 1952.

Remarks.--Records excellent. No regulation or diversion above station; log ponds upstream cause diurnal fluctuation at times.

Revisions (water years).--WSP 834: 1936(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 12				Apr. 13 to Sept. 30			
1.3	12	2.5	240	1.3	10	3.0	343
1.5	33	3.0	385	1.5	31	4.0	640
1.8	78	5.0	1,130	1.8	79	6.0	1,410
2.1	140	7.0	2,060	2.2	155		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	43	109	1,130	277	750	616	209	61	44	21	12
2	15	42	100	762	265	666	494	194	59	40	20	11
3	16	41	96	550	248	470	436	180	58	31	19	11
4	*17	38	91	448	240	358	370	168	56	30	18	10
5	16	45	98	391	232	286	325	155	52	28	17	10
6	16	56	310	334	358	248	283	147	51	28	17	10
7	18	49	430	298	842	218	255	136	47	27	16	10
8	22	48	358	277	1,170	198	230	128	46	30	15	11
9	20	49	310	250	858	185	245	119	44	30	15	10
10	29	61	262	225	582	289	245	115	44	28	*15	10
11	43	68	225	202	430	349	409	110	41	25	15	10
12	64	94	262	190	355	557	*1,110	106	40	24	15	10
13	50	92	418	232	301	508	1,010	104	39	22	14	28
14	36	148	415	215	*255	424	622	99	37	22	14	*26
15	31	*235	487	245	225	358	478	97	37	22	14	43
16	29	427	409	367	202	307	481	90	36	22	13	106
17	29	786	328	585	192	268	436	*90	36	22	13	44
18	26	652	271	476	170	238	376	88	36	22	13	30
19	60	515	232	364	155	215	362	83	35	22	13	24
20	61	379	200	319	145	195	340	79	32	21	12	21
21	190	292	178	277	131	208	321	77	*32	20	12	19
22	185	235	162	262	124	918	356	75	31	20	12	18
23	133	195	178	242	119	680	397	72	31	19	12	17
24	98	165	215	242	150	543	356	70	30	18	12	16
25	80	190	228	271	142	452	319	70	28	19	12	16
26	68	158	210	245	145	391	294	72	28	31	12	15
27	63	152	*195	225	150	340	264	72	28	33	12	17
28	56	140	202	208	386	*337	254	65	40	26	11	21
29	52	128	435	192	-	550	247	63	33	22	11	20
30	50	117	1,880	190	------	930	224	66	33	23	11	17
31	49	-----	1,910	220	-----	770	-----	65	------	23	13	------
Total	1,637	5,640	11,204	10,434	8,849	13,206	12,155	3,264	1,201	794	439	623
Mean	52.8	188	361	337	316	426	405	105	40.0	25.6	14.2	20.8
Cfsm	1.55	5.53	10.6	9.91	9.29	12.5	11.9	3.09	1.18	0.75	0.42	0.61
In.	1.79	6.17	12.26	11.41	9.68	14.45	13.30	3.57	1.31	0.87	0.48	0.68
Ac-ft	3,250	11,190	22,220	20,700	17,550	26,190	24,110	6,470	2,380	1,570	871	1,240

Calendar year 1954: Max 1,910 Min 15 Mean 214 Cfsm 6.29 In. 85.38 Ac-ft 154,800
Water year 1954-55: Max 1,910 Min 10 Mean 190 Cfsm 5.59 In. 75.97 Ac-ft 137,700

Peak discharge (base, 2,000 cfs).--Dec. 30 (8:30 p.m.) 2,780 cfs (8.44 ft).
* Discharge measurement made on this day.

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 1955.

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.--15 years, 468 cfs (338,800 acre-ft per year).

Extremes.--Maximum discharge during year, 5,590 cfs Dec. 31 (gage height, 12.30 ft); minimum, 17 cfs Sept. 6.
1940-55: 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. Small diversions above station for irrigation. Some diurnal fluctuation in summer caused by log ponds above station.

Revisions (water years).--WSP 964: 1941. WSP 1044: Drainage area. WSP 1248: 1945.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
1.6	25	3.0	350	1.4	16	2.5	195
1.8	44	5.0	1,200	1.6	27	3.0	355
2.1	88	10.0	3,800	1.9	55	6.0	1,760
2.5	190			2.2	110	11.0	4,650

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	66	235	2,590	618	1,660	1,440	591	147	95	37	21
2	25	63	223	1,740	604	1,610	1,200	537	138	93	36	20
3	26	63	217	1,300	560	1,230	1,050	494	132	71	33	20
4	*27	60	208	1,100	542	960	906	458	128	66	32	18
5	27	63	220	1,010	532	789	798	422	122	63	31	18
6	27	96	611	848	696	672	712	390	112	63	29	17
7	27	84	980	744	1,600	600	636	366	106	61	29	18
8	30	74	750	686	2,380	542	564	334	102	66	29	20
9	32	77	648	636	1,880	494	555	316	95	66	28	21
10	33	98	543	550	1,340	591	546	302	95	65	*27	19
11	54	113	475	502	1,040	708	888	292	93	59	27	20
12	96	184	515	466	856	1,040	2,140	279	91	53	27	20
13	100	175	858	560	735	1,140	*2,620	279	89	52	27	29
14	64	232	849	519	*640	1,040	1,670	273	87	48	27	*55
15	54	*382	939	636	555	892	1,280	267	85	48	26	46
16	49	656	795	946	498	784	1,280	*252	83	50	26	168
17	44	1,480	674	1,270	458	694	1,140	243	81	48	26	81
18	44	1,210	567	1,100	414	622	985	231	79	46	25	51
19	72	998	527	879	380	560	928	219	77	45	25	42
20	110	736	438	771	355	502	884	210	*73	43	24	38
21	268	571	396	681	334	482	870	201	71	41	23	34
22	298	471	364	627	320	1,700	975	195	69	40	22	33
23	235	402	378	573	299	1,420	1,050	186	73	40	22	32
24	163	350	487	550	338	1,240	956	183	73	39	22	30
25	132	368	611	568	338	1,040	897	177	69	40	23	29
26	110	322	551	519	352	906	843	180	69	48	23	27
27	98	315	*495	482	372	802	740	186	68	66	22	29
28	88	280	499	446	737	762	717	162	89	52	22	34
29	79	265	780	418	-	1,180	708	156	85	45	20	35
30	74	253	3,480	414	-----	2,020	645	156	77	43	20	32
31	72	-----	4,470	450	-----	*1,750	-----	156	------	41	22	------
Total	2,584	10,507	23,781	24,581	19,773	30,432	30,623	8,693	2,758	1,696	812	1,057
Mean	83.4	350	767	793	706	982	1,021	280	91.9	54.7	26.2	35.2
Cfsm	0.725	3.04	6.67	6.90	6.14	8.54	8.88	2.43	0.799	0.476	0.228	0.306
In.	0.84	3.40	7.69	7.95	6.39	9.84	9.90	2.81	0.89	0.55	0.26	0.34
Ac-ft	5,130	20,840	47,170	48,760	39,220	60,360	60,740	17,240	5,470	3,360	1,610	2,100

Calendar year 1954: Max 4,470 Min 25 Mean 475 Cfsm 4.13 In. 56.02 Ac-ft 343,600
Water year 1954-55: Max 4,470 Min 17 Mean 431 Cfsm 3.75 In. 50.86 Ac-ft 312,000

Peak discharge (base, 3,500 cfs).--Dec. 31 (12:30 a.m.) 5,590 cfs (12.30 ft); Apr. 12 (9 p.m.) 3,710 cfs (9.52 ft).
* Discharge measurement made on this day.

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 1955.

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.--21 years (1905-11, 1940-55), 944 cfs (683,400 acre-ft per year).

Extremes.--Maximum discharge during year, 6,700 cfs Dec. 31 (gage height, about 26.4 ft, from partly estimated recorder graph); minimum, 25 cfs Sept. 6, 7.

1905-11, 1940-55: 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, 13 cfs Oct. 17, 18, 1952.

Maximum stage known, 33.5 ft, probably on 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 periods 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).--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.8	26	10.0	950
2.1	42	20.0	3,280
3.0	100	25.0	5,320
4.0	176	26.0	6,140
6.0	378		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	140	422	a6,140	1,000	a2,000	2,900	1,060	297	146	78	33
2	50	134	395	4,280	1,030	a3,500	2,320	995	278	163	71	32
3	47	130	370	2,890	961	2,260	1,930	920	269	143	67	29
4	*50	129	363	2,010	902	1,740	1,660	854	262	128	60	28
5	52	127	352	1,900	907	1,380	1,430	803	249	122	58	26
6	50	151	762	1,580	886	1,180	1,270	763	237	120	52	26
7	50	188	1,810	1,360	1,810	1,040	1,140	729	221	114	47	26
8	53	165	1,600	1,210	3,070	958	1,040	698	208	118	49	26
9	62	158	1,310	1,150	3,880	886	1,000	659	193	127	48	30
10	62	170	1,160	1,010	2,890	875	1,090	628	180	127	47	32
11	70	216	961	902	1,990	1,160	1,360	621	176	120	*44	31
12	130	281	891	814	1,580	1,520	2,110	617	171	108	44	34
13	196	326	1,690	878	a1,360	1,920	*4,670	589	166	100	43	34
14	160	360	1,930	945	*1,230	a2,300	4,230	571	162	94	41	*74
15	124	657	1,860	958	1,080	a1,800	2,790	562	160	88	42	90
16	106	*998	1,690	1,480	969	a1,500	2,340	516	158	92	40	184
17	96	2,040	1,390	2,180	881	a1,250	2,150	*498	154	92	37	234
18	92	2,740	1,160	2,190	806	a1,100	1,830	487	152	92	37	127
19	96	2,380	998	1,680	739	a1,000	1,630	481	151	86	34	97
20	199	1,730	883	1,390	688	a900	1,660	469	*142	83	34	82
21	278	1,250	785	1,210	645	a850	1,600	434	135	78	33	73
22	597	982	719	1,110	607	a850	1,700	407	128	76	34	66
23	480	808	701	1,030	576	a2,900	1,790	a390	129	73	31	63
24	342	688	a800	956	576	a2,400	1,720	a372	135	71	31	62
25	267	641	a1,000	1,010	628	a2,000	1,530	a355	130	72	31	59
26	225	663	a1,200	974	621	a1,700	1,540	a344	129	76	32	55
27	199	573	a1,050	886	a630	a1,500	1,330	363	127	118	34	55
28	178	531	*988	806	a700	*a1,400	1,220	337	142	114	34	62
29	165	487	1,140	745	-	1,910	1,290	308	160	95	34	70
30	154	452	2,730	712	------	3,000	1,150	305	142	87	32	67
31	146	-----	a5,380	723	-----	3,610	-----	311	------	83	30	------
Total	4,826	20,295	38,490	47,109	33,642	52,389	55,420	17,446	5,343	3,206	1,329	1,907
Mean	156	676	1,242	1,520	1,202	1,690	1,847	563	178	103	42.9	63.6
Cfsm	0.650	2.82	5.17	6.33	5.01	7.04	7.70	2.35	0.742	0.429	0.179	0.265
In.	0.75	3.14	5.96	7.30	5.21	8.12	8.59	2.70	0.83	0.50	0.21	0.30
Ac-ft	9,570	40,250	76,340	93,440	66,730	103,900	109,900	34,600	10,600	6,360	2,640	3,780

Calendar year 1954: Max 7,170 Min 44 Mean 941 Cfsm 3.92 In. 53.23 Ac-ft 681,200
Water year 1954-55: Max 6,140 Min 26 Mean 771 Cfsm 3.21 In. 43.61 Ac-ft 558,100

Peak discharge (base, 6,600 cfs).--Dec. 31 (about 12 p.m.) 6,700 cfs (about 26.4 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for stations at Pedee and near Hoskins and South Yamhill River near Whiteson.

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 1955. 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.--35 years, 23,100 cfs (16,720,000 acre-ft per year).

Extremes.--Maximum discharge during year, 107,000 cfs Jan. 1 (gage height, 14.64 ft); minimum, 5,820 cfs Sept. 5 (gage height, -3.15 ft).
1909-16, 1927-55: 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 good. 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 Lookout Point, Cottage Grove, Fern Ridge, Dorena, and Detroit Reservoirs (see p.109,114,134,117,144). Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-17)

-3.1	5,950
0	15,500
6.0	42,000
12.0	85,000
15.0	110,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,800	10,200	13,200	103,000	21,900	19,600	53,000	28,600	23,500	15,600	6,880	6,350
2	7,800	9,600	11,800	103,000	23,900	30,600	49,200	26,900	21,900	15,900	6,820	*6,350
3	8,100	9,300	10,600	83,900	22,700	38,400	45,700	25,600	*20,400	15,600	6,750	6,200
4	8,100	9,000	10,500	59,900	20,200	33,000	41,400	24,100	20,900	14,200	6,700	6,050
5	7,800	8,700	10,500	46,300	19,000	26,300	36,200	22,800	22,800	13,900	6,750	5,950
6	7,500	9,000	12,000	41,200	18,600	21,700	32,500	23,600	25,100	13,400	6,700	6,020
7	7,500	9,000	23,400	35,400	21,000	18,700	31,000	24,500	28,400	12,400	6,600	6,500
8	7,500	9,000	26,700	29,800	32,800	17,100	30,700	25,100	33,300	11,500	6,600	7,080
9	7,800	8,700	22,900	26,700	47,300	17,200	31,600	25,700	37,100	11,400	6,600	7,260
10	7,800	*8,100	20,100	26,500	47,100	17,900	36,200	24,300	39,400	11,000	6,580	7,620
11	8,100	7,740	17,300	28,100	37,400	18,300	40,200	23,500	40,300	10,500	6,520	7,410
12	9,300	8,310	15,300	26,200	30,200	21,700	45,700	25,400	37,100	10,800	6,450	7,260
13	12,000	9,090	20,800	25,100	25,900	25,200	63,700	26,500	33,400	10,300	6,450	7,860
14	12,700	9,540	27,600	25,700	23,100	28,000	72,800	25,300	28,100	10,100	6,450	8,430
15	11,700	10,500	*29,100	23,500	20,700	26,700	67,400	25,700	24,900	10,400	6,380	8,610
16	10,200	12,700	27,400	25,100	18,800	23,700	54,400	25,800	21,900	10,200	6,300	8,430
17	9,300	22,300	24,100	31,100	17,600	20,700	47,500	24,300	19,500	9,900	6,350	9,180
18	9,000	39,300	20,800	32,600	16,900	18,500	44,400	22,700	17,800	9,120	6,300	9,450
19	9,600	37,200	17,900	28,200	16,100	17,000	40,600	23,400	16,300	9,480	6,250	8,550
20	10,500	30,800	16,400	24,700	14,700	15,700	38,900	28,100	15,600	8,790	6,300	8,160
21	13,000	26,100	15,600	22,600	13,900	14,700	41,700	32,400	15,900	8,010	6,250	7,830
22	18,300	22,900	14,800	22,000	13,300	15,200	52,500	31,900	16,100	7,590	6,200	8,040
23	21,900	20,500	14,500	23,900	12,800	*25,100	60,600	30,600	17,900	7,350	6,150	7,620
24	18,700	18,700	16,800	25,800	12,500	32,000	56,900	27,500	17,500	7,440	6,200	7,410
25	16,300	17,600	22,900	24,900	12,600	41,600	46,800	24,000	16,200	7,590	6,180	7,320
26	14,100	18,400	25,800	*23,700	13,000	47,300	*40,700	22,100	14,300	7,770	6,150	7,100
27	12,400	17,700	23,200	22,700	13,500	43,900	36,500	21,700	13,900	7,980	6,080	7,410
28	11,100	17,600	21,000	21,200	13,900	40,400	33,000	21,700	14,500	*9,000	6,200	8,100
29	10,800	16,500	21,100	20,200	-	45,800	31,300	21,000	15,700	9,570	6,180	8,550
30	10,200	15,300	31,700	19,200	------	57,600	31,200	22,300	16,200	8,760	6,150	8,760
31	10,200	-----	77,500	19,100	-----	59,300	-----	23,500	------	7,180	6,220	------
Total	337,100	469,380	663,300	‡1,071.3	601,400	878,900	‡1,334.3	780,600	685,900	322,730	198,690	226,860
Mean	10,870	15,650	21,400	34,560	21,480	28,350	44,480	25,180	22,860	10,410	6,409	7,562
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	668,600	931,000	‡1,316	‡2,125	‡1,193	‡1,743	‡2,647	‡1,548	‡1,360	640,100	394,100	450,000

Calendar year 1954: Max 152,000 Min 6,080 Mean 22,790 Cfsm 3.13 In. 42.51 Ac-ft 16,500,000
Water year 1954-55: Max 103,000 Min 5,950 Mean 20,740 Cfsm 2.85 In. 38.67 Ac-ft 15,020,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--Discharge for Oct. 1 to Nov. 10 computed from once-daily Telemark readings.

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, 2 3/4 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 1955 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.--16 years (1939-55), 367 cfs (265,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,750 cfs Apr. 12 (gage height, 4.75 ft); minimum, 86 cfs July 3.
1938-55: 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 or dike on control, 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.--WSP 1218: Drainage area.

Rating table, water year 1954-55, except periods of shifting control or backwater from debris or dike (gage height, in feet, and discharge, in cubic feet per second)

0.2	90	2.0	480
.5	130	3.0	840
1.0	220	5.0	1,900

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	160	306	1,150	329	562	660	349	168	170	151	*187
2	144	160	283	860	293	483	636	323	167	165	148	172
3	151	160	271	713	276	420	573	300	183	90	*140	170
4	146	154	264	682	296	389	504	278	189	149	160	167
5	146	165	288	760	300	342	456	257	185	163	154	174
6	144	200	640	626	334	318	*406	241	176	170	144	170
7	146	190	732	548	336	300	362	228	174	*187	148	198
8	146	185	524	520	578	288	347	216	165	190	136	206
9	153	194	531	629	534	274	370	208	163	189	128	212
10	163	185	468	514	441	269	370	200	160	176	*127	210
11	168	187	395	462	400	283	556	194	160	168	127	204
12	187	293	487	429	368	339	1,040	189	158	168	128	210
13	190	257	924	*456	349	349	1,360	192	154	160	127	235
14	179	296	748	432	323	376	1,080	269	170	174	130	228
15	176	387	736	483	303	365	776	278	176	163	130	210
16	172	395	590	556	288	355	748	233	174	165	*118	194
17	168	962	504	556	*271	306	724	210	177	167	114	189
18	*163	868	447	489	252	286	622	*198	177	167	122	166
19	174	800	400	438	241	269	570	202	176	167	140	161
20	202	615	376	420	233	255	640	196	177	167	144	158
21	246	495	352	403	224	246	740	187	176	163	148	154
22	306	426	355	429	218	398	952	177	176	158	167	163
23	262	378	409	395	212	395	740	170	192	156	158	161
24	222	344	650	368	212	615	636	168	189	165	153	156
25	190	462	912	360	208	542	552	167	181	165	160	149
26	192	435	768	329	271	504	548	167	176	190	163	149
27	189	453	587	313	290	432	480	179	177	176	165	161
28	185	426	643	298	342	477	435	174	196	167	158	189
29	167	376	660	288	-	710	462	170	181	174	161	176
30	168	339	1,120	288	- - -	980	389	172	176	174	172	179
31	167	------	1,370	308	------	724	------	172	------	168	177	------
Total	5,548	10,947	17,740	15,502	8,722	12,851	18,734	6,664	5,249	5,171	4,496	5,460
Mean	179	365	572	500	312	415	624	215	175	167	145	182
Ac-ft	11,000	21,710	35,190	30,750	17,300	25,490	37,160	13,220	10,410	10,260	8,920	10,830

Calendar year 1954: Max 3,140 Min 50 Mean 355 Ac-ft 257,100
Water year 1954-55: Max 1,370 Min 90 Mean 321 Ac-ft 232,200

* Discharge measurement made on this day.
Note.--Backwater from debris or dike Oct. 1 to Nov. 16, June 28 to Sept. 30. Shifting-control method used Dec. 30 to Jan. 31.

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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 1955 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 at site 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.--16 years (1939-55), 144 cfs (104,300 acre-ft per year).

Extremes.--Maximum discharge during year, 766 cfs Apr. 13 (gage height, 4.16 ft); minimum, 17 cfs Aug. 17.
1938-55: Maximum discharge, 1,350 cfs Jan. 28, 1954 (gage height, 7.07 ft); no flow Oct. 2, 1938.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Salem power canal diverts water into Mill Creek near Stayton; several diversions from Mill Creek, including Shelton flood bypass 1¼ miles upstream, and 19th Street power diversion 220 ft upstream. Diurnal fluctuation caused by powerplants above station.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 22-24)

0.7	18	1.5	117
.9	34	2.0	217
1.2	70	4.0	724

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	53	150	550	200	324	391	222	60	70	47	*62
2	31	53	140	460	180	295	376	196	56	141	43	53
3	36	51	130	380	160	240	343	175	66	90	38	53
4	33	47	120	340	160	219	298	157	73	111	53	51
5	32	52	120	380	160	183	269	126	70	60	53	55
6	31	81	320	320	200	171	*235	112	66	65	43	52
7	31	76	360	280	200	146	206	100	62	*70	45	66
8	31	70	270	280	300	132	194	92	56	71	40	77
9	34	83	270	340	300	121	202	84	52	73	34	81
10	43	71	220	280	250	125	213	77	52	64	*32	77
11	46	70	190	250	230	140	305	73	50	61	30	74
12	61	138	210	230	210	175	503	69	51	58	31	78
13	65	125	400	*254	190	190	626	71	45	55	29	107
14	53	134	360	230	170	206	508	124	57	62	31	*132
15	49	179	360	260	160	200	407	146	64	55	28	115
16	46	202	300	310	150	175	381	98	62	57	*22	89
17	47	422	260	300	*132	159	383	81	58	60	20	78
18	*41	428	220	280	110	144	346	*77	60	53	21	65
19	60	404	200	250	92	128	319	87	58	56	27	56
20	77	322	190	240	87	119	346	83	64	55	29	57
21	102	259	170	230	80	98	381	76	64	53	33	50
22	151	211	180	240	76	202	456	67	64	51	43	61
23	146	183	200	220	71	228	396	61	76	47	38	65
24	125	*155	340	210	71	353	360	56	76	50	34	61
25	84	210	460	200	66	338	317	57	69	51	40	58
26	80	200	420	190	108	300	310	57	67	67	41	58
27	80	210	340	180	140	266	286	66	65	62	44	71
28	69	200	360	170	142	290	262	61	86	56	41	92
29	57	180	360	160	-	420	288	61	81	61	41	77
30	57	160	500	160	----	547	245	61	73	57	49	70
31	56	----	600	180	---	446	------	61	---- -	55	53	--- --
Total	1,884	5,029	8,720	8,354	4,395	7,080	10,152	2,934	1,903	1,997	1,153	2,141
Mean	60.8	168	281	269	157	228	338	94.6	63.4	64.4	37.2	71.4
Ac-ft	3,740	9,970	17,300	16,570	8,720	14,040	20,140	5,820	3,770	3,960	2,290	4,250

Calendar year 1954: Max 1,140 Min 25 Mean 152 Ac-ft 110,200
Water year 1954-55: Max 626 Min 20 Mean 153 Ac-ft 110,600

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 25 to Jan. 12, Jan. 14 to Feb. 16, July 5, 6; discharge estimated on basis of recorded range in stage and records for station at penitentiary annex near Salem.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 235.55 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--21 years, 607 cfs (439,400 acre-ft per year).

Extremes.--Maximum discharge during year, 7,120 cfs Dec. 31 (gage height, 9.23 ft); minimum, 10 cfs Sept. 7 (gage height, 0.47 ft); minimum daily, 12 cfs Sept. 7.
1934-55: Maximum discharge, 15,200 cfs Feb. 10, 1949 (gage height, 14.80 ft); minimum, 2.6 cfs Oct. 11, 1952; minimum daily, 5.6 cfs Sept. 18, 1951, Oct. 11, 1952.

Remarks.--Records good. Slight regulation occasionally during summer by millpond upstream. No diversion above station.

Revisions.--WSP 814: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
0.7	30	3.0	845	0.5	12	2.5	610
.8	42	4.5	1,840	.6	20	4.0	1,540
.9	58	6.0	3,200	.8	42	6.0	3,250
1.2	124	7.0	4,270	1.0	77	9.0	6,800
2.0	377			1.5	210		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	116	377	4,020	980	2,040	1,930	575	189	138	52	22
2	34	109	344	2,660	842	1,760	1,580	538	174	135	48	22
3	34	104	322	1,860	759	1,430	1,340	506	166	104	44	19
4	35	99	308	1,500	754	1,140	1,120	470	166	95	45	19
5	*35	102	404	1,300	742	908	950	446	160	92	42	17
6	34	143	1,500	1,060	866	770	830	430	154	90	38	16
7	37	119	1,480	900	1,820	671	737	406	151	86	38	12
8	62	127	1,070	850	3,450	610	660	386	148	90	37	16
9	58	163	954	710	2,420	560	890	358	140	90	*35	20
10	55	246	828	610	1,650	693	842	346	132	81	34	19
11	146	237	690	542	1,250	956	1,120	346	124	77	32	19
12	256	298	823	492	998	1,550	2,820	350	114	69	32	19
13	192	288	1,400	726	842	1,540	2,530	343	106	66	31	24
14	146	638	1,190	660	*704	1,360	1,760	340	102	58	30	75
15	119	*1,080	1,530	794	610	1,140	1,400	318	99	56	30	*79
16	102	1,680	1,190	1,330	533	980	1,360	*280	95	58	30	362
17	97	2,500	990	2,310	488	842	1,150	276	90	58	29	174
18	88	2,350	818	1,810	438	737	1,000	266	88	56	26	109
19	204	2,190	690	1,390	394	704	938	273	84	56	29	79
20	207	1,550	590	1,140	362	570	860	266	79	52	28	68
21	625	1,120	508	938	336	560	782	245	*77	50	27	58
22	545	845	467	872	322	2,250	818	224	77	47	24	52
23	411	680	595	770	312	1,770	890	210	79	45	22	48
24	305	550	806	742	354	1,510	812	195	81	42	24	47
25	250	625	850	890	382	1,230	754	186	84	44	24	42
26	213	513	745	726	398	1,070	806	189	77	76	27	37
27	183	585	*665	640	418	932	715	195	79	99	26	42
28	163	487	665	565	1,160	998	682	180	122	73	25	81
29	143	451	1,100	515	-	1,940	682	174	122	64	22	60
30	135	411	4,260	506	------	2,080	620	198	99	60	21	50
31	127	------	6,290	650	------	*1,880	------	207	------	58	24	------
Total	5,075	20,406	34,449	34,478	24,584	37,181	33,378	9,722	3,458	2,265	976	1,707
Mean	164	680	1,111	1,112	878	1,199	1,113	314	115	73.1	31.5	56.9
Cfsm	1.23	5.11	8.35	8.36	6.60	9.02	8.37	2.36	0.865	0.550	0.237	0.428
In.	1.42	5.71	9.63	9.64	6.87	10.40	9.33	2.72	0.97	0.63	0.27	0.48
Ac-ft	10,070	40,470	68,330	68,390	48,760	73,750	66,200	19,280	6,860	4,490	1,940	3,390

Calendar year 1954: Max 7,610 Min 28 Mean 675 Cfsm 5.08 In. 68.84 Ac-ft 488,400
Water year 1954-55: Max 6,290 Min 12 Mean 569 Cfsm 4.28 In. 58.07 Ac-ft 411,900

Peak discharge (base, 5,700 cfs).--Dec. 31 (6 a.m.) 7,120 cfs (9.23 ft).
* Discharge measurement made on this day.

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 1955.

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.--21 years, 249 cfs (180,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,960 cfs Dec. 30 (gage height, 7.56 ft); minimum, 14 cfs Sept. 5-7.
1934-55: 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 periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions.--WSP 964: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	14	3.0	257
1.5	18	4.0	585
1.8	41	5.0	1,040
2.1	75	7.0	2,410
2.5	143		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	43	a180	1,440	446	688	850	304	99	72	30	18
2	20	42	a170	1,040	394	617	714	282	94	62	29	17
3	21	42	a160	768	355	502	605	264	92	54	28	16
4	23	41	a150	629	343	410	517	252	89	51	28	15
5	*22	43	a200	537	334	355	491	240	85	51	26	14
6	23	49	299	449	400	316	407	232	81	51	24	14
7	23	45	310	388	886	296	379	224	78	49	24	15
8	26	46	262	352	1,390	282	358	217	72	58	*24	17
9	24	49	254	316	1,040	264	382	205	68	54	24	17
10	35	66	230	285	755	370	385	196	66	49	23	17
11	54	68	205	260	585	435	456	189	63	47	23	17
12	63	107	244	242	477	605	896	183	62	43	23	16
13	50	94	358	329	404	585	905	181	62	41	23	30
14	40	189	a350	304	*352	521	696	174	62	39	22	35
15	35	*a350	a450	343	316	470	585	163	62	38	21	*45
16	31	a500	a430	491	285	418	585	*153	60	39	21	79
17	33	585	410	900	257	376	509	147	59	39	21	36
18	31	633	355	701	234	346	452	145	59	37	21	a30
19	69	533	319	553	217	322	432	143	56	37	20	a26
20	71	349	a270	477	205	296	410	141	54	36	19	a24
21	200	288	a240	424	192	325	382	131	*52	35	19	a23
22	157	257	224	407	187	935	407	123	52	34	18	a22
23	110	a250	232	388	178	746	442	118	54	33	19	a21
24	86	a240	282	385	203	645	410	112	53	33	19	a20
25	75	a260	277	446	203	565	382	109	54	33	19	a19
26	65	240	250	400	200	505	385	110	52	42	20	18
27	59	242	*230	358	207	456	352	107	54	43	19	22
28	54	222	237	328	426	470	343	100	78	39	19	31
29	51	207	444	304	-	755	346	100	62	36	18	a26
30	48	194	1,930	304	------	1,040	319	109	58	34	18	a22
31	45	------	2,160	346	------	*965	------	107	------	32	19	------
Total	1,664	6,274	12,012	14,893	11,471	15,881	14,782	5,261	1,992	1,341	681	722
Mean	53.7	209	387	480	410	512	493	170	66.4	43.3	22.0	24.1
Cfsm	0.826	3.22	5.95	7.38	6.31	7.88	7.58	2.62	1.02	0.666	0.338	0.371
In.	0.95	3.59	6.87	8.52	6.56	9.09	8.46	3.01	1.14	0.77	0.39	0.41
Ac-ft	3,300	12,440	23,830	29,540	22,750	31,500	29,320	10,440	3,950	2,660	1,350	1,430

Calendar year 1954: Max 2,800 Min 20 Mean 266 Cfsm 4.09 In. 55.49 Ac-ft 192,400
Water year 1954-55: Max 2,160 Min 14 Mean 238 Cfsm 3.66 In. 49.76 Ac-ft 172,500

Peak discharge (base, 2,300 cfs).--Dec. 30 (8 p.m.) 2,960 cfs (7.56 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 South Yamhill River near Willamina.

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 1¼ miles northwest of Whiteson.

Drainage area.--502 sq mi.

Records available.--July 1940 to September 1955.

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.--15 years, 1,696 cfs (1,228,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,800 cfs Jan. 1 (gage height, 37.35 ft); minimum, 30 cfs Sept. 8.
1940-55: Maximum discharge, 28,900 cfs Feb. 11, 1949 (gage height, 43.39 ft); minimum, 8.5 cfs Sept. 25, 26, 1952 (gage height, 0.80 ft).

Remarks.--Records fair. Slight regulation during low-water periods from log pond upstream. Small diversions above station for irrigation.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Oct. 12 to Nov. 15, Sept. 15, 16; rate of change in stage used as a factor Nov. 17, 20, 21, Dec. 6, 8, 9, 30, 31, Jan. 2-7, 16, 18-22, Feb. 7, 11, 12, Mar. 5, 12, 15-17, 22, 24-26, 29, 30, Apr. 14-19)

Oct. 1 to Dec. 31		Jan. 1 to Sept. 30					
1.7	60	1.1	30	4.0	334	25.0	6,200
2.0	87	1.5	52	6.0	680	35.0	10,800
3.0	193	2.0	88	10.0	1,500	38.0	13,600
		3.0	193	15.0	2,800		

Note.--Same as following table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	246	1,070	12,400	2,770	3,500	*5,920	1,980	558	240	104	47
2	65	229	988	10,200	2,970	5,500	5,100	1,840	502	310	93	49
3	65	216	920	7,790	2,600	4,500	4,140	1,700	474	268	86	45
4	66	205	882	5,110	2,340	3,700	3,480	1,580	474	232	77	38
5	*67	196	859	4,190	2,340	3,080	2,940	1,480	454	216	77	36
6	67	215	1,890	3,580	2,340	2,580	2,560	1,410	434	209	72	33
7	69	284	4,030	3,050	3,910	2,240	2,290	1,340	401	211	71	32
8	74	*250	3,620	2,680	5,740	2,060	2,100	1,270	379	212	69	32
9	111	292	2,960	2,510	7,590	1,920	2,000	1,200	350	229	65	35
10	133	371	2,650	2,230	6,140	1,840	2,400	1,130	326	224	60	40
11	133	576	2,220	1,980	4,200	2,450	2,540	1,100	310	210	*52	42
12	362	669	1,930	1,800	3,260	3,180	3,580	1,090	300	191	53	46
13	513	773	3,320	1,970	2,780	4,000	7,540	1,060	283	176	53	45
14	364	908	4,140	2,390	2,380	4,300	7,040	1,030	260	162	56	100
15	273	1,980	4,100	2,380	*2,070	3,860	4,950	1,020	253	152	59	*116
16	224	2,960	3,930	3,690	1,850	3,210	3,980	934	247	145	57	337
17	205	4,530	3,240	6,150	1,680	2,760	3,670	*886	239	157	53	576
18	191	5,980	2,660	7,160	1,530	2,420	3,250	853	232	145	54	277
19	186	6,080	2,240	5,530	1,390	2,180	2,820	836	231	120	52	202
20	509	5,070	1,930	3,990	1,310	1,960	2,730	836	*229	111	52	155
21	682	3,600	1,700	3,210	1,210	1,790	2,900	783	214	105	51	126
22	1,490	2,640	1,540	2,840	1,140	2,780	2,940	724	201	100	52	113
23	1,130	2,060	1,480	2,670	1,090	4,960	2,840	676	201	95	45	105
24	832	1,680	2,100	2,450	1,080	4,000	2,800	644	212	96	40	103
25	653	1,510	2,740	2,590	1,250	3,440	2,500	608	214	95	42	100
26	532	1,590	3,020	2,560	1,300	3,070	2,570	588	215	91	45	90
27	440	1,460	2,700	2,250	1,450	2,750	2,460	594	202	146	49	85
28	377	1,390	*2,400	2,010	1,770	2,520	2,270	559	228	174	52	100
29	332	1,260	2,670	1,840	-	3,690	2,250	529	312	135	50	161
30	292	1,150	5,260	1,770	------	5,200	2,140	531	253	123	39	135
31	268	-----	9,910	1,820	-----	6,450	-----	592	------	111	42	------
Total	10,770	50,370	85,099	116,790	71,480	101,890	100,700	31,403	9,188	5,191	1,822	3,401
Mean	347	1,679	2,745	3,767	2,553	3,287	3,357	1,013	306	167	58.8	113
Cfsm	0.691	3.34	5.47	7.50	5.09	6.55	6.69	2.02	0.610	0.333	0.117	0.225
In.	0.80	3.73	6.30	8.65	5.30	7.55	7.46	2.33	0.68	0.38	0.13	0.25
Ac-ft	21,360	99,910	168,800	231,600	141,800	202,100	199,700	62,290	18,220	10,300	3,610	6,750

Calendar year 1954: Max 17,800 Min 47 Mean 1,972 Cfsm 3.93 In. 53.32 Ac-ft 1,428,000
Water year 1954-55: Max 12,400 Min 32 Mean 1,611 Cfsm 3.21 In. 43.56 Ac-ft 1,166,000

Peak discharge (base, 9,300 cfs).--Jan. 1 (11 a.m.) 12,800 cfs (37.35 ft).
* Discharge measurement made on this day.

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 1955.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (surveys of city of McMinnville).

Extremes.--Maximum contents during year, 748 acre-ft Nov. 17 (elevation, 835.65 ft); reservoir empty most of time Nov. 23 to Apr. 18.
1951-55: Maximum contents, that of Nov. 17, 1954; reservoir empty most of time during winter months.

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 each siphon is 350 cfs. 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.

Month-end elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	833.7	703	-
Oct. 31	835.1	735	+32
Nov. 30	-	0	-735
Dec. 31	-	0	0
Calendar year 1954	-	-	0
Jan. 31	-	0	0
Feb. 28	-	0	0
Mar. 31	-	0	0
Apr. 30	835.0	733	+733
May 31	835.3	740	+7
June 30	835.1	735	-5
July 31	835.0	733	-2
Aug. 31	832.2	670	-63
Sept.30	831.9	664	-6
Water year 1954-55	-	-	-39

† Elevations at 4 p.m.

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 downstream from dam of McMinnville water-supply reservoir and 11 miles northwest of McMinnville.

Drainage area.--7.1 sq mi, approximately.

Records available.--October 1951 to September 1955.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 707 ft above mean sea level (topographic survey of 1955). Prior to Aug. 5, 1952, at site 600 ft upstream at different datum.

Extremes.--Maximum discharge during year, 474 cfs Apr. 29; minimum daily, 2.8 cfs Sept. 16-22.
1951-55: Maximum discharge, 558 cfs Apr. 9, 1952, when gate in outlet tunnel of reservoir failed; minimum daily, 0.3 cfs Oct. 1, 2, 1951.

Remarks.--Records good above 10 cfs and fair below. 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 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.3	3.8	16	146	50	49	99	40	14	10	4.6	3.7
2	3.3	4.0	15	107	46	42	82	41	13	8.9	4.7	4.1
3	3.3	4.0	13	79	42	37	72	40	13	7.6	4.7	4.4
4	3.3	4.0	13	64	41	30	62	36	13	7.6	*4.7	4.4
5	3.2	4.2	18	56	40	28	56	36	13	7.6	4.7	4.4
6	*3.2	4.7	43	48	62	26	54	36	12	7.6	4.9	4.4
7	3.2	4.4	41	44	136	26	54	36	11	7.6	5.0	4.4
8	3.2	4.7	34	41	206	26	54	35	10	8.0	4.6	4.0
9	3.2	*5.7	34	36	126	26	61	33	10	7.6	4.3	3.7
10	3.2	6.9	29	34	89	37	64	31	9.8	7.6	4.3	3.4
11	3.3	7.3	26	32	70	47	65	31	9.1	7.2	5.0	3.3
12	3.3	7.7	34	32	59	64	124	30	9.3	6.8	4.7	3.1
13	3.3	7.7	45	40	52	55	115	*28	8.8	7.0	4.3	2.9
14	4.2	20	42	36	46	49	88	26	9.0	6.1	4.3	2.9
15	4.7	39	49	37	*41	43	73	23	8.7	5.4	4.1	3.0
16	4.4	67	47	47	37	38	70	22	9.3	4.9	3.9	*2.8
17	4.2	98	*42	58	35	37	62	21	9.3	5.5	4.6	2.8
18	4.0	150	37	49	32	35	25	20	9.0	5.5	5.2	2.8
19	7.3	174	35	44	30	32	3.0	20	9.1	5.3	5.3	2.8
20	7.3	162	31	42	28	30	3.2	18	8.7	5.5	4.9	2.8
21	20	141	28	40	27	37	3.2	18	8.7	5.2	4.7	2.8
22	12	114	26	41	26	88	3.2	18	*8.1	5.0	4.7	2.8
23	9.2	51	28	41	25	72	3.2	19	8.1	4.9	4.5	3.1
24	7.3	26	36	46	27	65	3.1	18	8.3	4.0	4.3	3.1
25	6.1	27	32	51	25	61	3.1	15	8.7	4.3	4.1	3.1
26	5.0	22	28	48	24	56	18	16	8.7	6.1	3.7	3.1
27	4.7	24	26	46	22	52	52	16	8.3	5.7	3.7	3.1
28	4.4	20	28	42	41	61	47	15	11	4.9	3.7	3.1
29	4.2	18	47	40	-	*92	46	15	8.4	4.7	4.3	3.1
30	4.2	17	166	39	-------	117	46	15	7.6	4.5	4.8	3.1
31	4.0	-------	216	47	-------	111	-------	15	-------	4.5	4.0	-------
Total	159.5	1,239.1	1,305	1,553	1,485	1,569	1,511.0	783	295.0	193.1	139.3	100.5
Mean	5.15	41.3	42.1	50.1	53.0	50.6	50.4	25.3	9.83	6.23	4.49	3.35
Ac-ft	316	2,460	2,590	3,080	2,950	3,110	3,000	1,550	585	383	276	199

Adjusted for change in contents in Haskins Creek Reservoir

Mean	5.66	28.9	42.1	50.1	53.0	50.6	62.7	25.4	9.75	6.20	3.46	3.24
Cfsm	0.797	4.07	5.93	7.06	7.46	7.13	8.83	3.58	1.37	0.873	0.487	0.456
In.	0.92	4.54	6.84	8.13	7.79	8.21	9.85	4.12	1.53	1.01	0.56	0.51
Ac-ft	348	1,720	2,590	3,080	2,950	3,110	3,730	1,560	580	381	213	193

Observed

Calendar year 1954: Max 307 Min 2.9 Mean 33.4 Ac-ft 24,180
Water year 1954-55: Max 216 Min 2.8 Mean 28.3 Ac-ft 20,500

Adjusted

Calendar year 1954: Mean 33.4 Cfsm 4.70 In. 63.85 Ac-ft 24,180
Water year 1954-55: Mean 28.3 Cfsm 3.99 In. 54.01 Ac-ft 20,460

* Dischsrge measurement made on this day.

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 1955.

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.

Average discharge.--7 years, 259 cfs (187,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,240 cfs Dec. 30 (gage height, 6.18 ft); minimum, 8.0 cfs Sept. 5, 6.
1948-55: Maximum discharge, 6,280 cfs Feb. 10, 1949 (gage height, 9.98 ft); minimum, 6.0 cfs Sept. 21, 22, 23, Oct. 7, 8, 1952.

Remarks.--Records excellent. 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
1.2	12	2.5	200	1.0	7.4	2.5	211
1.5	32	3.0	365	1.2	14	3.0	380
1.8	62	4.0	820	1.4	25	4.0	830
2.0	91	5.0	1,400	1.7	53	5.3	1,610
				2.0	95		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	29	124	1,030	373	608	630	275	90	53	22	11
2	12	28	116	735	328	500	545	269	88	50	20	10
3	13	28	112	568	296	396	468	256	86	44	19	10
4	14	28	108	472	286	328	408	243	84	42	18	10
5	14	28	128	444	286	289	370	240	80	42	17	8.9
6	*14	34	400	373	362	262	348	237	77	43	16	8.9
7	14	32	400	334	720	253	334	230	73	40	16	8.9
8	27	*34	302	314	1,430	249	328	224	67	50	15	11
9	20	38	281	286	880	240	362	208	61	52	15	11
10	27	49	239	259	635	328	373	199	58	45	15	11
11	38	52	209	237	504	384	436	196	57	40	15	11
12	51	84	260	224	428	545	876	191	56	37	*14	10
13	36	78	400	320	366	500	755	*182	54	33	14	14
14	28	192	390	289	328	432	581	177	53	31	14	19
15	26	302	480	366	*292	373	488	164	53	28	13	24
16	23	424	396	550	265	338	480	156	52	30	13	*46
17	22	855	334	755	243	310	420	149	51	29	13	21
18	22	980	281	545	221	292	348	144	50	27	12	16
19	42	880	242	436	205	275	328	142	48	27	12	15
20	48	645	215	388	191	256	324	138	45	26	12	14
21	148	476	192	352	182	265	296	129	43	24	12	14
22	105	365	177	348	174	715	314	121	*42	23	12	13
23	73	260	192	352	164	545	338	117	43	21	11	13
24	57	195	292	352	182	456	317	111	43	22	11	13
25	50	200	288	400	174	428	300	106	48	23	12	12
26	44	174	245	366	174	388	324	106	45	35	12	12
27	39	177	218	328	188	359	324	104	42	31	12	15
28	37	157	*227	292	458	404	314	97	65	27	11	18
29	34	146	364	269	-	*612	317	95	52	25	10	17
30	32	135	1,390	265	------	840	292	99	46	24	10	15
31	31	-----	1,610	296	-----	730	-----	99	------	23	12	------
Total	1,153	7,105	10,612	12,545	10,335	12,900	12,338	5,204	1,752	1,047	430	432.7
Mean	37.2	237	342	405	369	416	411	168	58.4	33.8	13.9	14.4
Cfsm	0.557	3.55	5.12	6.06	5.52	6.23	6.15	2.51	0.874	0.506	0.208	0.216
In.	0.64	3.96	5.91	6.98	5.75	7.18	6.87	2.90	0.98	0.58	0.24	0.24
Ac-ft	2,290	14,090	21,050	24,880	20,500	25,590	24,470	10,320	3,480	2,080	853	858

Calendar year 1954: Max 3,010 Min 12 Mean 251 Cfsm 3.76 In. 50.94 Ac-ft 181,400
Water year 1954-55: Max 1,610 Min 8.9 Mean 208 Cfsm 3.11 In. 42.23 Ac-ft 150,500

Peak discharge (base, 2,500 cfs).--No peak above base.
* Discharge measurement made on this day.

Willamette River at Wilsonville, Oreg.

Location.--Lat 45°17'35", long 122°46'15", in SE¼ sec. 23, T. 3 S., R. 1 W., in upstream side of pier of bridge at Wilsonville, 1¼ miles downstream from Corral Creek, and 3 miles upstream from Molalla River.

Drainage area.--8,400 sq mi, approximately.

Records available.--October 1948 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 50.00 ft above mean sea level, datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to Oct. 1, 1954, staff gage at Butteville 4 miles upstream at same datum.

Average discharge.--7 years, 29,960 cfs (21,690,000 acre-ft per year).

Extremes.--Maximum discharge during year, 114,000 cfs Jan. 2 (elevation, 71.78 ft); minimum daily, 6,200 cfs Sept. 5 (computed from records for station at Salem).
1948-55: Maximum discharge, 248,000 cfs Jan. 21, 1953 (elevation, 90.00 ft, site then in use; about 87 ft at present site; minimum daily, 3,600 cfs Nov. 29, 30, 1952. Maximum stage known, about 105 ft at Wilsonville, Dec. 4, 1861.

Remarks.--Records good except those for periods of backwater from stoplogs, gates and locks at dam, which are fair. Flow regulated at times by Lookout Point, Cottage Grove, Fern Ridge, Dorena, and Detroit Reservoirs. Many small diversions for irrigation above station.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,000	10,500	16,000	101,000	22,800	21,400	68,100	36,700	26,800	17,000	7,600	6,800
2	8,000	10,000	14,000	112,000	26,700	32,400	62,900	34,000	25,600	17,000	7,500	*6,800
3	8,500	9,500	12,000	108,000	26,300	43,100	58,900	32,200	*24,000	16,000	7,400	6,600
4	8,500	9,500	12,000	85,400	24,000	42,100	55,300	30,500	23,800	15,000	7,200	6,400
5	8,200	9,000	12,000	63,400	22,100	33,300	49,000	28,800	25,400	15,000	7,200	6,200
6	7,800	9,000	15,000	52,300	21,700	26,900	42,800	28,500	27,300	14,000	7,200	6,400
7	7,800	9,000	24,000	44,900	23,200	22,800	39,600	29,400	30,300	13,000	7,000	6,600
8	7,800	9,000	30,000	37,300	34,800	20,800	38,300	30,000	34,100	12,000	7,000	7,400
9	8,000	9,000	28,000	32,100	53,800	19,700	38,400	30,800	38,100	12,000	7,000	7,600
10	8,000	8,500	24,000	30,000	60,100	20,000	41,200	29,800	41,000	11,500	6,800	7,800
11	8,000	8,000	21,000	30,300	51,500	20,500	46,500	28,300	42,500	11,500	6,800	7,600
12	9,500	*8,500	20,000	29,200	39,600	22,800	52,300	29,500	41,500	11,500	6,800	7,600
13	12,000	9,000	24,000	27,100	32,700	28,200	68,700	30,900	38,000	11,000	6,800	8,000
14	13,000	10,000	32,000	27,700	28,400	32,500	80,500	30,500	33,100	11,000	6,800	9,000
15	12,000	11,000	*34,000	26,900	24,400	32,700	*81,000	29,700	29,000	11,000	6,800	9,000
16	11,000	15,000	38,000	27,500	22,600	29,500	72,400	30,100	25,600	10,500	6,800	8,800
17	10,000	24,000	29,000	35,000	21,000	25,900	62,200	29,200	22,800	10,500	6,800	9,200
18	9,500	40,000	26,000	42,400	19,800	22,700	56,900	27,500	20,900	10,000	6,600	9,800
19	10,000	42,000	23,000	38,100	18,700	20,900	52,300	27,600	19,300	10,000	6,600	9,000
20	11,000	37,000	20,000	31,700	17,800	19,300	48,500	30,600	18,200	9,500	6,600	8,600
21	13,000	32,000	18,000	27,700	16,600	18,000	48,500	35,500	17,800	8,500	6,600	8,200
22	19,000	28,000	17,000	25,400	15,700	17,800	55,500	36,200	18,000	8,000	6,600	8,600
23	23,000	24,000	16,000	26,000	15,200	*24,600	65,300	34,800	19,000	7,800	6,600	8,200
24	21,000	22,000	20,000	28,000	14,700	33,600	67,200	32,400	19,700	7,800	6,600	8,000
25	18,000	21,000	26,000	28,200	14,700	43,600	60,900	28,700	18,800	8,000	6,600	7,600
26	16,000	22,000	29,000	*27,000	15,500	52,600	52,800	26,100	17,000	8,000	6,600	7,400
27	14,000	20,000	28,000	25,800	16,000	53,300	47,100	25,100	15,500	8,500	6,600	7,800
28	12,000	20,000	26,000	24,200	16,600	48,400	42,600	25,200	16,000	*9,000	6,600	8,400
29	12,000	19,000	25,000	22,600	-	50,400	39,300	24,600	17,000	9,500	6,600	9,200
30	11,000	18,000	35,000	21,500	------	62,800	38,500	25,100	17,500	9,500	6,600	9,200
31	11,000	-----	70,100	21,400	-----	70,400	-----	26,300	------	8,000	6,600	------
Total	356,600	523,500	764,100	‡1,260.1	717,000	‡1,013	‡1,633.5	924,600	763,600	341,600	211,900	237,800
Mean	11,500	17,450	24,650	40,650	25,610	32,680	54,450	29,830	25,450	11,020	6,835	7,927
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	707,300	‡1,038	‡1,516	‡2,499	‡1,422	‡2,009	‡3,240	‡1,834	‡1,515	677,600	420,300	471,700

Calendar year 1954: Max 151,000 Min 6,200 Mean 25,710 Cfsm 3.06 In. 41.54 Ac-ft 18,610,000
Water year 1954-55: Max 112,000 Min 6,200 Mean 23,970 Cfsm 2.85 In. 38.73 Ac-ft 17,350,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--Backwater from stoplogs, gates, and locks at Oregon City Oct. 1 to Dec. 30, June 26 to Sept. 30; discharge computed on basis of records for station at Salem.

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 1955.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (by barometer). Prior to Oct. 1, 1945, at datum 2.02 ft higher.

Average discharge.--20 years, 524 cfs (379,400 acre-feet per year).

Extremes.--Maximum discharge during year, 4,810 cfs Dec. 30 (gage height, 10.22 ft); minimum, 30 cfs Sept. 13.
1935-55: 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, 14.92 ft Jan. 9, 1953; minimum discharge, 19 cfs Aug. 30 to Sept. 2, 1940.

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

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
3.7	45	5.0	620	3.6	25	5.5	930
3.9	90	6.0	1,280	4.0	100	7.0	2,050
4.2	195	8.0	2,850	4.3	190	10.0	4,600
4.5	340			4.8	450		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	148	300	2,500	734	384	1,010	587	622	414	102	38
2	59	138	275	1,520	608	426	916	573	552	408	100	37
3	59	127	255	1,080	517	330	783	552	608	336	96	37
4	57	120	236	874	474	285	664	580	839	310	94	37
5	57	117	250	720	486	250	601	727	993	280	90	36
6	53	155	578	601	566	235	587	839	1,070	270	86	34
7	59	141	560	538	1,300	245	*720	874	1,120	255	82	32
8	61	127	467	498	*2,130	300	867	965	1,260	*240	78	34
9	55	144	428	468	1,490	325	1,210	839	1,350	230	76	36
10	86	134	385	414	1,030	330	1,390	839	1,260	230	74	34
11	143	127	345	378	804	456	1,070	1,090	1,060	218	*70	34
12	*324	218	418	*354	664	524	*1,490	1,130	881	206	64	32
13	290	245	704	384	587	492	1,710	902	699	202	60	58
14	195	315	626	342	524	408	1,150	762	566	202	60	102
15	152	445	698	360	486	330	881	706	474	186	58	*88
16	127	704	584	366	444	320	783	650	378	172	56	310
17	124	1,990	506	366	402	295	678	678	348	152	56	280
18	111	1,460	450	348	*354	285	594	895	348	134	52	155
19	412	1,210	401	325	330	280	545	*1,430	348	128	50	118
20	467	854	390	305	320	260	524	1,500	366	122	50	102
21	854	644	428	290	300	245	678	1,180	420	118	46	94
22	1,010	512	484	492	290	474	1,170	937	420	112	44	84
23	632	440	638	601	275	580	993	783	372	110	42	78
24	467	375	740	559	285	790	825	587	360	105	42	72
25	375	396	608	559	265	993	692	657	305	102	42	68
26	315	*365	506	510	255	1,240	636	692	305	149	42	66
27	265	406	445	480	245	958	545	748	295	169	40	98
28	222	385	423	492	265	1,010	492	713	378	134	38	190
29	191	360	590	474	-	1,630	517	832	390	120	38	120
30	171	325	2,710	504	------	1,370	545	867	342	115	38	102
31	155	-----	3,740	685	-----	1,100	-----	720	------	110	38	------
Total	7,607	13,127	20,168	18,387	16,430	17,150	25,266	25,834	18,729	6,039	1,904	2,606
Mean	245	438	651	593	587	553	842	833	624	195	61.4	86.9
Cfsm	2.55	4.56	6.78	6.18	6.11	5.76	8.77	8.68	6.50	2.03	0.640	0.905
In.	2.95	5.09	7.81	7.12	6.36	6.64	9.79	10.01	7.26	2.34	0.74	1.01
Ac-ft	15,090	26,040	40,000	36,470	32,590	34,020	50,110	51,240	37,150	11,980	3,780	5,170

Calendar year 1954: Max 3,740 Min 53 Mean 554 Cfsm 5.77 In. 78.40 Ac-ft 401,400
Water year 1954-55: Max 3,740 Min 32 Mean 475 Cfsm 4.95 In. 67.12 Ac-ft 343,600

Peak discharge (base, 3,600 cfs).--Dec. 30 (9 p.m.) 4,810 cfs (10.22 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 left bank 145 ft downstream from Good's bridge, 1½ miles downstream from Milk Creek, and 1½ miles south of Canby. Prior to Sept. 27, 1955, on downstream side of center pier of Good's bridge.

Drainage area.--323 sq mi.

Records available.--August 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 104.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 24, 1933, staff gage and Oct. 24, 1933, to Sept. 26, 1955, water-stage recorder, at site 145 ft upstream at datum 1.00 ft higher.

Average discharge.--27 years, 1,104 cfs (799,300 acre-ft per year).

Extremes.--Maximum discharge during year, 8,940 cfs Dec. 31 (gage height, 8.37 ft); minimum daily, 55 cfs Sept. 7.

1928-55: Maximum discharge, 25,100 cfs Jan. 7, 1948 (gage height, 14.9 ft, site and datum then in use; about 15.6 ft, present site and datum); minimum, 25 cfs Sept. 14, 1938; minimum daily, 38 cfs Sept. 7, 1935, Aug. 18, 23, 1940.

Remarks.--Records good except those for periods of no gage-height record or backwater from debris, which are fair. A few small diversions above station for irrigation.

Revisions (water years).--WSP 1248: 1929-30, 1932.

Rating tables, water year 1954-55, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Sept. 26				Sept. 27-30	
-0.1	50	2.0	980	1.4	172
.2	110	3.0	1,690	1.7	275
.5	195	5.0	3,710	2.0	400
1.0	400	8.0	8,220	2.5	675

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	370	758	5,740	1,340	1,130	2,920	1,530	1,300	1,000	216	75
2	130	355	692	3,840	1,110	1,520	2,790	1,440	1,100	950	209	70
3	130	336	638	2,670	974	1,220	2,450	1,390	1,300	g812	200	70
4	120	318	596	2,070	908	980	2,070	1,330	1,500	g734	190	70
5	120	310	572	1,790	932	836	1,830	1,520	1,800	g644	180	65
6	110	405	1,200	1,480	968	770	1,690	1,680	2,100	g614	180	60
7	120	415	1,420	1,300	2,080	722	1,770	1,720	2,300	g602	170	55
8	130	375	1,220	1,180	3,550	776	*1,950	1,880	2,500	*g566	160	65
9	120	405	1,100	1,140	3,300	818	2,270	1,700	2,600	544	150	70
10	180	380	962	987	2,320	812	2,900	1,600	2,300	560	140	65
11	300	360	842	878	1,830	1,010	2,360	1,920	2,100	538	*130	65
12	600	456	842	*800	1,500	1,160	2,840	2,110	1,700	488	120	65
13	800	560	1,630	836	1,290	1,250	*4,410	1,840	1,500	461	120	65
14	500	572	1,590	782	1,130	1,200	3,260	1,630	1,200	435	110	100
15	380	812	1,790	776	1,020	1,060	2,500	1,580	1,000	405	110	*179
16	320	1,040	1,610	794	926	956	2,220	1,480	900	380	110	321
17	310	2,840	1,390	800	854	878	2,000	1,470	850	336	110	572
18	*281	3,170	1,200	770	788	836	1,770	1,670	850	297	110	350
19	395	3,000	1,060	716	728	794	1,600	2,390	850	289	100	240
20	920	2,280	962	674	674	734	1,540	2,790	950	265	95	202
21	1,150	1,760	932	620	632	692	1,780	2,260	1,000	254	90	185
22	2,460	1,410	1,000	800	602	1,040	3,710	1,870	1,000	240	90	170
23	1,660	1,160	1,170	1,340	578	1,480	3,160	1,580	900	237	85	160
24	1,200	987	1,640	1,180	578	1,970	2,490	1,360	850	234	85	150
25	950	1,020	1,490	1,160	602	2,970	2,040	1,260	750	230	85	140
26	782	*994	1,360	1,080	608	3,790	1,980	1,270	750	240	80	130
27	662	987	1,170	994	602	2,840	1,750	1,470	700	341	80	120
28	566	974	1,130	974	638	2,690	1,590	1,360	900	273	80	639
29	510	896	1,400	950	-	4,040	1,600	1,470	900	248	75	396
30	456	824	3,730	944	------	3,660	1,530	1,650	850	237	70	299
31	405	-----	7,990	1,070	-----	2,990	-----	1,440	------	226	70	------
Total	16,897	29,771	45,086	41,135	33,062	47,624	68,770	51,660	39,300	13,680	3,800	5,213
Mean	545	992	1,454	1,327	1,181	1,536	2,292	1,666	1,310	441	123	174
Cfsm	1.69	3.07	4.50	4.11	3.66	4.76	7.10	5.16	4.06	1.37	0.381	0.539
In.	1.95	3.43	5.19	4.74	3.81	5.48	7.92	5.95	4.52	1.58	0.44	0.60
Ac-ft	33,510	59,050	89,430	81,590	65,580	94,460	136,400	102,500	77,950	27,130	7,540	10,340

Calendar year 1954: Max 11,000 Min 110 Mean 1,198 Cfsm 3.71 In. 50.38 Ac-ft 867,600
Water year 1954-55: Max 7,990 Min 55 Mean 1,085 Cfsm 3.36 In. 45.61 Ac-ft 785,500

Peak discharge (base, 7,200 cfs).--Dec. 31 (4 a.m.) 8,940 cfs (8.37 ft).

* Discharge measurement made on this day.

g Computed from once-daily wire-weight gage readings.

Note.--No gage-height record Oct. 1-17, June 1 to July 2, Aug. 3-10, Aug. 12 to Sept. 14, Sept. 22-27; discharge estimated on basis of records for station above Pine Creek near Wilhoit. Backwater from debris Jan. 1-22.

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 1955.

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.--15 years (1939-44, 1945-55), 706 cfs (511,100 acre-ft per year).

Extremes.--Maximum discharge during year, 4,170 cfs Dec. 31 (gage height, 22.17 ft); minimum, 13 cfs Sept. 6.
1939-55: 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 no gage-height record, backwater from debris, or shifting control, which are fair. Small diversions for irrigation above station; no regulation.

Revisions (water years).--WSP 1094: 1943. WSP 1218: Drainage area. WSP 1248: 1943.

Rating tables, water year 1954-55, except periods of shifting control or backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
1.1	46	10.0	1,240	0.4	13	10.0	1,230
2.0	103	15.0	2,160	1.0	41	15.0	2,130
3.0	186	20.0	3,400	2.0	102	20.0	3,400
5.0	418	23.0	4,500	3.0	186	22.0	4,100
				5.0	464		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	191	576	3,720	736	788	1,980	1,130	482	200	77	23
2	53	180	524	2,970	686	965	1,940	1,060	451	200	68	20
3	51	170	489	2,220	640	898	1,730	996	461	210	62	18
4	51	161	459	1,780	610	795	1,490	954	568	200	58	17
5	52	155	438	1,520	624	696	1,340	948	584	170	54	18
6	52	237	814	1,280	650	640	*1,210	954	579	150	50	14
7	54	267	1,130	1,120	867	602	1,130	947	571	140	53	14
8	59	229	1,110	1,010	*1,380	597	1,080	944	557	*138	50	16
9	59	237	990	992	1,760	586	1,150	898	589	137	45	20
10	62	237	897	934	1,440	576	1,400	842	550	134	*41	19
11	111	222	776	*850	1,190	734	1,380	884	464	129	40	17
12	*201	304	782	771	1,050	822	1,730	902	391	115	38	18
13	262	383	1,520	773	957	894	*3,300	814	316	105	37	22
14	184	392	1,630	757	864	883	3,080	822	290	93	36	*59
15	143	524	1,640	736	776	834	2,480	910	260	84	38	73
16	120	671	1,530	813	715	770	2,140	811	240	84	34	96
17	111	1,310	1,320	886	*658	722	1,950	755	210	90	32	142
18	104	1,650	1,130	883	605	678	1,770	*774	200	87	31	89
19	138	1,640	989	821	555	642	1,500	877	170	79	27	64
20	419	1,420	878	755	520	597	1,460	943	160	72	26	54
21	494	1,160	786	706	491	562	1,580	875	160	67	27	49
22	917	*968	759	696	470	950	2,220	776	150	62	27	46
23	747	808	819	712	453	1,280	2,300	683	150	61	25	43
24	570	691	1,060	666	446	1,450	2,060	605	160	60	24	40
25	449	734	1,110	669	470	1,620	1,760	597	150	61	23	38
26	375	814	1,140	661	478	1,680	1,640	581	140	67	26	36
27	321	771	1,030	621	488	1,560	1,480	624	180	183	23	44
28	281	749	963	595	511	1,520	1,300	582	240	138	22	161
29	250	685	1,110	570	-	1,910	1,290	584	160	105	22	118
30	225	629	2,250	550	-----	2,110	1,210	603	190	90	20	81
31	208	-----	4,120	568	-----	2,110	-----	544	-----	82	22	-----
Total	7,178	18,589	34,769	32,605	21,090	31,471	52,080	25,219	9,773	3,593	1,158	1,469
Mean	232	620	1,122	1,052	753	1,015	1,736	814	326	116	37.4	49.0
Cfsm	1.14	3.04	5.50	5.16	3.69	4.98	8.51	3.99	1.60	0.569	0.183	0.240
In.	1.31	3.39	6.34	5.94	3.84	5.74	9.49	4.60	1.78	0.66	0.21	0.27
Ac-ft	14,240	36,870	68,960	64,670	41,830	62,420	103,300	50,020	19,380	7,130	2,300	2,910

Calendar year 1954: Max 5,220 Min 41 Mean 705 Cfsm 3.46 In. 46.89 Ac-ft 510,200
Water year 1954-55: Max 4,120 Min 14 Mean 655 Cfsm 3.21 In. 43.57 Ac-ft 474,000

* Discharge measurement made on this day.
Note.--No gage-height record June 14 to July 7, Aug. 11; discharge estimated on basis of weather records, recorded range in stage, and records for station at Aurora. Backwater from debris Oct. 12-19. Shifting-control method used Apr. 13 to June 12.

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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 1955.

Gage.--Wire-weight gage read once daily. 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.--27 years, 1,186 cfs (858,600 acre-ft per year).

Extremes.--Maximum discharge during year, 4,850 cfs Jan. 2 (gage height, 15.30 ft, from graph based on gage readings); minimum, 48 cfs Sept. 10.
1928-55: 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 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).--WSP 1094: 1923(M), 1931, 1934, 1936(M), 1938, 1943. WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.0	48	4.0	652
.5	92	7.0	1,490
1.0	147	16.0	5,200
2.0	282		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	337	950	4,400	1,020	1,470	3,900	1,890	743	372	153	58
2	116	316	890	4,720	1,350	2,070	3,890	1,740	674	369	146	54
3	117	313	822	4,670	1,080	2,190	3,810	1,590	683	389	122	54
4	120	297	757	4,400	999	1,790	3,360	1,470	743	369	117	54
5	118	286	718	3,840	970	1,430	2,840	1,380	767	316	102	52
6	115	279	885	3,320	999	1,180	2,360	1,380	789	300	97	50
7	112	414	1,770	2,880	1,080	1,060	*2,030	1,380	779	*290	91	50
8	113	461	2,120	2,030	1,580	968	1,860	1,380	762	286	91	50
9	112	400	1,940	1,720	2,790	940	1,750	1,350	750	280	82	50
10	123	414	1,740	1,750	2,970	908	2,080	1,230	777	279	79	48
11	130	407	1,510	1,580	2,580	1,020	2,260	1,230	720	261	*78	52
12	204	419	1,250	*1,400	2,160	1,260	2,520	1,290	650	246	73	50
13	396	362	1,770	1,240	1,800	1,800	*3,640	1,230	584	221	68	50
14	458	615	2,880	1,250	1,490	1,700	4,380	1,200	501	189	71	*64
15	365	697	2,920	1,190	1,290	1,660	4,380	1,240	450	178	71	89
16	288	890	2,960	1,230	1,190	1,490	4,160	1,230	414	164	71	173
17	256	1,180	2,630	1,480	1,070	1,260	3,800	1,120	367	165	70	297
18	*231	2,460	2,180	1,600	*970	1,170	3,400	1,050	339	167	63	231
19	224	3,000	1,860	1,510	895	1,060	2,960	*1,170	282	157	62	179
20	430	2,920	1,570	1,320	832	975	2,610	1,320	282	147	60	148
21	578	2,480	1,370	1,200	784	910	2,640	1,260	282	141	59	125
22	1,150	1,940	1,240	1,100	741	928	3,200	1,110	276	127	58	113
23	1,320	1,570	1,250	1,110	713	1,740	3,850	1,040	276	120	57	108
24	1,080	1,280	1,660	1,100	679	2,030	3,880	935	282	112	56	96
25	835	1,110	2,000	1,040	690	2,520	3,480	832	266	112	56	96
26	708	*1,260	2,290	1,030	762	3,200	3,140	825	252	121	54	92
27	584	1,290	2,240	996	813	3,200	2,800	828	267	224	52	78
28	475	1,230	2,000	950	842	2,920	2,400	835	414	278	54	218
29	460	1,140	1,940	912	-	3,160	2,200	801	290	234	55	251
30	416	1,060	2,160	892	------	3,720	2,050	840	354	178	55	197
31	379	-----	3,770	878	-----	3,930	-----	815	------	164	55	------
Total	12,108	30,827	56,042	58,738	35,139	55,659	91,630	36,991	15,015	6,956	2,378	3,224
Mean	391	1,028	1,808	1,895	1,255	1,795	3,054	1,193	500	224	76.7	107
Cfsm	0.816	2.15	3.77	3.96	2.62	3.75	6.38	2.49	1.04	0.468	0.160	0.223
In.	0.94	2.39	4.35	4.56	2.73	4.32	7.11	2.87	1.17	0.54	0.18	0.25
Ac-ft	24,020	61,140	111,200	116,500	69,700	110,400	181,700	73,370	29,780	13,800	4,720	6,390

Calendar year 1954: Max 8,000 Min 84 Mean 1,250 Cfsm 2.61 In. 35.45 Ac-ft 905,200
Water year 1954-55: Max 4,720 Min 48 Mean 1,109 Cfsm 2.32 In. 31.41 Ac-ft 802,700

* 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 1955.

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.--15 years, 194 cfs (140,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,340 cfs Feb. 8 (gage height, 10.65 ft); minimum, 0.6 cfs Sept. 7, 8.
1940-55: 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, Oct. 8, 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.--WSP 1044: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 12				Apr. 13 to Sept. 30					
0.3	8.0	2.0	154	-0.2	0.5	0.4	13	2.0	173
.5	13	4.0	575	-.1	1.0	.6	22	3.0	398
.7	21	8.0	1,210	0	2.0	.8	33	5.0	742
1.0	40	10.0	1,900	.1	3.5	1.0	48		
1.5	86			.2	5.5	1.5	93		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	24	109	899	244	437	568	273	69	34	14	4.7
2	9.4	23	107	613	297	465	492	254	65	32	12	3.0
3	8.6	23	101	467	256	282	431	249	65	28	11	2.3
4	10	23	93	394	244	229	385	236	61	26	10	1.8
5	10	24	119	347	239	200	349	249	58	24	9.0	1.7
6	10	29	244	273	429	183	d320	245	57	23	8.6	1.0
7	10	29	306	265	941	189	d310	238	53	24	9.0	.8
8	11	34	249	259	1,580	202	d310	236	45	36	8.6	1.2
9	15	34	*234	220	873	*189	d320	214	42	32	6.9	3.4
10	15	36	191	197	519	328	d330	210	39	27	6.9	3.9
11	29	50	173	173	500	425	410	193	37	24	6.2	5.1
12	59	78	213	169	385	451	*688	189	36	22	6.2	6.2
13	40	82	412	249	325	394	672	171	34	20	6.9	11
14	26	102	425	220	292	335	494	153	34	18	6.9	16
15	20	234	477	234	263	297	433	135	34	18	6.2	20
16	17	496	372	359	237	277	427	129	36	18	5.5	76
17	16	807	297	514	211	249	383	125	34	18	7.6	81
18	25	*1,040	244	372	185	237	*335	122	34	*18	7.2	15
19	95	787	206	301	169	225	314	116	32	16	7.6	12
20	152	481	183	*265	158	208	321	105	30	15	6.6	11
21	126	372	167	239	140	275	299	103	27	15	7.6	9.8
22	84	270	154	244	125	817	304	98	25	14	6.2	9.8
23	63	202	165	280	130	620	342	91	28	13	*4.7	11
24	51	173	241	299	d130	453	326	89	29	13	3.9	12
25	*46	160	253	399	d125	399	309	*84	29	15	5.5	9.8
26	40	165	208	342	d130	379	276	81	31	17	5.8	9.0
27	34	177	185	287	147	368	262	78	28	20	5.5	11
28	30	147	197	249	266	429	267	76	39	18	4.9	16
29	29	142	412	220	-	649	269	74	40	17	4.7	15
30	26	128	1,030	206	------	697	267	74	29	15	2.9	13
31	25	-----	1,480	169	------	649	-----	72	------	15	3.5	------
Total	1,140.8	6,372	9,247	9,704	9,540	11,537	11,213	4,762	1,200	645	218.1	393.5
Mean	36.8	212	298	313	341	372	374	154	40.0	20.8	7.04	13.1
Cfsm	0.722	4.16	5.84	6.14	6.69	7.29	7.33	3.01	0.784	0.408	0.138	0.257
In.	0.83	4.65	6.74	7.08	6.96	8.41	8.18	3.47	0.88	0.47	0.16	0.29
Ac-ft	2,260	12,640	18,340	19,250	18,920	22,880	22,240	9,450	2,380	1,280	433	780

Calendar year 1954: Max 2,380 Min 8.6 Mean 218 Cfsm 4.27 In. 58.14 Ac-ft 158,100
Water year 1954-55: Max 1,580 Min 0.8 Mean 181 Cfsm 3.55 In. 48.12 Ac-ft 130,900

Peak discharge (base, 2,000 cfs).--Feb. 8 (8 a.m.) 2,340 cfs (10.65 ft).
* Discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of records for station near Dilley.

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 1955.

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.--15 years, 138 cfs (99,910 acre-ft per year).

Extremes.--Maximum discharge during year, 1,130 cfs Feb. 8 (gage height, 10.28 ft); minimum, 3.9 cfs Sept. 13.
1940-55: 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 excellent. 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 tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30					
1.9	5.7	3.0	99	1.7	3.5	2.5	28	4.0	310
2.2	11	4.0	249	1.9	5.9	2.7	50	5.0	412
2.4	19	9.0	920	2.1	9.5	3.0	100	7.0	620
2.6	37			2.3	16	3.5	220	10.0	1,070

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.6	19	87	754	265	347	450	175	52	28	16	8.6
2	9.0	17	84	511	232	323	392	165	50	28	15	7.3
3	9.4	18	79	402	200	259	345	158	50	26	14	6.9
4	10	18	79	338	190	202	294	152	49	25	13	7.4
5	9.9	18	82	288	182	180	255	148	45	24	12	7.3
6	10	22	*178	245	225	170	228	140	43	24	13	7.3
7	9.9	22	266	208	443	165	210	132	39	22	10	4.4
8	11	21	198	195	932	170	198	128	37	26	10	6.7
9	14	24	190	180	692	*168	200	120	33	34	7.6	7.4
10	16	27	175	162	480	202	202	114	33	31	9.3	6.8
11	21	30	162	150	389	265	222	114	32	27	9.8	7.8
12	32	45	170	142	324	336	458	108	28	25	10	8.0
13	26	46	307	172	272	341	472	106	28	22	10	4.5
14	18	87	329	168	225	307	390	104	31	20	10	12
15	15	161	352	188	198	270	328	98	32	22	10	12
16	13	239	306	304	185	247	315	91	32	20	8.7	38
17	14	540	251	440	172	222	282	87	31	17	8.7	20
18	13	850	208	373	160	212	*249	86	30	*16	7.1	14
19	20	670	178	298	142	200	245	82	28	16	5.6	13
20	37	436	158	*255	132	188	242	79	28	16	5.8	13
21	89	314	145	220	125	185	222	75	26	16	9.5	12
22	75	230	132	208	120	453	212	72	21	16	8.0	12
23	56	182	132	218	112	412	230	70	26	17	*8.0	11
24	44	155	165	222	118	346	215	68	29	16	8.7	10
25	*32	148	185	288	112	318	205	64	31	17	8.7	10
26	22	125	170	268	108	282	235	*64	31	28	8.7	9.8
27	21	120	152	232	112	257	208	60	27	25	5.8	11
28	19	110	152	200	195	278	200	58	39	19	6.2	14
29	21	100	195	182	-	416	198	56	36	18	6.4	13
30	22	93	618	175	------	499	182	56	28	17	5.5	12
31	19	-----	1,020	182	-----	504	-----	54	------	17	7.4	------
Total	734.8	4,887	6,905	8,168	7,042	8,724	8,084	3,082	1,025	675	288.5	327.2
Mean	23.7	163	223	263	252	281	269	99.4	34.2	21.8	9.31	10.9
Cfsm	0.539	3.70	5.07	5.98	5.73	6.39	6.11	2.26	0.777	0.495	0.212	0.248
In.	0.62	4.13	5.84	6.90	5.95	7.37	6.83	2.60	0.87	0.57	0.24	0.28
Ac-ft	1,460	9,690	13,700	16,200	13,970	17,300	16,030	6,110	2,030	1,340	572	649

Calendar year 1954: Max 1,790 Min 6.6 Mean 167 Cfsm 3.80 In. 51.36 Ac-ft 120,600
Water year 1954-55: Max 1,020 Min 4.4 Mean 137 Cfsm 3.11 In. 42.20 Ac-ft 99,050

Peak discharge (base, 1,100 cfs).--Feb. 8 (10 a.m.) 1,130 cfs (10.28 ft).
* Discharge measurement made on this day.

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 county road bridge, 1½ miles downstream from Scoggin Creek, and 1 mile south of Dilley.

Drainage area.--133 sq mi.

Records available.--October 1940 to September 1955.

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.--15 years, 393 cfs (284,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,620 cfs Dec. 31 (gage height, 12.28 ft); minimum, 2.9 cfs Sept. 8.
1940-55: 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. 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 11 to Mar. 30, Apr. 2-12, Apr. 14 to May 20)

Oct. 1-12		Oct. 13 to Sept. 30					
0.8	18	0.2	3.4	2.0	69	11.0	1,060
1.0	24	.3	4.5	3.0	123	11.5	1,360
1.3	36	.5	8	4.0	192	12.0	2,060
2.0	72	.8	17	6.0	366	12.5	3,060
2.7	114	1.1	28	8.0	582		
		1.5	44	10.0	825		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	53	215	2,060	578	761	1,120	504	119	64	28	13
2	20	50	198	1,360	566	803	1,010	490	113	62	21	11
3	20	50	186	1,030	504	728	898	465	112	56	20	9.2
4	22	50	184	875	474	628	809	444	110	53	19	8.5
5	22	52	184	786	459	547	736	437	103	52	17	10
6	22	64	*367	678	475	491	672	443	97	50	16	8.0
7	22	66	618	594	739	464	631	429	89	46	15	4.7
8	24	64	552	534	1,780	464	592	412	80	49	14	4.2
9	34	74	505	476	1,790	*439	596	378	76	67	10	6.5
10	34	84	478	416	1,250	471	630	349	72	62	10	10
11	54	92	421	396	1,020	637	650	342	69	55	9.2	10
12	109	140	406	376	881	728	870	331	64	50	9.8	14
13	84	151	642	406	791	793	1,290	310	64	42	10	11
14	56	231	762	436	706	776	1,080	302	65	35	11	20
15	42	436	798	436	620	709	922	283	68	*36	12	23
16	33	564	798	618	558	655	846	256	66	38	10	70
17	25	872	714	920	502	599	798	241	63	36	10	44
18	30	*1,380	582	945	455	553	*727	228	61	34	10	30
19	37	1,780	466	825	411	520	656	215	61	32	12	24
20	118	1,170	416	*724	372	480	656	209	58	28	10	21
21	230	871	356	632	339	456	612	185	52	26	12	20
22	232	690	327	578	316	802	587	174	48	24	12	18
23	163	517	318	577	289	1,050	607	169	53	26	*11	19
24	119	412	396	560	304	877	610	163	58	28	11	20
25	*94	376	476	654	300	793	576	152	59	29	13	17
26	76	336	498	654	283	736	608	*148	62	39	21	17
27	70	326	446	581	298	676	582	145	56	46	18	18
28	65	302	446	508	422	659	554	135	77	35	14	25
29	60	266	546	454	-	855	540	129	83	34	13	24
30	60	238	840	425	------	1,080	515	129	64	34	9.5	22
31	54	-----	2,260	434	-----	1,210	-----	127	------	34	10	------
Total	2,049	11,757	16,401	20,948	17,482	21,440	21,980	8,724	2,222	1,302	418.5	552.1
Mean	66.1	392	529	676	624	692	733	281	74.1	42.0	13.5	18.4
Cfsm	0.497	2.95	3.98	5.08	4.69	5.20	5.51	2.11	0.557	0.316	0.102	0.138
In.	0.57	3.29	4.59	5.86	4.89	6.00	6.15	2.44	0.62	0.36	0.12	0.15
Ac-ft	4,060	23,320	32,530	41,550	34,680	42,530	43,600	17,300	4,410	2,580	830	1,100

Calendar year 1954: Max 5,570 Min 11 Mean 430 Cfsm 3.23 In. 43.92 Ac-ft 311,500
Water year 1954-55: Max 2,260 Min 4.2 Mean 343 Cfsm 2.58 In. 35.04 Ac-ft 248,500

Peak discharge (base, 4,000 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--Discharge for Dec. 12 to Jan. 19, computed from graph based on once-daily wire-weight-gage readings, recorded range in stage, and recorder record for Scoggin Creek near Gaston.

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 1955.

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, at site 1.4 miles downstream at datum 15.33 ft lower. Sept. 13, 1941, to June 19, 1952, at downstream side of bridge at datum 0.44 ft higher.

Average discharge.--15 years, 219 cfs (158,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,670 cfs Nov. 18 (gage height, 5.10 ft); minimum, 5.6 cfs Sept. 6.
1940-55: 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 fair. Small diversions for irrigation above station. Some diurnal fluctuation at low flow caused by log ponds upstream.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	30	145	1,120	464	588	692	249	75	52	22	12
2	14	29	137	844	424	536	584	231	73	49	22	10
3	15	29	130	680	399	444	476	215	70	47	20	8.6
4	16	29	130	576	388	374	399	202	69	45	19	7.2
5	16	30	143	504	378	325	354	192	69	42	16	6.8
6	16	36	*297	436	406	300	315	185	68	41	16	6.4
7	16	35	371	385	625	288	297	178	65	39	17	7.2
8	22	36	300	360	1,340	294	279	168	63	41	16	10
9	22	41	297	332	994	*285	288	159	62	48	17	8.6
10	24	49	255	303	740	343	288	152	59	47	16	8.6
11	29	51	228	285	604	416	346	148	57	45	14	9.2
12	38	70	281	267	504	568	700	141	56	39	14	8.1
13	*31	72	472	350	428	584	648	139	54	34	14	12
14	25	130	508	346	374	520	532	139	53	29	14	16
15	22	212	552	402	332	460	452	128	52	*26	12	19
16	21	313	468	587	303	428	452	120	50	29	9.2	34
17	20	855	392	848	282	396	399	114	49	27	9.2	20
18	20	*1,340	326	708	255	378	357	112	49	26	8.6	14
19	49	1,040	276	568	237	354	350	108	48	26	8.6	12
20	72	716	240	*500	222	326	336	105	47	25	10	11
21	128	504	212	444	210	322	*306	101	46	24	12	10
22	96	371	192	432	202	592	291	97	46	22	11	10
23	71	285	205	444	190	540	303	97	56	22	11	9.2
24	58	231	306	480	202	468	279	92	47	22	*12	9.2
25	49	237	340	540	192	456	273	*90	49	23	12	8.6
26	44	200	291	500	190	413	315	89	50	34	12	10
27	39	192	258	448	198	388	285	86	49	30	11	14
28	36	180	261	406	415	413	276	82	58	26	11	16
29	*35	170	347	371	-	580	282	81	58	26	10	15
30	33	159	885	354	------	760	261	78	54	24	11	13
31	32	------	1,410	374	------	768	---	78	------	23	13	------
Total	1,123	7,672	10,655	15,194	11,498	13,907	11,415	4,156	1,701	1,033	420.6	355.7
Mean	36.2	256	344	490	411	449	380	134	56.7	33.3	13.6	11.9
Cfsm	0.548	3.88	5.21	7.42	6.23	6.80	5.76	2.03	0.859	0.505	0.206	0.180
In.	0.63	4.32	6.00	8.56	6.48	7.84	6.43	2.34	0.96	0.58	0.24	0.20
Ac-ft	2,230	15,220	21,130	30,140	22,810	27,580	22,640	8,240	3,370	2,050	834	706

Calendar year 1954: Max 2,890 Min 14 Mean 270 Cfsm 4.09 In. 55.51 Ac-ft 195,400
Water year 1954-55: Max 1,410 Min 6.4 Mean 217 Cfsm 3.29 In. 44.58 Ac-ft 157,000

Peak discharge (base, 1,100 cfs).--Nov. 18 (12 m.) 1,670 cfs (5.10 ft); Dec. 31 (9 a.m.) 1,480 cfs (4.50 ft); Feb. 8 (8 a.m.) 1,530 cfs (4.70 ft).
* Discharge measurement made on this day.

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, about 1¾ 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 1955.

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.--10 years, 66.8 cfs (48,360 acre-ft per year).

Extremes.--Maximum discharge during year, 655 cfs Feb. 8 (gage height, 10.48 ft); minimum, 1.5 cfs Sept. 4.
1940-43, 1948-55: 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Oct. 1 to Nov. 17)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30					
0.7	2.6	2.5	28	0.6	1.4	1.5	9.8	7.0	210
.9	4.6	3.5	56	.7	2.0	2.0	17	9.0	365
1.2	7.9	5.0	117	.9	3.5	3.0	40	10.0	540
1.8	16	7.2	248	1.1	5.3	5.0	114		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	3.9	33	349	82	72	193	67	16	9.3	4.8	3.2
2	2.9	4.1	31	241	83	86	154	63	15	8.8	4.5	3.1
3	3.1	4.1	30	178	84	79	129	56	15	8.0	4.4	2.5
4	3.6	4.2	29	146	87	66	107	52	15	7.4	4.0	1.8
5	3.5	4.2	29	121	86	57	91	48	14	7.5	3.9	1.9
6	*3.6	5.4	82	99	106	53	80	44	13	6.8	3.5	2.1
7	3.8	4.8	182	88	187	55	70	42	12	6.7	3.4	2.4
8	4.9	*4.8	148	87	536	69	61	38	11	7.9	3.1	3.3
9	5.2	6.2	138	79	422	73	66	34	9.8	9.4	2.9	3.1
10	6.1	6.8	126	68	252	92	57	32	9.7	8.2	3.1	2.6
11	6.6	6.8	108	59	183	116	76	31	9.3	7.6	2.5	2.3
12	7.1	9.9	104	54	146	146	208	29	9.0	7.4	2.4	2.5
13	6.1	9.7	147	69	118	146	362	28	9.1	6.3	2.7	3.9
14	5.5	21	164	76	96	143	248	36	9.0	5.4	3.1	6.4
15	4.9	50	163	92	*81	124	178	32	9.6	5.5	*3.0	6.7
16	5.3	60	135	151	70	114	147	28	9.4	7.0	2.7	*11
17	5.5	168	114	359	60	106	121	27	9.1	6.6	2.9	6.9
18	5.5	248	94	289	50	104	102	*26	9.0	5.8	2.8	5.1
19	7.4	248	77	201	45	105	93	25	8.5	5.3	2.7	4.4
20	9.8	178	64	152	42	100	93	23	8.2	4.8	2.8	4.2
21	15	123	55	127	40	94	86	22	7.6	4.6	2.1	4.0
22	12	86	50	116	38	110	84	21	*7.5	4.5	2.3	3.9
23	8.0	62	52	117	36	120	80	20	9.0	4.0	2.2	3.8
24	6.2	50	70	123	36	115	75	19	9.6	4.2	2.3	3.3
25	5.2	49	108	120	35	114	76	19	9.8	4.6	3.0	3.3
26	4.7	44	100	112	36	118	92	19	9.1	6.9	2.7	3.5
27	4.8	41	85	100	36	121	81	18	8.2	8.0	2.2	5.4
28	4.3	38	*89	88	47	127	86	16	15	6.3	2.6	9.2
29	4.2	36	119	78	-	178	87	16	13	5.9	2.5	6.1
30	4.2	35	357	71	------	*216	74	16	10	5.9	2.9	4.9
31	3.8	-----	530	71	-----	222	-----	16	------	5.1	3.4	------
Total	175.7	1,611.9	3,613	4,081	3,120	3,441	3,457	963	319.5	201.7	93.4	126.8
Mean	5.67	53.7	117	132	111	111	115	31.1	10.6	6.51	3.01	4.23
Cfsm	0.205	1.95	4.24	4.78	4.02	4.02	4.17	1.13	0.384	0.236	0.109	0.153
In.	0.24	2.17	4.87	5.50	4.20	4.64	4.66	1.30	0.43	0.27	0.13	0.17
Ac-ft	348	3,200	7,170	8,090	6,190	6,830	6,860	1,910	634	400	185	252

Calendar year 1954: Max 825 Min 1.5 Mean 68.1 Cfsm 2.47 In. 33.52 Ac-ft 49,330
Water year 1954-55: Max 536 Min 1.8 Mean 58.1 Cfsm 2.11 In. 28.58 Ac-ft 42,070

Peak discharge (base, 600 cfs).--Feb. 8 (4 p.m.) 655 cfs (10.48 ft).
*. Discharge measurement made on this day.

Tualatin River at Farmington, Oreg.

Location.--Lat 45°27'00", long 122°57'00", in SE¼ sec. 29, T. 1 S., R. 2 W., attached to upstream side of highway bridge at Farmington, 5½ miles southeast of Hillsboro.

Drainage area.--568 sq mi.

Records available.--October 1939 to September 1955.

Gage.--Wire-weight gage read twice daily. Datum of gage is 100.42 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1940, staff gage at same site at datum 2.00 ft higher. Oct. 1, 1940, to Mar. 30, 1955, staff gage at present site and datum. Auxiliary staff gage read twice daily at a highway bridge 6½ miles downstream.

Average discharge.--16 years, 1,324 cfs (958,500 acre-ft per year).

Extremes.--Maximum discharge during year, 4,230 cfs Jan. 4, 5 (gage height, 23.00 ft); minimum, 12 cfs Sept. 9, 10.

1939-55: 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 observed, 6.8 cfs Aug. 26, 1951.

Maximum stage known, about 37 ft (present datum) at Farmington and 33.4 ft at gage near Scholls, Dec. 22 or 23, 1933.

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

Revision (water years).--WSP 1248: 1941.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Oct. 1 to Nov. 16; fall used as a factor Jan. 3-7)

2.4	12	12.0	1,320
3.0	36	18.0	2,520
3.5	69	22.0	3,850
5.0	217	23.0	4,320
8.0	622		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	a160	a850	3,010	a1,600	1,640	2,730	1,580	390	268	112	21
2	87	a160	787	3,370	a1,600	2,150	2,900	1,530	387	232	102	20
3	80	a150	744	3,900	a1,600	2,320	3,000	1,460	379	213	85	24
4	82	a150	670	4,230	a1,700	2,310	d2,900	1,390	374	194	58	18
5	80	a150	630	4,140	a1,600	2,180	d2,700	1,310	374	183	55	15
6	67	a160	d800	3,860	a1,700	1,950	2,590	1,200	358	178	48	14
7	*73	a160	1,500	3,530	a1,900	1,700	2,310	1,100	340	a180	45	15
8	83	a160	1,890	d3,250	a2,400	1,570	2,030	1,080	309	a190	40	17
9	80	a170	1,930	2,830	a3,000	1,440	1,860	1,030	261	a210	38	14
10	90	*173	1,860	2,460	a3,500	1,460	1,670	950	237	225	34	13
11	96	a200	1,780	2,050	a3,700	1,540	1,660	906	223	217	31	17
12	117	a240	1,650	1,750	a3,800	1,750	1,920	*875	215	206	28	29
13	146	a300	1,740	1,570	a3,800	2,020	2,660	836	203	175	23	*31
14	165	a400	2,020	1,540	a3,600	2,100	3,090	836	206	149	22	48
15	157	a600	2,230	1,670	a3,400	2,200	3,200	886	204	126	*22	62
16	d140	a900	2,380	1,820	*2,950	a2,200	3,210	824	204	121	21	100
17	d130	a1,600	2,400	2,270	2,480	a2,200	3,130	784	202	126	21	136
18	130	a2,200	2,380	2,830	2,050	2,090	2,980	704	197	142	18	173
19	d130	a2,700	2,120	3,140	a1,800	1,830	2,750	664	188	132	20	136
20	162	a2,900	1,840	3,240	a1,500	1,680	2,520	622	188	128	13	110
21	a260	a3,000	1,600	3,210	1,280	a1,600	2,350	583	177	111	13	91
22	a400	a3,000	1,440	3,060	1,160	a1,600	2,100	544	158	82	15	101
23	a520	a2,800	1,300	2,840	1,090	a1,700	2,030	523	*154	77	17	72
24	a450	a2,500	1,440	2,660	1,030	a1,900	1,970	509	163	71	16	d64
25	a370	a2,100	1,800	2,440	966	*2,080	2,050	492	186	79	16	d62
26	a300	a1,700	2,090	2,260	966	2,210	2,010	474	206	84	19	d64
27	a260	a1,300	2,110	2,100	993	2,090	1,930	463	220	132	21	65
28	a220	a1,100	2,050	a2,000	1,170	a2,000	1,810	449	226	150	22	82
29	a200	a1,000	*2,060	a1,900	-	a2,100	1,750	424	270	148	30	106
30	a180	a900	2,220	a1,800	------	2,350	1,710	413	314	123	28	131
31	a170	-----	2,650	a1,700	-----	2,550	-----	407	------	117	24	------
Total	5,505	33,033	52,961	82,430	58,335	60,510	71,520	25,848	7,513	4,769	1,057	1,851
Mean	178	1,101	1,708	2,659	2,083	1,952	2,384	834	250	154	34.1	61.7
Cfsm	0.313	1.94	3.01	4.68	3.67	3.44	4.20	1.47	0.440	0.271	0.060	0.109
In.	0.36	2.16	3.47	5.40	3.82	3.96	4.68	1.69	0.49	0.31	0.07	0.12
Ac-ft	10,920	65,520	105,000	163,500	115,700	120,000	141,900	51,270	14,900	9,460	2,100	3,670

Calendar year 1954: Max 12,400 Min 38 Mean 1,580 Cfsm 2.78 In. 37.75 Ac-ft 1,143,000
Water year 1954-55: Max 4,230 Min 13 Mean 1,110 Cfsm 1.95 In. 26.53 Ac-ft 803,900

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations near Willamette and near Dilley.
d Doubtful gage-height record; discharge estimated on basis of weather records and records for stations near Willamette and near Dilley.

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 1955.

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.--27 years, 1,450 cfs (1,050,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,510 cfs Jan. 5; minimum daily, 32 cfs Aug. 24-27.
1928-55: Maximum discharge, 29,300 cfs Dec. 23, 1933; minimum daily, 20 cfs Aug. 8-10, 1952.

Remarks.--Records excellent except 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).--WSP 1014: 1943. WSP 1184: 1947. WSP 1248: 1941.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	196	948	3,600	1,860	1,710	3,280	1,970	487	313	129	40
2	99	190	864	3,810	1,890	2,390	3,380	1,840	478	461	128	40
3	99	184	790	4,130	1,980	2,750	3,440	1,760	467	309	123	39
4	98	182	736	4,380	2,010	2,760	3,420	1,680	452	262	115	39
5	96	189	709	4,490	1,990	2,640	3,310	1,570	445	235	109	39
6	97	190	833	4,390	1,980	2,430	3,120	1,470	438	170	102	39
7	*98	192	1,300	4,130	2,060	2,180	2,850	1,350	423	128	96	36
8	104	199	2,000	3,810	2,710	1,950	2,510	1,290	390	142	91	34
9	107	211	2,260	3,470	3,580	1,820	2,220	1,220	346	164	85	33
10	111	*222	2,230	3,070	3,920	1,720	2,010	1,140	308	207	82	33
11	123	238	2,110	2,640	4,170	1,690	1,980	1,070	280	236	77	33
12	143	286	1,970	2,180	4,410	1,850	2,420	*1,020	265	233	71	33
13	164	339	2,060	1,880	4,480	2,100	3,530	980	252	216	66	*37
14	203	421	2,350	1,750	4,320	2,430	3,850	986	248	194	63	44
15	194	566	2,690	1,810	4,020	2,620	3,850	1,020	248	169	59	58
16	166	860	2,820	2,040	*3,620	2,660	3,830	1,010	245	154	55	80
17	154	1,360	2,840	2,750	3,180	2,600	3,790	936	236	149	52	101
18	167	1,910	2,770	3,500	2,660	2,470	3,590	866	229	149	48	115
19	161	2,560	2,600	3,710	2,160	2,320	a3,400	815	226	147	44	123
20	159	2,960	2,310	3,760	1,800	2,150	a3,200	763	218	142	41	126
21	239	3,200	1,970	3,760	1,580	1,990	a3,000	721	213	135	38	123
22	437	3,370	1,690	3,660	1,440	1,960	a2,800	684	198	129	*36	116
23	575	3,370	1,520	3,460	1,320	1,990	a2,650	643	*193	123	33	113
24	528	3,120	1,530	3,220	1,220	2,180	a2,500	624	140	115	32	109
25	422	2,720	1,880	2,950	1,160	2,440	2,340	600	137	110	32	108
26	361	2,130	2,370	2,710	1,160	2,670	2,300	587	151	111	32	105
27	306	1,640	2,560	2,550	1,160	2,650	2,260	563	164	111	32	110
28	264	1,350	2,540	2,410	1,260	2,560	2,220	550	234	115	33	114
29	240	1,180	*2,510	2,240	-	2,640	2,150	529	264	123	36	121
30	223	1,050	2,710	2,040	------	*2,900	2,070	508	310	129	38	130
31	210	-----	3,170	1,890	-----	3,150	-----	495	------	130	40	------
Total	6,450	36,585	61,640	96,190	69,100	72,370	87,270	31,260	8,685	5,511	2,018	2,271
Mean	208	1,220	1,988	3,103	2,468	2,335	2,909	1,008	290	178	65.1	75.7
Cfsm	0.293	1.72	2.80	4.37	3.48	3.29	4.10	1.42	0.408	0.251	0.092	0.107
In.	0.34	1.92	3.23	5.04	3.62	3.79	4.57	1.64	0.45	0.29	0.11	0.12
Ac-ft	12,790	72,570	122,300	190,800	137,100	143,500	173,100	62,000	17,230	10,930	4,000	4,500

Calendar year 1954: Max 11,600 Min 23 Mean 1,806 Cfsm 2.54 In. 34.53 Ac-ft 1,308,000
Water year 1954-55: Max 4,490 Min 32 Mean 1,313 Cfsm 1.85 In. 25.12 Ac-ft 950,800

* Discharge measurement made on this day.
a No river gage-height record; discharge estimated on basis of recorded range in stage and records for station at Farmington.

Clackamas River at Big Bottom, Oreg.

Location.--Lat 45°01'00", long 121°55'00", 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 1955.

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.--35 years, 469 cfs (339,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,160 cfs June 10 (gage height, 5.80 ft), from rating curve extended above 900 cfs by logarithmic plotting; minimum, 268 cfs Sept. 30; minimum gage height, 1.99 ft Oct. 2-7, 9.
1920-55: 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, 8.63 ft Jan. 18, 1953; minimum discharge, 184 cfs Sept. 12, 1942.

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

Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1218: Drainage area. WSP 1248: 1943.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 24		Jan. 25 to Sept. 30	
1.9	260	2.8	260
2.5	450	3.5	435
4.0	1,180	4.5	840
		5.5	1,450
		6.2	2,020

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	290	308	350	*795	342	365	a430	*447	760	670	328	276
2	287	305	344	650	335	352	*a415	447	690	622	325	276
3	287	302	341	565	332	345	408	447	725	*586	320	274
4	287	302	338	521	333	335	393	453	835	560	318	272
5	287	299	*341	489	332	328	387	482	1,020	538	312	272
6	287	305	404	460	335	330	390	532	1,240	524	*310	272
7	290	302	374	443	398	335	402	566	1,390	510	305	272
8	293	308	359	434	590	335	402	618	1,610	504	302	272
9	287	305	350	418	566	335	490	626	1,880	493	302	272
10	320	302	341	408	493	340	578	650	1,990	482	300	272
11	*353	302	338	394	462	348	556	760	1,890	468	298	*272
12	404	311	347	387	441	360	602	850	1,720	465	296	272
13	359	308	380	394	426	350	654	785	1,440	465	296	276
14	326	320	365	378	411	340	590	710	1,240	468	296	282
15	314	341	412	377	402	332	535	658	1,090	456	294	300
16	308	390	384	368	396	328	518	622	946	441	294	342
17	311	655	368	359	390	325	482	610	890	420	290	298
18	302	574	356	353	375	322	456	658	885	402	290	282
19	359	557	350	347	370	320	441	835	875	393	288	278
20	368	521	347	344	365	318	438	1,110	880	383	288	276
21	436	*464	347	338	360	318	479	1,160	920	381	286	272
22	478	432	353	347	360	358	574	1,070	920	372	284	270
23	401	408	374	350	352	342	556	952	865	368	284	272
24	365	387	401	341	360	365	532	850	775	360	282	272
25	347	390	384	337	352	a370	514	815	735	352	282	270
26	338	380	371	330	*355	a360	504	795	720	359	282	270
27	329	390	362	328	345	a350	465	790	686	360	282	278
28	323	374	359	328	352	a370	450	785	725	348	282	305
29	317	365	377	*325	-	a500	447	*885	686	340	280	276
30	314	356	576	325	------	a480	441	988	646	338	278	268
31	311	-----	955	332	-----	a440	-----	875	-----	332	278	-----
Total	10,278	11,263	12,048	12,565	10,930	10,996	14,529	22,831	31,674	13,760	9,152	8,361
Mean	332	375	389	405	390	355	484	736	1,056	444	295	279
Cfsm	2.44	2.76	2.86	2.98	2.87	2.61	3.56	5.41	7.76	3.26	2.17	2.05
In.	2.81	3.08	3.29	3.44	2.99	3.01	3.97	6.24	8.66	3.76	2.50	2.29
Ac-ft	20,390	22,340	23,900	24,920	21,680	21,810	28,820	45,280	62,820	27,290	18,150	16,580

Calendar year 1954: Max 1,200 Min 287 Mean 533 Cfsm 3.92 In. 53.17 Ac-ft 385,600
Water year 1954-55: Max 1,990 Min 268 Mean 461 Cfsm 3.39 In. 46.04 Ac-ft 334,000

Peak discharge (base, 1,200 cfs).--June 10 (10 p.m.) 2,160 cfs (5.80 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station above Three Lynx Creek and Oak Grove Fork above powerplant intake.
Note.--Shifting-control method used Jan. 14-26, Feb. 7 to Mar. 24, May 20 to July 22, July 25, 26, Sept. 3-30.

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 December 1923 (incomplete), December 1923 to September 1955. 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.--31 years (1924-55), 483 cfs (349,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,380 cfs June 10 (gage height, 3.29 ft); minimum, 269 cfs Nov. 24.
1909-55: 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).

Remarks.--Records excellent except those above 900 cfs, which are good. No diversion above station; no regulation.

Cooperation.--Water-stage recorder graph and 12 discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1248: 1909, 1910(M), 1916, 1918, 1923, 1932.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.8	285
2.2	520
2.5	720
3.3	1,390

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	371	365	395	637	395	401	407	462	860	678	407	347
2	371	365	389	572	389	389	401	468	832	657	401	347
3	371	359	377	533	383	383	*395	474	846	637	401	347
4	371	359	*371	500	389	377	389	488	892	618	395	347
5	371	359	377	481	389	371	389	514	956	604	395	347
6	377	365	407	481	401	365	401	559	1,030	592	*389	347
7	377	*365	401	488	468	371	419	598	1,080	572	383	347
8	371	365	401	468	611	371	443	644	1,150	566	383	341
9	371	365	395	449	578	371	474	657	1,250	552	383	335
10	*401	365	389	437	533	383	500	685	1,320	546	383	335
11	443	365	377	431	507	383	500	755	1,320	533	383	*335
12	474	371	383	437	488	383	526	811	1,280	526	377	335
13	425	365	389	431	468	377	533	783	1,200	520	377	341
14	401	389	383	413	462	371	514	748	1,120	514	377	341
15	383	389	407	413	449	359	494	727	1,040	507	371	359
16	383	425	389	407	443	353	494	706	980	494	371	389
17	377	533	377	401	437	353	468	706	948	481	371	419
18	371	533	371	395	425	353	455	748	916	474	365	371
19	443	520	365	389	419	353	449	839	876	462	365	353
20	443	481	359	383	413	347	449	948	853	462	365	347
21	507	449	359	383	407	341	468	964	839	455	365	335
22	481	425	365	407	407	377	507	932	832	443	359	330
23	437	413	383	*407	401	359	500	892	804	437	359	335
24	413	395	389	401	407	365	488	846	769	431	359	330
25	401	341	383	395	401	359	481	832	*734	425	359	330
26	389	389	371	395	*401	353	481	832	713	431	353	330
27	389	425	359	389	395	353	455	839	692	425	353	365
28	383	419	365	383	395	365	449	*832	692	419	353	365
29	377	413	383	383	-	413	449	860	678	413	353	341
30	371	401	526	*383	------	401	*455	924	671	413	353	335
31	365	-----	699	389	-----	395	-----	892	------	413	353	------
Total	12,408	12,073	12,284	13,461	12,261	11,495	13,833	22,965	28,173	15,700	11,561	10,426
Mean	400	402	396	434	438	371	461	741	939	506	373	348
Cfsm	3.17	3.19	3.14	3.44	3.48	2.94	3.66	5.88	7.45	4.02	2.96	2.76
In.	3.66	3.56	3.63	3.97	3.62	3.39	4.08	6.78	8.32	4.63	3.41	3.08
Ac-ft	24,610	23,950	24,360	26,700	24,320	22,800	27,440	45,550	55,880	31,140	22,930	20,680

Calendar year 1954: Max 1,030 Min 341 Mean 552 Cfsm 4.38 In. 59.45 Ac-ft 399,500
Water year 1954-55: Max 1,320 Min 330 Mean 484 Cfsm 3.84 In. 52.13 Ac-ft 350,400

Peak discharge (base, 940 cfs).--June 10 (9 to 10 p.m.) 1,380 cfs (3.29 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 1955.

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 same site and datum.

Average discharge.--38 years, 1,917 cfs (1,388,000 acre-ft per year).

Extremes.--Maximum discharge during year, 8,840 cfs Dec. 31 (gage height, 7.04 ft); minimum, 417 cfs Sept. 27 (gage height, 0.63 ft); minimum daily, 703 cfs Sept. 5.
1909-13, 1921-55: 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 Sept. 15, 1949; minimum daily, 536 cfs Oct. 22, 1930.

Remarks.--Records excellent except those for May 14 to June 4 and those for periods of no gage-height record, which are good. 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 (water years).--WSP 1184: Drainage area. WSP 1248: 1910(M), 1912, 1948-50(m).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.2	690	3.0	2,120
1.6	930	5.0	4,730
2.0	1,220	7.0	8,740

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	796	867	a1,200	5,490	1,570	1,450	2,230	1,910	3,480	2,800	1,100	811
2	*804	886	a1,100	3,830	1,510	1,410	2,140	1,940	3,160	2,600	1,040	891
3	793	878	a1,100	2,980	1,400	1,300	1,970	1,910	3,160	2,350	1,040	*871
4	788	862	a1,050	2,440	1,440	1,190	1,780	1,950	*3,650	2,210	1,020	718
5	774	847	a1,050	2,130	1,400	*1,110	1,690	2,280	4,420	2,140	1,010	703
6	761	867	a1,500	1,910	*1,420	1,110	1,700	2,580	5,220	2,000	1,000	771
7	782	854	a1,600	1,780	2,330	1,160	1,850	2,770	5,700	1,920	982	768
8	784	775	a1,400	*1,690	3,970	1,200	2,150	3,090	6,380	1,900	992	775
9	760	836	1,290	1,560	3,770	1,230	2,650	3,090	7,330	*1,850	972	787
10	862	811	1,270	1,520	2,800	1,300	3,370	3,110	7,620	1,820	955	781
11	1,070	797	*1,180	1,480	2,320	1,470	3,090	3,790	7,200	1,700	944	781
12	1,500	797	1,220	1,350	2,050	1,560	3,270	4,260	6,520	1,850	966	811
13	1,330	758	1,550	1,450	1,870	1,500	3,760	3,870	5,560	1,850	1,000	799
14	a1,100	993	a1,600	1,340	1,720	1,410	3,120	*3,400	4,780	1,780	941	884
15	982	1,130	a1,900	1,360	1,620	1,300	2,620	3,130	4,220	1,940	889	872
16	937	a2,000	a1,700	1,310	1,520	1,260	*2,400	2,900	3,790	1,750	893	1,270
17	936	a3,200	a1,500	1,280	1,490	1,260	2,150	2,800	3,550	1,460	885	1,170
18	891	3,350	1,400	1,260	1,410	1,260	2,030	3,180	3,520	1,510	899	1,000
19	1,180	2,860	1,310	1,220	1,360	1,240	1,920	4,490	3,470	1,430	895	910
20	1,440	2,470	1,270	1,200	1,310	1,170	1,880	5,700	3,570	1,360	884	878
21	1,870	2,000	1,340	1,170	1,310	1,180	2,140	5,250	3,860	1,320	848	847
22	2,480	1,680	1,310	1,300	1,280	1,590	2,880	4,560	3,840	1,280	853	811
23	1,800	1,520	1,670	1,330	1,250	1,580	2,750	4,080	3,560	1,280	853	793
24	1,490	1,470	2,020	1,340	1,240	1,780	2,500	3,650	3,160	1,120	809	787
25	1,320	1,300	1,720	1,360	1,260	1,840	2,270	3,480	2,950	1,170	*757	763
26	1,190	1,370	1,610	1,340	1,260	1,790	2,250	3,500	2,940	1,200	835	781
27	1,120	a1,500	1,370	1,320	1,200	1,670	2,000	3,590	2,780	1,200	829	775
28	1,070	a1,400	1,420	1,290	1,240	1,740	1,900	3,540	2,940	1,200	823	a1,000
29	1,030	a1,300	1,630	1,260	-	2,670	1,900	3,930	2,910	1,170	811	847
30	*987	a1,300	3,830	1,300	------	2,580	1,870	4,430	2,640	*1,150	853	787
31	951	------	7,820	1,370	------	2,250	------	3,980	------	1,000	817	------
Total	34,578	41,678	52,930	52,960	48,320	46,540	70,230	106,140	127,880	51,310	28,395	25,442
Mean	1,115	1,389	1,707	1,708	1,726	1,501	2,341	3,424	4,263	1,655	916	848
Cfsm	2.33	2.90	3.56	3.57	3.60	3.13	4.89	7.15	8.90	3.46	1.91	1.77
In.	2.68	3.24	4.11	4.11	3.75	3.61	5.45	8.24	9.93	3.98	2.20	1.98
Ac-ft	68,580	82,670	105,000	105,000	95,840	92,310	139,300	210,500	253,600	101,800	56,320	50,460

Calendar year 1954: Max 8,690 Min 758 Mean 2,134 Cfsm 4.46 In. 60.46 Ac-ft 1,545,000
Water year 1954-55: Max 7,820 Min 703 Mean 1,881 Cfsm 3.93 In. 53.28 Ac-ft 1,361,000

Peak discharge (base, 8,100 cfs).--Dec. 31 (9 a.m.) 8,840 cfs (7.04 ft); June 9 (11 p.m.) 8,240 cfs (6.79 ft).

* 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 stations at Big Bottom and near Cazadero.

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 southeast of Cazadero.
Drainage area.--657 sq mi.
Records available.--April 1908 to September 1955. Published as "at Estacada" April to December 1908.
Gage.--Water-stage recorder. Datum of gage is 533.3 ft above mean sea level, datum of 1929. Apr. 6 to Dec. 31, 1908, staff gage at site 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, and Nov. 15, 1922, to Sept. 30, 1954, water-stage recorder, at present site and datum but with gage readings converted to Portland General Electric Co. datum by adding 532.0 ft.
Average discharge.--47 years, 2,662 cfs (1,927,000 acre-ft per year).
Extremes.--Maximum discharge during year, 14,400 cfs Dec. 31 (gage height, 10.83 ft); minimum, 620 cfs Sept. 12 (gage height, 2.05 ft); minimum daily, 900 cfs Sept. 4.
1908-55: Maximum discharge, 60,800 cfs Mar. 31, 1931 (gage height, 24.5 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 (gage height, 0.03 ft), caused by shutdown in powerplant at Three Lynx; minimum daily, 587 cfs Aug. 17, 1930.
Remarks.--Records excellent except those for period of no gage-height record, which are good. 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 (water years).--WSP 1184: Drainage area. WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923, drainage area (former site).

Rating tables, water year 1954-55 (gage height in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 16				Nov. 17 to Sept. 30			
2.8	920	5.0	2,570	2.6	880	5.5	3,230
3.0	1,020	6.0	3,710	3.0	1,080	8.0	7,400
4.0	1,660	7.0	5,200	4.0	1,750	11.0	14,800

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	970	1,160	1,750	9,500	2,340	2,180	3,790	2,800	4,700	3,660	1,370	995
2	*960	1,180	1,670	6,100	2,180	2,180	3,640	2,790	4,290	3,470	1,330	1,070
3	955	1,180	1,660	4,670	2,030	1,890	3,250	2,750	4,370	3,110	1,310	*1,020
4	950	1,140	1,610	3,800	2,000	1,690	2,890	2,790	*5,040	2,860	1,280	900
5	945	1,140	1,580	3,240	2,010	*1,560	2,720	3,210	5,940	2,730	1,260	910
6	935	1,190	2,190	2,790	*2,130	1,530	2,690	3,740	6,780	2,620	1,240	960
7	945	1,190	2,230	2,560	3,900	1,580	a2,900	3,950	7,260	2,500	1,220	955
8	965	1,080	1,990	*2,390	6,290	1,690	a3,200	*4,390	8,080	2,450	1,190	975
9	940	1,180	1,870	2,200	5,900	1,740	a4,000	4,280	9,420	*2,460	1,240	970
10	1,080	1,140	1,780	2,050	4,460	1,830	a5,400	4,220	9,680	2,470	1,180	965
11	1,380	1,110	*1,660	2,000	3,650	2,300	a5,000	5,030	9,000	2,240	1,170	950
12	2,330	1,150	1,700	1,840	3,120	2,300	a5,400	5,660	7,850	2,390	1,190	975
13	2,010	1,140	2,210	2,030	2,770	2,200	a6,000	5,130	6,680	2,410	1,170	975
14	1,520	1,340	2,180	1,880	2,490	2,000	a4,700	4,580	5,740	2,280	1,150	1,070
15	1,340	1,540	2,660	1,860	2,320	1,840	a4,200	4,330	5,080	2,420	1,040	1,080
16	1,240	2,100	2,410	1,810	2,190	1,710	*3,680	4,090	4,550	2,290	1,090	1,490
17	1,210	5,140	2,160	1,780	2,090	1,660	3,360	3,970	4,250	1,930	1,070	1,490
18	1,160	5,250	1,970	1,730	1,950	1,660	3,120	4,420	4,160	1,890	1,090	1,200
19	1,570	4,600	1,810	1,640	1,870	1,600	2,880	6,020	4,110	1,840	1,100	1,090
20	2,040	3,830	1,770	1,630	1,810	1,540	2,780	7,440	4,190	1,740	1,080	1,050
21	3,150	3,150	1,630	1,580	1,780	1,560	3,190	6,780	4,480	1,690	1,050	1,020
22	4,320	2,490	1,810	2,020	1,760	2,370	4,620	5,840	4,520	1,650	1,060	995
23	3,140	2,280	2,280	2,270	1,710	2,550	4,350	5,130	4,280	1,640	1,060	980
24	2,440	2,110	2,870	2,180	1,700	2,840	3,860	4,620	3,830	1,490	1,020	980
25	2,030	1,980	2,450	2,140	1,750	3,540	3,440	4,440	3,560	1,470	1,040	950
26	1,760	2,050	2,260	2,070	1,710	3,610	3,310	4,480	3,470	1,580	1,040	975
27	1,580	2,240	1,910	2,010	1,660	2,950	2,940	4,730	3,360	1,540	1,020	1,100
28	1,470	2,060	1,980	1,970	1,730	2,980	2,720	4,580	3,580	1,560	1,020	1,430
29	1,380	1,950	2,610	1,930	-	4,380	2,690	4,980	3,610	1,500	1,000	1,170
30	*1,390	1,940	7,000	1,970	------	4,220	2,690	5,740	3,330	*1,440	1,020	1,060
31	1,260	-----	13,600	2,080	-----	3,830	-----	5,200	------	1,340	1,010	------
Total	49,365	61,030	79,260	79,720	71,300	71,510	109,410	142,110	159,190	66,660	35,110	31,750
Mean	1,592	2,034	2,557	2,572	2,546	2,307	3,647	4,584	5,306	2,150	1,133	1,058
Cfsm	2.42	3.10	3.89	3.91	3.88	3.51	5.55	6.98	8.08	3.27	1.72	1.61
In.	2.79	3.45	4.49	4.51	4.04	4.05	6.19	8.04	9.01	3.77	1.99	1.80
Ac-ft	97,910	121,100	157,200	158,100	141,400	141,800	217,000	281,900	315,700	132,200	69,640	62,980

Calendar year 1954: Max 13,600 Min 945 Mean 2,945 Cfsm 4.48 In. 60.84 Ac-ft 2,132,000
Water year 1954-55: Max 13,600 Min 900 Mean 2,620 Cfsm 3.99 In. 54.13 Ac-ft 1,897,000

Peak discharge (base, 11,000 cfs).--Dec. 31 (1:30 a.m.) 14,400 cfs (10.83 ft).
* 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 stations at Big Bottom and above Three Lynx Creek.

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 1955.

Gage.--Water-stage recorder and concrete control with steel weir for low flow. Datum of gage is 228.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--15 years, 52.6 cfs (38,080 acre-ft per year).

Extremes.--Maximum discharge during year, 506 cfs Apr. 12 (gage height, 7.44 ft); minimum, 0.2 cfs Sept. 6 (gage height, 0.70 ft).
1940-55: 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, Sept. 6, 1955.

Remarks.--Records good except those for period of no gage-height record and those below 10 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 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.7	0.2	1.5	20
.8	.6	2.0	40
.9	1.3	3.0	93
1.0	2.4	5.0	224
1.1	4.6	6.0	340

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	6.0	42	267	39	188	154	54	7.8	5.3	2.6	0.9
2	1.9	5.7	34	190	32	151	139	46	7.1	5.7	2.3	.6
3	1.9	5.7	31	132	29	107	137	42	8.6	5.3	2.1	.6
4	1.9	5.3	29	101	*35	76	99	36	9.7	4.6	2.0	.6
5	1.9	5.7	32	97	41	57	78	31	9.0	4.3	2.0	.6
6	1.8	9.7	132	76	60	48	62	*27	7.1	4.3	1.2	.4
7	*1.8	9.3	129	65	111	41	50	24	6.4	4.0	1.3	.5
8	1.7	8.6	95	59	*326	37	41	20	5.3	4.6	1.6	*.6
9	1.8	11	76	58	201	32	49	17	4.6	4.6	1.2	.6
10	3.5	*11	60	50	123	31	46	16	4.0	4.3	1.1	.5
11	6.0	10	46	43	87	32	66	15	3.8	4.3	.8	.4
12	7.8	21	67	38	66	48	299	15	3.8	3.8	.8	.5
13	8.6	21	162	43	54	64	330	13	*3.8	3.4	.7	.6
14	6.0	33	115	38	44	111	232	29	4.0	3.0	1.0	1.9
15	4.6	68	*148	53	38	99	162	26	4.3	3.2	.8	2.1
16	4.0	68	101	74	34	79	147	19	4.3	3.0	1.0	2.3
17	4.3	185	76	117	30	64	130	17	3.8	2.8	1.2	1.3
18	3.5	249	59	91	25	52	98	16	3.8	2.7	1.1	1.0
19	5.7	234	46	69	22	43	104	14	3.8	2.6	1.1	.9
20	7.5	134	38	60	21	36	119	12	3.8	2.6	1.1	.8
21	22	89	33	58	19	35	169	11	3.8	2.5	1.1	.8
22	39	66	34	68	19	72	279	9.7	4.0	2.5	1.1	.7
23	32	50	44	64	18	60	202	9.3	5.3	2.5	1.2	.7
24	22	39	76	58	18	59	137	9.3	4.6	2.5	1.1	.6
25	17	77	76	62	17	*168	103	8.6	4.6	2.7	1.2	.6
26	12	72	83	52	23	181	138	8.6	4.6	4.0	1.1	.7
27	10	83	68	46	32	113	100	8.6	4.6	3.4	1.0	6.5
28	9.3	82	88	40	108	103	83	7.8	7.8	3.0	1.0	9.0
29	8.2	66	115	36	-	214	91	7.5	7.5	*2.9	1.1	3.5
30	7.5	53	224	33	-------	212	68	8.2	5.7	2.9	1.0	2.0
31	6.8	-------	240	34	-------	162	-------	8.6	-------	2.7	.7	-------
Total	263.9	1,778.0	2,599	2,272	1,672	2,775	3,912	586.2	161.3	110.0	38.6	42.8
Mean	8.51	59.3	83.8	73.3	59.7	89.5	130	18.9	5.38	3.55	1.25	1.43
Cfsm	0.302	2.10	2.97	2.60	2.12	3.17	4.61	0.670	0.191	0.126	0.044	0.051
In.	0.35	2.34	3.43	3.00	2.21	3.66	5.16	0.77	0.21	0.15	0.05	0.06
Ac-ft	523	3,530	5,160	4,510	3,320	5,500	7,760	1,160	320	218	77	85

Calendar year 1954: Max 1,080 Min 1.7 Mean 57.7 Cfsm 2.05 In. 27.77 Ac-ft 41,760
Water year 1954-55: Max 330 Min 0.4 Mean 44.4 Cfsm 1.57 In. 21.39 Ac-ft 32,160

Peak discharge (base, 450 cfs).--Apr. 12 (8:30 p.m.) 506 cfs (7.44 ft).
* Discharge measurement made on this day.
Note.--No gage-height record July 12-28; discharge estimated on basis of weather records, recorded range in stage, and records for Molalla River above Pine Creek, near Wilhoit and Gales Creek near Forest Grove.

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 1955 in reports of Geological Survey. October 1943 to September 1953 (monthly discharge only), in State Water-Supply Bulletin 6.

Gage.--Water-stage recorder. 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. Oct. 1, 1950, to June 24, 1953, staff gage and crest-stage indicator at same site and datum.

Average discharge.--12 years (1943-55), 60.4 cfs (43,730 acre-ft per year).

Extremes.--Maximum discharge during year, 699 cfs probably Dec. 30 (gage height, 3.11 ft, from recorded range in stage), from rating curve extended above 360 cfs; minimum, 2.3 cfs Sept. 11 (gage height, 0.99 ft).

1943-55: Maximum discharge, 1,500 cfs Jan. 22, 1954 (gage height, 4.02 ft), from rating curve extended above 360 cfs; minimum observed, 1.3 cfs Aug. 20, 22, 28-30, Sept. 5-9, 13, 14, 1949, Sept. 14-16, 22, 1951.

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

Revisions (water years).--WSP 1044: 1944.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.09	2.9	1.8	65	1.0	2.4	1.6	37
1.2	4.8	2.0	108	1.1	3.4	1.8	70
1.3	8.1	2.2	164	1.2	5.4	2.0	115
1.4	13.5	2.5	278	1.3	8.4	2.2	174
1.6	34			1.4	13.0	2.5	300
				1.5	22	2.9	538

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	8.1	60	249	66	85	171	62	20	27	8.1	3.7
2	3.0	7.6	53	189	66	81	148	55	18	28	7.4	3.4
3	3.3	8.1	50	148	62	70	120	52	20	20	7.1	3.3
4	4.1	7.6	45	123	74	56	99	49	23	17	7.1	3.1
5	3.4	11.5	52	108	85	48	88	44	27	20	6.5	2.9
6	3.3	20	100	90	146	44	74	42	24	14.5	6.2	2.8
7	3.3	15	120	81	*262	44	64	*38	23	13	6.2	3.0
8	4.1	13.5	100	77	501	46	62	36	24	14	5.2	3.6
9	*3.9	16.5	82	68	286	44	115	32	28	*14	5.2	3.4
10	7.1	17.5	70	60	178	70	142	31	25	12.5	4.9	3.1
11	9.6	17.5	61	55	*137	88	174	31	20	12	4.7	3.3
12	9.6	47	75	52	108	94	347	28	16	11	4.9	2.9
13	6.7	44	100	58	88	104	267	27	13	10.5	4.9	9.0
14	5.2	58	92	58	74	99	192	43	*11	10	4.7	6.8
15	4.3	69	130	64	64	85	155	37	11	9.6	4.9	8.1
16	4.1	62	100	100	56	77	142	32	10	11	4.9	10
17	5.2	170	78	286	50	*68	123	30	10	9.6	4.9	6.5
18	4.3	254	68	181	46	60	108	25	10.5	8.8	4.5	5.2
19	20	272	60	123	42	55	99	24	10	8.8	*4.2	4.7
20	16	*192	54	101	40	49	94	22	9.6	7.7	4.1	4.2
21	47	134	53	83	38	54	108	20	9.2	7.4	3.9	4.1
22	42	99	59	85	38	110	189	19	10.5	7.4	3.9	4.1
23	23	81	70	83	36	99	200	18.5	12.5	7.7	3.9	3.6
24	17.5	64	85	81	36	85	158	18.5	10.5	7.7	4.1	3.3
25	14.5	95	73	79	40	110	126	19	9.8	7.7	4.2	3.3
26	12.5	92	66	70	42	110	120	19	9.6	16	4.1	3.1
27	10.5	104	59	64	43	97	94	19.5	10	11.5	3.7	*22
28	9.6	99	70	60	62	101	85	20	28	9.6	3.7	14.5
29	9.1	88	130	56	-	104	83	22	24	10.5	3.6	8.8
30	9.1	72	370	55	------	128	70	25	31	10.5	3.7	6.8
31	8.6	-----	*350	56	-----	148	-----	23	---=--	9.2	4.1	------
Total	326.8	2,238.9	2,935	3,043	2,768	2,513	4,017	963.5	508.0	384.2	153.5	166.6
Mean	10.5	74.6	94.7	98.2	98.9	81.1	134	31.1	16.9	12.4	4.95	5.55
Cfsm	0.574	4.08	5.17	5.37	5.40	4.43	7.32	1.70	0.923	0.678	0.270	0.303
In.	0.66	4.55	5.96	6.18	5.63	5.11	8.16	1.96	1.03	0.78	0.31	0.34
Ac-ft	648	4,440	5,820	6,040	5,490	4,980	7,970	1,910	1,010	762	304	330

Calendar year 1954: Max 986 Min 2.9 Mean 56.5 Cfsm 3.09 In. 41.91 Ac-ft 40,910
Water year 1954-55: Max 501 Min 2.8 Mean 54.8 Cfsm 2.99 In. 40.67 Ac-ft 39,700

Peak discharge (base, 470 cfs).--Probably Dec. 30 (time unknown) 699 cfs (3.11 ft); Feb. 8 (6 a.m.) 708 cfs (3.12 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 28 to Dec. 31, May 23 to June 13; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Lewis River above Muddy River, near Cougar, Wash.

Location (revised).--Lat 46°03'30", long 121°58'50", in SE¼ sec. 30, T. 7 N., R. 7 E., on right bank 1 mile upstream from Pepper Creek, 2 miles upstream from Muddy River, and 15 miles east of Cougar.

Drainage area.--227 sq mi.

Records available.--August 1927 to September 1934, October 1954 to September 1955. Records for August to October 1909, published in WSP 272, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 1,080 ft (from river-profile map). August 1927 to September 1934 at present site at different datum.

Average discharge.--8 years, 1,204 cfs (871,700 acre-ft per year).

Extremes.--Maximum discharge during year, 6,390 cfs June 10 (gage height, 6.87 ft); minimum, 358 cfs Sept. 26 (gage height, 1.67 ft), but may have been less during period of no gage-height record.
1927-34, 1954-55: Maximum discharge, 27,000 cfs Dec. 21, 1933 (gage height, 13.2 ft, from high-water marks, datum then in use), from rating curve extended above 6,000 cfs; minimum, 175 cfs Nov. 21, 1929; minimum gage height, -0.13 ft Sept. 28, 29, 1934, datum then in use.

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

Revisions.--See Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.6	330	4.0	2,000
2.0	500	5.0	3,220
2.5	770	6.7	6,050
3.0	1,100		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a380	510	1,280	2,320	806	640	824	862	2,150	2,340	967	446
2	a375	496	1,190	1,920	752	630	818	850	2,110	2,060	895	442
3	a380	486	1,140	1,650	728	605	782	850	2,230	1,910	824	442
4	a375	473	1,090	1,460	722	565	746	888	2,610	1,850	794	437
5	a370	491	1,100	1,310	716	535	740	1,020	3,210	1,700	776	428
6	a365	540	1,260	*1,190	764	565	776	1,170	3,370	1,630	764	428
7	a380	496	1,120	1,080	1,340	565	850	1,330	4,010	1,560	752	428
8	a475	482	1,050	1,020	3,300	565	954	1,560	4,820	1,590	722	424
9	a430	540	1,020	967	2,460	565	1,410	*1,560	5,710	1,690	686	414
10	a440	565	981	908	1,870	575	1,820	1,600	6,030	*1,700	662	402
11	782	520	934	869	1,550	560	1,570	1,910	6,010	1,700	650	398
12	*680	555	940	830	1,350	560	*1,540	2,350	5,370	1,840	630	386
13	550	540	954	843	1,240	540	1,460	2,190	*4,380	2,080	610	424
14	478	692	947	788	1,140	525	1,320	1,920	3,620	2,290	595	525
15	468	974	1,150	758	1,060	510	1,210	1,750	2,990	2,230	585	565
16	450	1,280	1,020	752	1,000	496	1,140	1,650	2,570	2,060	575	758
17	468	2,730	974	728	940	491	1,050	1,630	2,400	1,600	560	510
18	442	5,520	928	698	869	491	988	1,870	2,350	1,420	555	446
19	585	5,340	888	668	843	486	940	2,670	2,300	1,310	545	419
20	692	3,950	862	662	812	473	908	3,430	2,560	1,270	535	402
21	1,170	*2,770	850	635	776	491	940	3,120	3,150	1,250	525	394
22	1,150	2,150	914	635	752	560	1,010	2,790	3,520	1,240	510	382
23	928	1,770	947	668	728	520	1,020	2,490	3,530	1,260	*500	374
24	800	1,500	960	698	*734	500	981	2,260	2,940	1,200	496	366
25	734	1,670	914	746	698	496	947	2,240	2,490	1,070	486	362
26	674	1,810	869	698	668	478	928	2,160	2,370	1,240	478	362
27	630	1,940	830	686	645	478	869	2,130	2,320	1,240	468	648
28	595	1,740	836	668	620	510	836	2,100	2,390	1,040	464	674
29	570	1,570	862	662	-	806	830	2,300	2,340	1,030	460	*510
30	545	1,410	1,400	668	------	776	830	2,570	2,220	1,010	455	460
31	525	-----	2,770	758	------	752	-----	2,370	------	974	455	------
Total	17,886	45,510	32,980	28,943	29,883	17,309	31,037	59,590	98,070	48,384	18,979	13,656
Mean	577	1,517	1,064	934	1,067	558	1,035	1,922	3,269	1,561	612	455
Cfsm	2.54	6.68	4.69	4.11	4.70	2.46	4.56	8.47	14.4	6.88	2.70	2.00
In.	2.93	7.46	5.40	4.74	4.90	2.84	5.08	9.76	16.07	7.93	3.11	2.24
Ac-ft	35,480	90,270	65,410	57,410	59,270	34,330	61,560	118,200	194,500	95,970	37,640	27,090

Calendar year 1954:	Max	-	Min	-	Mean	-	Cfsm	-	In.	-	Ac-ft	-
Water year 1954-55:	Max	6,030	Min	362	Mean	1,212	Cfsm	5.34	In.	72.46	Ac-ft	877,100

Peak discharge (base, 4,000 cfs).--Nov. 18 (2:30 p.m.) 6,250 cfs (6.80 ft); June 10 (10 p.m.) 6,390 cfs (6.87 ft).

* Discharge measurement made on this day.

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

Muddy River below Clear Creek, near Cougar, Wash.

Location.--Lat 46°06'50", long 122°00'30", in SE¼SW¼ sec. 1, T. 7 N., R. 6 E., on right bank a quarter of a mile downstream from Clear Creek, 3½ miles upstream from mouth, and 14 miles east of Cougar.

Drainage area.--131 sq mi.

Records available.--August 1927 to September 1934, October 1954 to September 1955. Published as "near Cougar" 1927-34. Records for August to October 1909, published in WSP 272 and 492, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 1,200 ft above mean sea level (from river-profile map). August 1927 to September 1934 at site 3 miles downstream at different datum.

Average discharge.--8 years, 820 cfs (593,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,660 cfs Nov. 19 (gage height, 6.10 ft); minimum, 176 cfs Oct. 4-7 (gage height, 1.72 ft).
1927-34, 1954-55: Maximum discharge, 17,500 cfs Dec. 21, 1933 (gage height, 14.0 ft, from high-water marks, site and datum then in use), from rating curve extended above 4,500 cfs; minimum, 94 cfs Dec. 5-7, 1929.

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

Revisions.--See Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.7	170	3.5	1,180
1.9	235	4.0	1,670
2.2	350	4.5	2,260
2.6	550	5.0	2,940
3.0	800	6.0	4,490

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	185	270	772	1,580	658	460	540	640	1,310	1,200	435	207
2	179	266	730	1,370	610	435	550	622	1,280	1,100	420	204
3	179	260	706	1,210	592	415	540	622	1,290	1,000	405	197
4	176	256	706	1,080	580	390	510	658	1,420	950	386	194
5	176	278	751	964	568	377	500	751	1,690	900	372	191
6	176	290	926	870	870	377	540	821	1,890	850	364	185
7	197	266	842	*800	1,110	377	570	926	2,210	800	354	185
8	274	266	779	751	2,300	382	620	1,080	2,790	800	346	185
9	210	290	772	700	1,770	377	1,000	*1,080	3,280	820	338	185
10	218	354	744	658	1,400	400	1,200	1,120	3,500	*842	326	185
11	*386	322	706	622	1,190	386	*1,260	1,270	3,530	849	318	182
12	302	318	712	586	1,070	386	1,340	1,410	*3,220	898	306	182
13	256	314	730	592	972	368	1,260	1,360	2,800	996	298	218
14	235	550	976	550	884	350	1,130	1,280	2,200	1,120	290	263
15	224	800	1,040	539	814	338	1,020	1,180	1,800	1,120	282	.334
16	214	1,070	891	528	758	334	948	1,120	1,500	1,040	278	449
17	235	1,980	835	562	706	326	870	1,120	1,300	870	266	290
18	221	3,710	779	475	652	326	807	1,260	1,250	758	263	249
19	349	4,140	730	455	610	318	758	1,750	1,250	688	252	232
20	372	3,300	694	450	592	310	737	2,200	1,300	658	249	221
21	598	*2,310	682	435	574	334	744	2,080	1,500	634	246	210
22	534	1,670	706	435	550	420	765	1,850	1,700	622	242	204
23	450	1,320	786	445	*512	372	779	1,640	1,800	610	*238	197
24	405	1,120	814	490	539	346	737	1,480	1,500	592	232	194
25	372	1,120	751	517	506	342	712	1,420	1,300	544	228	188
26	346	1,080	712	480	485	354	706	1,350	1,200	658	228	188
27	330	1,040	682	465	470	370	658	1,320	1,200	592	224	316
28	314	926	676	460	455	420	628	1,270	1,200	522	221	322
29	298	884	694	455	-	540	628	1,340	1,200	495	218	*249
30	290	828	1,120	460	------	520	628	1,420	1,150	470	218	238
31	278	-----	1,720	628	------	510	-----	1,380	------	450	214	------
Total	8,979	31,598	25,164	20,612	22,797	11,960	23,685	38,820	54,560	24,448	9,057	6,844
Mean	290	1,053	812	665	814	386	790	1,252	1,819	789	292	228
Cfsm	2.21	8.04	6.20	5.08	6.21	2.95	6.03	9.56	13.9	6.02	2.23	1.74
In.	2.55	8.97	7.14	5.85	6.47	3.40	6.72	11.02	15.49	6.94	2.57	1.94
Ac-ft	17,810	62,670	49,910	40,880	45,220	23,720	46,980	77,000	108,200	48,490	17,960	13,570

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 4,140 Min 176 Mean 763 Cfsm 5.82 In. 79.06 Ac-ft 552,400

Peak discharge (base, 3,500 cfs).--Nov. 19 (8 a.m.) 4,660 cfs (6.10 ft); June 10 (11 p.m.) 3,650 cfs (5.48 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 27 to Apr. 10, June 13 to July 9; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Swift Creek near Cougar, Wash.

Location.--Lat 46°03'50", long 122°11'30", in SW¼NE¼ sec. 28, T. 7 N., R. 5 E., on left bank 5 ft downstream from logging road bridge, 0.1 mile upstream from mouth, and 5 miles east of Cougar.
Drainage area.--26 sq mi, approximately.
Records available.--June 1924 to November 1933 (destroyed by flood of December 1933), August 1954 to September 1955. Records for July to October 1909, published in WSP 253 and 272, have been found to be unreliable and should not be used.
Gage.--Water-stage recorder. Datum of gage is 652.55 ft above mean sea level, datum of 1929. June 18 to Sept. 8, 1924, staff gage, and Sept. 9, 1924, to Dec. 21, 1933, water-stage recorder, at site 200 ft upstream at different datum.
Average discharge.--10 years (1924-33, 1954-55), 201 cfs (145,500 acre-ft per year).
Extremes.--1954: Maximum discharge during period August to September not determined, occurred Aug. 1 during period of no gage-height record; minimum, 139 cfs Sept. 30 (gage height, 0.80 ft).
1954-55: Maximum discharge during water year, 1,100 cfs Feb. 8 (gage height, 2.35 ft); minimum, 129 cfs Sept. 25, 26; minimum gage height, 0.79 ft Oct. 5, 6.
1924-33, 1954-55: Maximum discharge, 1,900 cfs Nov. 24, 1927 (gage height, 3.7 ft, site and datum then in use), from rating curve extended above 300 cfs; minimum, 80 cfs Sept. 17, 21, Oct. 7, 1924, Oct. 20, 1931.
Remarks.--Records good. No regulation or diversion above station.
Revisions.--See Records available.

Discharge, in cubic feet per second, 1954

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	a200	163	9	187	154	17	177	154	25	171	146
2	a195	160	10	184	157	18	174	152	26	177	144
3	*193	160	11	184	160	19	177	152	27	168	141
4	a192	160	12	180	163	20	180	149	28	168	141
5	a191	160	13	180	157	21	174	149	29	168	141
6	*190	157	14	177	154	22	174	149	30	*166	141
7	187	160	15	180	157	23	171	149	31	163	-
8	187	160	16	177	157	24	174	146			
Total										5,566	4,593
Mean										180	153
Cubic feet per second per square mile										6.92	5.88
Runoff in inches										7.96	6.57
Runoff in acre-feet										11,040	9,110

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	139	144	190	465	*220	190	213	187	231	312	196	163
2	139	141	174	341	206	187	200	187	228	276	193	163
3	141	141	177	276	200	184	196	187	231	250	190	163
4	139	139	171	253	200	171	196	193	261	231	187	160
5	136	152	184	235	196	166	196	196	276	231	187	160
6	134	146	220	220	224	163	196	213	288	228	187	157
7	141	141	203	*217	465	166	193	224	324	224	187	157
8	157	141	190	206	805	166	196	231	376	220	184	154
9	139	144	187	200	459	163	287	*224	428	220	184	152
10	*160	146	177	196	324	180	276	224	444	*217	180	146
11	194	144	166	193	272	184	238	261	418	217	177	144
12	157	146	190	193	250	184	296	257	*358	224	174	141
13	146	146	213	196	238	184	280	235	*300	242	174	167
14	144	171	243	190	224	168	238	228	265	265	174	163
15	144	187	288	193	217	160	217	217	246	269	171	166
16	144	256	238	193	210	157	210	210	228	253	171	199
17	149	560	217	193	203	154	200	213	228	228	171	157
18	144	730	200	190	200	*154	193	238	228	217	171	154
19	183	636	193	190	196	154	190	284	238	206	168	154
20	168	418	180	193	196	154	190	304	250	206	168	152
21	257	304	180	190	196	163	193	292	288	203	168	144
22	220	257	190	193	193	193	196	269	292	200	168	141
23	287	*231	213	193	193	184	200	250	316	196	*171	139
24	171	210	217	203	193	174	193	250	280	193	168	132
25	160	246	203	210	190	168	190	238	253	187	168	129
26	154	269	193	200	190	157	190	238	246	269	168	132
27	152	253	180	200	190	157	190	235	242	231	168	177
28	146	231	184	196	190	174	190	235	284	203	163	*154
29	146	213	206	193	-	231	187	242	269	217	163	144
30	144	203	501	193	------	203	187	253	280	203	163	136
31	141	-----	615	224	-----	200	-----	235	------	200	163	------
Total	4,876	7,246	6,883	6,728	7,040	5,393	6,317	7,250	8,596	7,038	5,425	4,600
Mean	157	242	222	217	251	174	211	234	287	227	175	153
Cfsm	6.04	9.31	8.54	8.35	9.65	6.69	8.12	9.00	11.0	8.73	6.73	5.88
In.	6.97	10.36	9.85	9.62	10.07	7.71	9.04	10.37	12.30	10.07	7.76	6.58
Ac-ft	9,670	14,370	13,650	13,340	13,960	10,700	12,530	14,380	17,050	13,960	10,760	9,120

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 805 Min 129 Mean 212 Cfsm 8.15 In. 110.70 Ac-ft 153,500

Peak discharge (base, 800 cfs).--Nov. 18 (12 m.) 919 cfs (2.23 ft); Dec. 30 (7 p.m.) 842 cfs (2.12 ft); Feb. 8 (3 a.m.) 1,100 cfs (2.35 ft).
* Discharge measurement made on this day.

Lewis River near Cougar, Wash.

Location.--Lat 46°03'30", long 122°12'40", 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 1910 to March 1912 (gage heights only), June 1924 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 576.4 ft above mean sea level (river-profile survey). July 1910 to March 1912 staff gage at approximately present site at different datum. June 19 to Aug. 25, 1924, staff gage, and Aug. 26, 1924, to Dec. 27, 1934, water-stage recorder, at present site at datum 2.0 ft higher.

Average discharge.--31 years (1924-55), 2,842 cfs (2,058,000 acre-ft per year).

Extremes.--Maximum discharge during year, 12,900 cfs Nov. 18 (gage height, 8.79 ft); minimum, 892 cfs Oct. 6, 7 (gage height, 3.27 ft).
1910-12, 1924-55: Maximum discharge, 54,400 cfs Dec. 21, 1933 (gage height, 15.7 ft, datum then in use), from rating curve extended above 17,000 cfs; minimum, 454 cfs Oct. 21, 1931 (gage height, 0.01 ft, datum then in use).
Flood of Dec. 17 or 18, 1917, reached a stage of 14.0 ft (discharge, 45,000 cfs).

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

Revisions (water years).--WSP 904: 1939. WSP 964: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 31 to June 23)

3.2	840	6.0	4,570
3.5	1,070	7.0	6,940
4.0	1,530	8.0	9,950
4.5	2,110	9.0	13,700
5.0	2,800		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	922	1,160	2,950	6,750	2,500	1,710	2,800	2,370	4,700	4,440	1,920	1,050
2	915	1,130	2,740	5,400	*2,270	1,640	2,770	2,320	4,550	3,940	1,800	1,040
3	922	1,110	2,610	4,510	2,150	1,580	2,540	2,280	4,720	3,680	1,700	1,030
4	915	1,090	2,540	3,920	2,110	1,480	2,370	2,340	5,270	3,500	1,630	1,020
5	900	1,130	2,580	3,440	2,070	1,410	2,280	2,650	6,260	3,290	1,580	998
6	892	1,240	3,240	3,100	2,240	1,440	2,280	2,960	6,670	3,180	1,550	990
7	922	1,140	3,020	*2,860	4,210	1,430	2,410	3,260	7,520	3,020	1,520	990
8	1,090	1,110	2,780	2,680	9,280	1,430	2,660	*3,750	8,840	3,040	1,480	990
9	990	1,200	2,660	2,510	6,940	1,430	3,960	3,730	10,100	3,180	1,430	982
10	*1,010	1,300	2,580	2,360	5,240	1,550	5,040	3,790	10,600	3,180	1,400	960
11	1,600	1,260	2,410	2,230	4,300	1,580	4,490	4,300	10,700	*3,130	1,380	945
12	1,510	1,290	2,520	2,110	3,730	1,610	4,760	5,130	*9,810	3,290	1,330	938
13	1,250	1,280	2,780	2,160	3,420	1,530	4,780	4,910	*8,200	3,590	1,310	1,030
14	1,130	1,620	2,920	2,010	3,100	1,440	4,120	4,440	6,780	3,960	1,280	1,220
15	1,070	2,430	3,730	1,980	2,860	1,400	3,630	4,100	5,680	3,940	1,260	1,300
16	1,020	3,210	3,160	1,950	2,650	1,350	3,390	3,850	4,980	3,660	1,230	1,830
17	1,070	6,380	2,940	1,910	2,510	1,330	3,120	3,810	4,550	3,060	1,210	1,290
18	1,020	11,300	2,700	1,800	2,320	*1,320	2,860	4,140	4,440	2,710	1,210	1,140
19	1,190	11,600	2,520	1,730	2,230	1,310	2,700	5,630	4,400	2,480	1,200	1,080
20	1,550	9,180	2,380	1,700	2,120	1,280	2,610	7,160	4,780	2,430	1,190	1,020
21	2,360	6,700	2,320	1,630	2,030	1,340	2,640	6,670	5,630	2,380	1,150	990
22	2,740	5,180	2,410	1,630	1,980	1,880	2,890	6,060	6,240	2,370	*1,140	960
23	2,140	*4,240	2,610	1,710	1,920	1,670	3,060	5,450	6,210	2,370	1,130	945
24	1,820	3,610	2,800	1,850	1,950	1,530	2,880	4,980	5,340	2,290	1,120	938
25	1,650	3,850	2,590	2,140	1,850	1,490	2,720	4,910	4,650	2,120	1,110	915
26	1,510	4,020	2,400	1,980	1,770	1,420	2,650	4,780	4,380	2,570	1,100	915
27	1,420	4,260	2,270	1,880	1,720	1,390	2,480	4,680	4,280	2,430	1,090	1,360
28	1,350	3,830	2,270	1,830	1,710	1,500	2,340	4,510	4,400	2,060	1,090	*1,550
29	1,290	3,490	2,500	1,790	-	2,740	2,340	4,870	4,300	2,060	1,070	1,220
30	1,250	3,200	5,140	1,800	------	2,590	2,290	5,400	4,200	2,010	1,070	1,130
31	1,200	-----	8,410	2,150	-----	2,580	-----	5,150	------	1,920	1,070	------
Total	40,618	103,540	91,480	77,500	83,180	49,380	91,860	134,380	183,180	91,280	40,750	32,766
Mean	1,310	3,451	2,951	2,500	2,971	1,593	3,062	4,335	6,106	2,945	1,315	1,092
Cfsm	2.72	7.17	6.14	5.20	6.18	3.31	6.37	9.01	12.7	6.12	2.73	2.27
In.	3.14	8.01	7.07	5.99	6.43	3.82	7.10	10.39	14.16	7.06	3.15	2.53
Ac-ft	80,560	205,400	181,400	153,700	165,000	97,940	182,200	266,500	363,300	181,100	80,830	64,990

Calendar year 1954: Max 11,600 Min 892 Mean 3,329 Cfsm 6.92 In. 93.95 Ac-ft 2,410,000
Water year 1954-55: Max 11,600 Min 892 Mean 2,794 Cfsm 5.81 In. 78.85 Ac-ft 2,023,000

Peak discharge (base, 9,000 cfs).--Nov. 18 (2 p.m.) 12,900 cfs (8.79 ft); Feb. 8 (8 a.m.) 10,600 cfs (8.20 ft); June 11 (1 a.m.) 11,200 cfs (8.20 ft).
* Discharge measurement made on this day.

Reservoirs in Lewis River basin, Wash.

Yale Reservoir.--Lat 45°57'50", long 122°20'00", in NE¼ sec. 32, T. 6 N., R. 4 E., at left end of Yale Dam on Lewis River just upstream from intake, 500 ft upstream from powerhouse, 1 mile upstream from Canyon Creek, and 3 miles southeast of Yale. Drainage area, 596 sq mi. Records available, August 1952 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Prior to Feb. 1, 1954, indicating gage at same site and datum. Maximum contents during year, 401,800 acre-ft June 10 (elevation, 489.97 ft); minimum, 257,300 acre-ft Mar. 24 (elevation, 446.06 ft). Maximum contents during period 1952-55, 402,100 acre-ft Mar. 13, 1954 (elevation, 490.08 ft); minimum observed since reservoir was first filled, 250,900 acre-ft Oct. 30, 1953 (elevation, 443.89 ft).

Reservoir is formed by rock-fill dam; storage began July 31, 1952. Usable capacity, 189,530 acre-ft between elevations 430 ft (lower limit for economic operation) and 490 ft (top of spillway gates). Dead storage, 212,250 acre-ft. Records given herein represent total contents. Water used by Pacific Power & Light Co. for power development. Records of stage and data from which capacity table was computed furnished by Pacific Power & Light Co.

Lake Merwin.--Lat 45°57'25", long 122°33'15", in SW¼ sec. 34, T. 6 N., R. 2 E., on dam on Lewis River at Ariel. Drainage area, 730 sq mi. Records available, March 1931 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Maximum contents during year, 423,200 acre-ft June 19 (elevation, 239.66 ft); minimum, 345,200 acre-ft Nov. 14 (elevation, 219.35 ft). Maximum contents during period 1931-55, not determined; minimum observed since reservoir was first filled, 164,200 acre-ft Dec. 5, 1936 (elevation, 166.7 ft).

Reservoir is formed by concrete arch dam completed in 1931. Usable capacity, 246,000 acre-ft between elevations 165 ft (lower limit of regulation set by Federal Power Commission) and 235 ft (top of spillway gates). Dead storage, 159,050 acre-ft. Records given herein represent total contents. Water used for power.

Month-end elevation and total contents, water year 1954 to September 1955

Date	Yale Reservoir			Lake Merwin		
	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	488.5	396,100	-	236.7	411,300	-
Oct. 31	465.9	317,500	-78,600	223.4	360,200	-51,100
Nov. 30	480.9	368,300	+50,800	227.8	376,800	+16,600
Dec. 31	476.3	352,100	-16,200	232.7	395,600	+18,800
Calendar year 1954	-	-	-6,600	-	-	-27,200
Jan. 31	453.2	278,200	-73,900	229.0	381,400	-14,200
Feb. 28	457.8	292,100	+13,900	231.2	389,800	+8,400
Mar. 31	457.0	289,700	-2,400	232.5	394,900	+5,100
Apr. 30	465.7	316,800	+27,100	230.4	386,800	-8,100
May 31	488.6	396,500	+79,700	237.4	414,100	+27,300
June 30	488.1	394,600	-1,900	a239.5	422,400	+8,300
July 31	486.9	390,200	-4,400	237.2	413,300	-9,100
Aug. 31	489.5	399,900	+9,700	239.3	421,600	+8,300
Sept.30	484.2	380,200	-19,700	232.1	393,300	-28,300
Water year 1954-55	-	-	-15,900	-	-	-18,000

† Elevation at 12 p.m.
a Elevation furnished by Pacific Power & Light Co. from their powerplant record.

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 October 1909, November 1909 (gage heights only), July to October 1922, July 1923 to September 1955. Published as "near Ariel" 1922-29. Prior to October 1952, discharge measurements made at site half a mile downstream; low discharges not equivalent due to local inflow.

Gage.--Water-stage recorder. Datum of gage is 44 ft above mean sea level, unadjusted (levels by Pacific Power & Light Co.). July to November 1909, staff gage at site 4 miles upstream at different datum. July 27 to Oct. 28, 1922, and July 31, 1923, to Apr. 20, 1930, staff gages at site half a mile downstream at datums 3.90 and 0.90 ft higher, respectively, than present datum.

Average discharge.--32 years (1923-55), 4,634 cfs (3,355,000 acre-ft per year), adjusted for storage in Lake Merwin Reservoir since March 1931, and Yale Reservoir since August 1952.

Extremes.--Maximum discharge during year, 20,200 cfs June 11 (gage height, 11.38 ft); minimum not determined; minimum daily, 760 cfs Mar. 27.
1909, 1922-55: Maximum discharge, 129,000 cfs Dec. 22, 1933 (gage height, 35.0 ft, from floodmarks), from rating curve extended above 56,000 cfs on basis of computation of peak flow over dam; no flow at times June 30, July 1-3, 6-9, 1931 (caused by regulation during construction of Ariel Dam); minimum daily, 1 cfs July 6, 1931.

Remarks.--Records good except those for October and July to September, which are fair. No diversion. Flow regulated by Lake Merwin and Yale Reservoir (see preceding page).

Cooperation.--Gage-height record collected in cooperation with Pacific Power & Light Co.

Revisions (water years).--WSP 884: 1938. WSP 984: 1936-37, 1940-42.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,110	5,680	5,850	7,050	*4,480	4,680	4,550	5,780	5,490	6,580	2,450	2,140
2	1,040	5,950	5,870	7,070	4,640	4,540	4,110	5,770	5,510	5,890	2,520	2,070
3	795	5,680	6,730	7,180	4,670	4,720	2,120	6,180	5,280	3,820	2,310	1,700
4	2,460	3,250	6,060	7,110	4,400	4,820	4,280	5,480	4,960	4,230	2.320	894
5	2,620	4,090	5,530	7,160	2,780	3,630	4,440	4,760	4,370	6,110	2,040	864
6	2,690	4,190	5,820	7,180	2,750	2,320	4,620	5,120	8,480	5,920	1,710	1,400
7	2,710	2,380	5,940	7,680	5,780	3,670	4,610	4,150	9,700	5,540	858	2,230
8	2,660	4,360	5,920	*7,510	6,700	3,540	4,730	1,570	11,800	5,210	2,140	2,240
9	2,610	4,680	6,060	7,600	7,260	2,900	4,870	4,930	13,200	3,390	2,130	2,260
10	2,410	4,380	6,070	7,580	6,280	3,810	4,480	*4,370	13,600	1,640	2,130	2,000
11	4,060	4,150	6,120	7,220	6,190	3,900	5,440	4,080	14,800	4,100	2,140	888
12	4,710	4,240	6,110	6,230	6,430	2,020	5,850	4,150	11,800	*3,920	1,780	2,270
13	*4,470	3,930	6,020	5,820	5,900	792	5,920	4,080	10,800	3,870	846	2,270
14	4,910	1,960	6,700	5,750	6,320	4,310	6,570	4,000	*8,620	4,650	822	2,280
15	5,140	4,080	6,770	5,750	5,990	3,730	6,720	1,930	7,940	5,570	1,750	2,370
16	4,440	4,010	6,750	5,660	5,900	3,790	6,450	5,010	6,850	5,530	1,040	2,280
17	4,380	4,000	7,050	5,770	5,560	3,540	5,170	3,910	6,140	3,420	840	2,010
18	5,200	5,540	7,090	5,780	5,440	2,810	6,280	3,880	5,520	5,080	816	888
19	5,300	5,800	6,390	5,680	5,320	1,060	6,540	4,020	4,060	4,150	923	3,820
20	5,400	5,720	6,430	5,730	5,530	*1,320	6,660	4,540	6,960	3,860	834	4,100
21	5,540	5,360	5,730	5,770	5,730	3,970	6,550	4,800	6,320	3,990	804	3,980
22	5,730	*5,440	5,510	5,660	5,120	3,720	6,640	4,850	7,390	3,920	1,190	4,100
23	5,700	5,800	5,490	5,660	4,950	3,500	6,410	5,190	7,960	3,020	834	3,960
24	5,280	5,830	4,740	5,240	4,930	3,770	6,090	5,010	7,870	1,250	*1,020	3,520
25	5,700	5,140	2,200	5,400	5,060	3,030	6,160	4,850	6,440	4,220	1,560	900
26	6,370	5,410	3,020	5,460	4,820	775	6,630	4,560	5,680	4,090	1,670	2,840
27	6,110	5,480	4,620	5,700	3,530	760	6,840	4,620	5,990	4,540	1,640	3,970
28	6,110	5,120	5,660	4,660	5,000	1,970	7,010	4,610	6,030	4,370	870	4,040
29	6,320	5,780	4,920	4,320	-	1,940	6,840	4,620	5,870	4,350	890	2,940
30	5,650	5,990	4,580	2,830	- - -	3,310	6,550	4,780	5,980	2,090	1,110	*2,260
31	5,240	- - -	5,410	4,340	- - -	3,660	- - -	5,350	- - -	2,220	1,410	- - -
Total	132,865	143,420	177,160	187,550	147,460	96,307	170,130	140,950	231,410	130,540	45,397	73,484
Mean	4,286	4,781	5,715	6,050	5,266	3,107	5,671	4,547	7,714	4,211	1,464	2,449
Ac-ft	263,500	284,500	351,400	372,000	292,500	191,000	337,400	279,600	459,000	258,900	90,040	145,800
(†)	-129,700	+67,400	+2,600	-88,100	+22,300	+2,700	+19,000	+107,000	+6,400	-13,500	+18,000	-48,000

Adjusted for change in reservoir contents

Mean	2,176	5,914	5,757	4,617	5,668	3,150	5,990	6,287	7,821	3,991	1,756	1,644
Cfsm	2.98	8.09	7.88	6.32	7.75	4.31	8.19	8.60	10.7	5.46	2.40	2.25
In.	3.43	9.03	9.08	7.28	8.07	4.97	9.14	9.92	11.94	6.29	2.77	2.51
Ac-ft	133,800	351,900	354,000	283,900	314,800	193,700	356,400	386,600	465,400	245,400	108,000	97,800

Observed

Calendar year 1954: Max 18,900 Min 750 Mean 5,321 Ac-ft 3,852,000
Water year 1954-55: Max 14,800 Min 760 Mean 4,594 Ac-ft 3,326,000

Adjusted

Calendar year 1954: Mean 5,274 Cfsm 7.21 In. 97.93 Ac-ft 3,818,000
Water year 1954-55: Mean 4,547 Cfsm 6.22 In. 84.43 Ac-ft 3,292,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Lake Merwin and Yale Reservoir.

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 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 286.9 ft above mean sea level (by plane-table traverse).

Extremes.--Maximum discharge during year, 1,240 cfs Feb. 8 (gage height, 6.23 ft); minimum, 13.5 cfs Oct. 1, Aug. 20, 23, 24; minimum gage height, 1.77 ft Aug. 20, 23, 24. 1951-55: Maximum discharge, 1,900 cfs Dec. 9, 1953 (gage height, 7.54 ft); minimum, 4.6 cfs Sept. 16, 1951; minimum gage height, 1.65 ft Nov. 25, 1952.

Remarks.--Records fair. No regulation. Some diversion for domestic use and irrigation above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 18)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
1.7	13	3.5	289	1.6	8.0	3.0	197
1.9	28	4.0	415	1.8	23	3.5	307
2.2	58	5.0	724	2.0	42	4.0	430
2.6	112	6.0	1,130	2.3	78	5.0	724
3.0	182			2.6	125	6.0	1,130

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14.5	29	186	847	*264	191	517	205	65	59	23	17.5
2	15	28	174	645	229	173	479	193	60	59	21	17.5
3	16	29	169	517	208	173	440	188	66	50	21	17.5
4	16.5	27	161	442	234	193	392	178	61	46	20	17.5
5	15	38	171	399	253	186	350	162	55	*45	19	18
6	14.5	45	273	342	381	176	314	151	52	42	18	17.5
7	16.5	36	287	284	679	171	285	142	49	40	16.5	18
8	18	36	253	266	1,080	165	265	*134	46	41	16.5	19
9	*17	41	248	240	843	162	333	127	40	40	16.5	20
10	26	46	238	221	642	224	314	120	39	37	16.5	20
11	41	41	219	208	520	247	353	119	39	35	16.5	20
12	39	62	266	190	440	295	525	109	39	33	16.5	20
13	32	58	299	212	380	314	537	109	*38	35	16.5	39
14	26	91	271	194	331	300	520	140	37	34	16	41
15	22	108	301	200	290	272	466	128	37	32	16	43
16	22	106	268	256	256	247	440	119	35	29	16	43
17	23	220	255	396	228	230	390	115	34	28	15	33
18	22	483	236	347	203	*217	350	109	34	28	16	28
19	44	553	221	318	188	205	336	86	33	27	*16	27
20	46	*439	206	315	173	189	326	81	31	25	15	28
21	86	357	192	294	164	199	312	77	30	24	15	24
22	70	306	200	296	156	368	333	75	33	23	15	24
23	55	259	192	273	144	297	365	72	46	23	14.5	a23
24	46	225	225	271	155	278	326	69	37	23	15	a22
25	41	307	236	278	153	300	302	68	34	23	15	a21
26	38	253	206	257	147	278	305	75	32	37	16	a21
27	35	257	184	244	137	265	274	74	32	33	16.5	a32
28	33	231	223	227	178	293	256	64	54	27	15	a33
29	32	215	313	212	-	341	249	64	53	28	15	a29
30	31	200	*865	208	------	382	223	74	46	28	15	a26
31	30	-----	1,090	227	-----	453	-----	70	------	26	16.5	------
Total	983.0	5,126	8,628	9,626	9,056	7,784	10,877	3,497	1,287	1,060	516.0	759.5
Mean	31.7	171	278	311	323	251	363	113	42.9	34.2	16.6	25.3
Cfsm	0.768	4.14	6.73	7.53	7.82	6.08	8.79	2.74	1.04	0.828	0.402	0.613
In.	0.89	4.62	7.77	8.67	8.15	7.01	9.79	3.15	1.16	0.95	0.46	0.68
Ac-ft	1,950	10,170	17,110	19,090	17,960	15,440	21,570	6,940	2,550	2,100	1,020	1,510

Calendar year 1954: Max 1,400 Min 14.5 Mean 169 Cfsm 4.09 In. 55.47 Ac-ft 122,100
Water year 1954-55: Max 1,090 Min 14.5 Mean 162 Cfsm 3.92 In. 53.30 Ac-ft 117,400

Peak discharge (base, 850 cfs).--Dec. 30 (10 p.m.) 1,210 cfs (6.18 ft); Feb. 8 (7 a.m.) 1,240 cfs (6.23 ft).

* Discharge measurement made on this day.

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

East Fork Lewis River near Heisson, Wash.

Location.--Lat 45°50'10", long 122°27'50", 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 1955.

Gage.--Water-stage recorder. Datum of gage is 366.8 ft above mean sea level (from river-profile survey).

Average discharge.--26 years, 736 cfs (532,800 acre-ft per year).

Extremes.--Maximum discharge during year, 7,930 cfs Dec. 30 (gage height, 9.06 ft); minimum, 58 cfs Sept. 5, 6, 7 (gage height, 0.45 ft).
1929-55: 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 excellent. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.4	54	2.0	360	5.0	2,090
.6	73	2.5	530	6.0	3,100
.8	98	3.0	745	7.0	4,370
1.1	146	3.5	1,000	8.0	5,940
1.5	225	4.0	1,310		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	201	714	3,230	1,140	472	1,970	956	570	668	216	74
2	71	193	624	2,230	906	458	1,760	850	542	755	199	70
3	77	187	574	1,650	*775	424	1,410	830	673	550	183	69
4	79	179	526	1,340	755	384	1,160	850	835	448	174	66
5	74	218	530	1,130	805	354	1,070	1,030	895	390	160	61
6	70	278	1,120	934	1,200	342	1,090	1,190	845	345	151	61
7	79	221	1,400	815	3,320	345	1,250	*1,200	880	315	142	62
8	132	221	1,200	732	5,620	390	1,320	1,310	988	303	135	68
9	*104	270	956	646	3,020	417	2,200	1,090	1,110	295	132	66
10	140	324	805	586	2,010	671	2,320	1,040	922	275	125	64
11	351	312	691	542	1,500	840	1,920	1,330	722	*262	123	66
12	441	476	817	502	1,190	983	2,940	1,340	586	252	122	63
13	336	490	1,220	598	1,010	890	2,770	1,040	469	248	117	120
14	280	610	1,100	562	865	732	2,000	906	*408	240	112	164
15	207	840	1,530	562	785	624	1,560	770	357	223	109	149
16	183	1,100	1,140	678	704	570	1,460	714	318	218	108	382
17	189	2,440	922	1,190	628	518	1,300	770	303	197	104	189
18	164	3,380	780	978	566	502	1,140	1,000	306	185	99	137
19	331	3,150	678	800	518	*480	1,040	1,440	300	177	*95	114
20	455	*2,250	619	727	480	455	966	1,370	303	168	93	102
21	1,050	1,560	574	660	452	480	1,070	1,090	330	162	88	95
22	1,110	1,140	709	704	452	1,410	1,730	900	345	159	86	86
23	704	900	790	810	417	1,130	1,810	765	360	157	85	80
24	518	740	983	912	444	885	1,500	660	309	155	86	75
25	424	1,020	895	1,150	424	875	1,230	682	270	151	88	73
26	357	972	760	988	414	795	1,140	714	262	414	86	72
27	312	1,330	664	850	393	727	944	718	258	321	83	*216
28	285	1,200	678	780	434	860	845	664	374	242	80	345
29	258	1,000	1,220	696	-	2,010	865	722	455	262	75	228
30	235	845	*5,410	664	------	1,800	890	825	405	278	73	183
31	216	-----	4,990	886	-----	1,740	-----	678	------	242	80	------
Total	9,284	28,047	35,619	29,532	31,227	23,563	44,670	29,444	15,700	9,057	3,609	3,600
Mean	299	935	1,149	953	1,115	760	1,489	950	523	292	116	120
Cfsm	2.39	7.48	9.19	7.62	8.92	6.08	11.9	7.60	4.18	2.34	0.928	0.960
In.	2.76	8.34	10.60	8.79	9.29	7.01	13.29	8.76	4.67	2.69	1.07	1.07
Ac-ft	18,410	55,630	70,650	58,580	61,940	46,740	88,600	58,400	31,140	17,960	7,160	7,140

Calendar year 1954: Max 5,410 Min 70 Mean 743 Cfsm 5.94 In. 80.68 Ac-ft 537,800
Water year 1954-55: Max 5,620 Min 61 Mean 722 Cfsm 5.78 In. 78.34 Ac-ft 522,400

Peak discharge (base, 6,100 cfs).--Dec. 30 (6:30 p.m.) 7,930 cfs (9.06 ft); Feb. 8 (7:30 a.m.) 7,340 cfs (8.77 ft).
* Discharge measurement made on this day.

Kalama River below Italian Creek, near Kalama, Wash.

Location.--Lat 46°02'40", long 122°48'50", in NE¼SW¼ sec. 33, T. 7 N., R. 1 W., on right bank 2½ miles northeast of Kalama, 3 miles upstream from mouth, and 5 miles downstream from Italian Creek.

Drainage area.--201 sq mi.

Records available.--September 1946 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to Oct. 7, 1952, staff gage and crest-stage indicator at site about 70 ft downstream at same datum.

Average discharge.--9 years, 1,255 cfs (908,600 acre-ft per year).

Extremes.--Maximum discharge during year, 9,140 cfs Feb. 8 (gage height, 10.76 ft); minimum, 213 cfs Oct. 7; minimum gage height, 2.39 ft Sept. 10-13.
1946-55: Maximum discharge, 16,000 cfs Dec. 9, 1953 (gage height, 14.93 ft); minimum, 174 cfs Nov. 8, 9, 1952; minimum gage height observed, 1.76 ft Sept. 13, 1951.

Remarks.--Records good except those for periods of shifting control, which are fair. Small diversion for fish hatchery returned to stream above gage. No regulation.

Rating table, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.3	200	5.0	2,260
2.8	540	6.0	3,200
3.4	960	8.0	5,380
4.0	1,410	9.5	7,360

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	258	428	967	4,230	2,040	869	2,550	1,060	1,060	1,050	540	310
2	252	414	897	3,060	1,770	848	2,320	1,040	1,010	1,020	519	304
3	265	414	855	2,380	1,530	792	1,940	1,040	1,050	890	498	298
4	258	400	827	1,960	1,420	736	1,650	1,020	1,140	820	477	291
5	239	442	841	1,670	1,370	687	1,470	1,090	1,280	764	463	284
6	226	519	1,540	1,470	1,650	673	1,370	1,170	*1,270	722	449	278
7	232	463	2,040	1,330	3,800	673	1,390	1,230	1,450	687	442	278
8	337	456	1,680	1,250	7,330	701	1,470	1,330	1,740	687	421	278
9	298	498	1,510	1,160	4,230	715	2,170	1,260	1,880	701	414	272
10	*304	547	1,360	1,090	2,860	946	2,630	1,190	1,900	680	407	258
11	575	547	1,230	1,020	2,220	1,140	2,240	*1,280	1,770	659	393	258
12	610	666	1,300	967	1,810	1,430	3,440	1,430	1,540	*659	393	258
13	526	673	1,750	1,090	1,570	1,270	3,480	1,350	1,230	680	386	386
14	463	1,060	1,770	1,060	1,390	1,110	2,670	1,340	1,040	687	372	463
15	414	*1,750	2,370	1,090	1,260	974	2,180	1,180	911	666	365	547
16	386	2,050	1,940	1,300	1,170	897	1,970	1,110	841	645	365	729
17	407	3,110	1,630	1,740	1,090	834	1,740	1,080	813	582	358	554
18	372	5,000	1,400	1,580	1,020	806	1,580	1,140	820	540	351	477
19	638	4,590	1,250	1,310	960	*785	1,480	1,560	827	526	344	435
20	743	3,100	1,160	1,180	911	757	1,460	1,790	848	512	337	400
21	1,100	2,120	1,120	1,090	876	764	1,390	1,510	974	498	330	372
22	1,090	1,600	1,200	1,130	855	1,370	1,440	1,310	1,040	491	*330	358
23	897	1,310	1,320	1,190	820	1,390	1,630	1,160	1,020	484	330	344
24	757	1,110	1,590	1,260	848	1,180	1,590	1,060	932	470	330	324
25	680	1,270	1,490	1,540	820	1,140	1,470	1,040	897	463	330	317
26	603	1,230	1,290	1,470	806	1,060	1,440	1,070	799	729	330	*298
27	554	1,370	1,160	1,360	778	1,030	1,280	1,080	785	757	324	519
28	512	1,270	1,190	1,280	820	1,160	1,190	1,030	869	652	317	589
29	484	1,160	1,560	1,230	-	1,960	1,140	1,080	904	617	317	491
30	463	1,060	5,060	1,220	------	2,270	1,080	1,240	855	596	310	449
31	442	-----	*6,220	*1,520	-----	2,420	-----	1,190	------	568	310	------
Total	15,385	40,627	51,517	46,227	48,024	33,387	54,850	37,460	33,495	20,502	11,852	11,419
Mean	496	1,354	1,662	1,491	1,715	1,077	1,828	1,208	1,116	661	382	381
Cfsm	2.47	6.74	8.27	7.42	8.53	5.36	9.09	6.01	5.55	3.29	1.90	1.90
In.	2.85	7.52	9.53	8.55	8.89	6.18	10.15	6.93	6.20	3.79	2.19	2.11
Ac-ft	30,520	80,580	102,200	91,690	95,250	66,220	108,800	74,300	66,440	40,670	23,510	22,650

Calendar year 1954: Max 6,570 Min 226 Mean 1,226 Cfsm 6.10 In. 82.79 Ac-ft 887,500
Water year 1954-55: Max 7,330 Min 226 Mean 1,109 Cfsm 5.52 In. 74.89 Ac-ft 802,800

Peak discharge (base, 6,000 cfs).--Nov. 18 (3:45 p.m.) 6,280 cfs (8.71 ft); Dec. 30 (10:30 p.m.) 8,200 cfs (10.10 ft); Feb. 8 (8:30 a.m.) 9,140 cfs (10.76 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 1 to Nov. 14, Sept. 20-30.

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 September 1919, September 1929 to September 1955. Published as "at Lewis" 1911-19.

Gage.--Water-stage recorder. Datum of gage is 1,048.0 ft above mean sea level (Bureau of Public Roads benchmark). 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.--34 years, 1,606 cfs (1,163,000 acre-ft per year).

Extremes.--Maximum discharge during year, 10,100 cfs June 10 (gage height, 8.62 ft); minimum, 378 cfs Mar. 20; minimum gage height, 2.47 ft Sept. 26.
1911-19, 1929-55: Maximum discharge, 36,600 cfs Dec. 21, 1933 (gage height, 13.0 ft), from rating curve extended above 12,600 cfs; minimum, 130 cfs Nov. 29, 1952; minimum gage height, that of Sept. 26, 1955.

Remarks.--Records fair. Small diversions for domestic use. No regulation.

Revisions (water years).--WSP 884: 1938. WSP 1348: 1916-18(M), 1934.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	468	636	1,370	2,680	950	495	788	642	3,260	3,120	2,250	699
2	450	606	1,230	2,050	855	490	802	660	3,090	2,640	1,840	718
3	450	578	1,250	1,700	760	486	739	660	3,540	2,520	1,440	760
4	434	556	1,240	1,480	706	459	680	699	4,600	2,520	1,410	767
5	414	732	1,220	1,270	648	450	666	*998	5,730	2,420	1,480	774
6	394	950	1,430	1,140	706	459	732	1,450	6,190	2,600	1,560	774
7	410	781	1,270	1,020	1,750	459	958	1,760	7,590	2,510	1,600	781
8	600	725	1,140	950	4,330	486	1,380	2,260	8,940	2,600	1,500	692
9	525	725	1,060	870	*2,360	495	2,100	2,080	9,100	2,970	a1,400	666
10	505	706	982	840	1,600	535	2,400	2,240	9,240	3,140	a1,300	648
11	1,360	*673	886	781	1,260	540	1,890	3,360	9,020	3,240	a1,250	600
12	1,150	686	862	746	1,040	525	1,740	4,190	7,930	3,910	a1,200	567
13	862	692	862	760	910	515	1,650	3,260	6,290	4,780	a1,150	578
14	753	982	810	725	825	490	1,370	2,540	5,140	5,730	a1,100	774
15	781	1,310	958	706	753	464	1,170	2,240	4,250	5,590	a1,050	648
16	818	1,670	832	686	706	450	1,040	2,080	3,420	5,220	a1,000	988
17	950	2,310	781	673	648	442	934	2,050	*3,190	3,740	a980	781
18	825	5,970	732	654	594	*438	848	2,730	3,290	3,090	934	584
19	1,020	5,980	673	630	572	418	781	4,860	3,290	2,800	934	525
20	1,250	4,150	648	630	556	394	732	6,050	3,870	*2,720	886	510
21	2,360	2,930	732	600	550	398	725	4,820	5,510	2,720	832	490
22	2,190	2,540	*1,290	600	540	*495	753	3,960	6,140	2,830	774	442
23	1,600	2,160	1,310	699	520	477	795	3,420	5,530	3,000	732	414
24	1,290	1,820	1,320	840	525	454	767	3,040	4,150	2,830	706	414
25	1,090	2,430	1,140	910	505	442	725	3,100	3,400	2,250	692	410
26	958	2,700	958	878	486	426	699	3,090	3,450	2,130	636	410
27	870	2,880	862	832	482	426	636	2,950	3,600	2,050	630	845
28	802	2,310	825	*802	477	464	606	2,830	3,920	1,730	630	*918
29	746	1,880	878	753	-	753	600	3,850	3,830	2,220	660	*692
30	718	1,590	1,600	739	------	781	589	4,740	3,340	2,160	692	578
31	680	-----	3,090	848	-----	739	------	3,910	------	2,090	706	------
Total	27,723	54,658	34,241	29,492	26,614	15,345	30,295	86,519	153,840	93,870	33,954	19,447
Mean	894	1,822	1,105	951	950	495	1,010	2,791	5,128	3,028	1,095	648
Cfsm	3.11	6.35	3.85	3.31	3.31	1.72	3.52	9.72	17.9	10.6	3.82	2.26
In.	3.59	7.08	4.44	3.82	3.45	1.99	3.93	11.21	19.93	12.16	4.40	2.52
Ac-ft	54,990	108,400	67,920	58,500	52,790	30,440	60,090	171,600	305,100	186,200	67,350	38,570

Calendar year 1954: Max 6,700 Min 394 Mean 1,884 Cfsm 6.56 In. 89.12 Ac-ft 1,364,000
Water year 1954-55: Max 9,240 Min 394 Mean 1,660 Cfsm 5.78 In. 78.52 Ac-ft 1,202,000

Peak discharge (base, 8,000 cfs).--June 10 (9:30 p.m.) 10,100 cfs (8.62 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for nearby stations.

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.--321 sq mi.

Records available.--October 1910 to February 1912, September 1929 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,221.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Feb. 29, 1912, staff gage at site 1 mile upstream at different datum. Sept. 28 to Oct. 31, 1929, staff gage, and Nov. 1, 1929, to Nov. 26, 1949, Oct. 1-24, 1950, water-stage recorder, at site 450 ft upstream at datum 0.26 ft higher.

Average discharge.--27 years (1910-11, 1929-55), 1,305 cfs (944,800 acre-ft per year).

Extremes.--Maximum discharge during year, 7,100 cfs June 11 (gage height, 8.22 ft); minimum, 370 cfs sometime during period of no gage-height record in September (gage height, 3.34 ft, from recorded range in stage).
1910-12, 1929-55: 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 excellent except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 794: 1934. WSP 1288: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.3	325	5.0	1,790
3.5	455	5.5	2,370
3.7	595	6.0	3,060
4.0	825	7.0	4,770
4.5	1,270	8.2	7,060

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	455	560	1,120	1,720	937	625	946	973	2,200	2,000	1,110	490
2	448	546	1,050	1,560	893	625	937	973	2,120	1,700	1,040	480
3	448	532	1,020	1,410	850	610	919	973	2,330	1,550	928	490
4	442	518	991	1,280	825	574	910	1,020	2,840	1,500	902	490
5	429	518	1,050	1,190	809	553	893	*1,130	3,630	1,500	876	490
6	422	567	1,330	1,110	850	560	955	1,280	3,890	1,550	876	480
7	442	539	1,220	1,040	1,210	560	1,100	1,490	4,360	1,550	868	480
8	497	525	1,150	991	2,190	574	1,330	1,770	5,210	1,600	834	470
9	483	525	1,100	946	1,920	588	1,620	1,740	6,380	1,600	785	460
10	455	553	1,030	884	1,580	610	1,900	1,810	6,860	1,700	769	450
11	655	*539	973	850	1,400	588	1,740	2,130	6,930	1,900	761	430
12	722	560	955	809	1,270	602	1,710	2,510	6,250	2,100	720	420
13	618	553	955	825	1,170	581	1,680	2,270	5,040	2,050	700	400
14	574	692	928	777	1,100	567	1,540	2,010	4,130	2,500	670	580
15	560	1,030	1,120	753	1,040	546	1,410	1,870	3,390	2,400	650	500
16	560	1,270	1,010	745	964	532	1,340	1,790	2,870	2,200	640	700
17	602	1,720	973	722	919	525	1,260	1,790	*2,600	1,800	650	540
18	574	2,840	928	708	834	*525	1,190	2,170	2,580	1,600	*670	450
19	662	3,560	893	662	817	518	1,130	3,200	2,470	1,500	660	400
20	745	3,040	868	670	793	504	1,080	4,020	2,600	*1,450	650	380
21	876	2,290	910	640	769	518	1,070	3,620	3,180	1,410	630	375
22	1,090	1,900	*1,050	670	745	574	1,120	3,160	3,580	1,400	600	375
23	937	1,650	1,150	730	722	553	1,120	2,800	3,100	1,410	590	375
24	842	1,440	1,200	769	715	539	1,080	2,500	2,600	1,380	570	375
25	777	1,450	1,140	785	692	539	1,040	2,460	2,300	1,260	550	375
26	730	1,450	1,070	769	670	518	1,040	2,380	2,350	1,220	520	375
27	685	1,540	1,000	745	648	525	991	2,260	2,400	1,230	500	620
28	655	1,410	982	745	640	560	946	2,170	2,650	1,120	500	*662
29	625	1,300	982	*745	-	1,030	946	2,410	2,500	1,090	500	525
30	595	1,200	1,250	769	------	982	937	2,800	2,300	1,150	490	462
31	574	-----	1,880	868	-----	893	-----	2,500	------	1,110	490	------
Total	19,179	36,817	33,278	27,887	27,972	18,598	35,880	65,979	105,640	49,530	21,699	14,099
Mean	619	1,227	1,073	900	999	600	1,196	2,128	3,521	1,598	700	470
Cfsm	1.93	3.82	3.34	2.80	3.11	1.87	3.73	6.63	11.0	4.98	2.18	1.46
In.	2.22	4.27	3.86	3.23	3.24	2.15	4.16	7.64	12.24	5.74	2.51	1.63
Ac-ft	38,040	73,030	66,010	55,310	55,480	36,890	71,170	130,900	209,500	98,240	43,040	27,960

Calendar year 1954: Max 5,170 Min 422 Mean 1,560 Cfsm 4.86 In. 65.98 Ac-ft 1,129,000
Water year 1954-55: Max 6,930 Min 375 Mean 1,251 Cfsm 3.90 In. 52.89 Ac-ft 905,600

Peak discharge (base, 3,400 cfs).--Nov. 19 (3 p.m.) 3,820 cfs (6.47 ft); May 20 (5 a.m.) 4,150 cfs (6.66 ft); June 11 (12:20 a.m.) 7,100 cfs (8.22 ft); June 22 or 23 (time unknown) 3,730 cfs (6.42 ft).

* Discharge measurement made on this day.

Note.--No gage-height record June 23 to July 19, Aug. 12-17, Aug. 19 to Sept. 27; discharge estimated on basis of recorded range in stage 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 1955 in reports of Geological Survey. October 1947 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

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.

Average discharge.--8 years (1947-55), 5,142 cfs (3,723,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,300 cfs June 11 (gage height, 14.22 ft); minimum, 1,200 cfs Sept. 26 (gage height, 3.56 ft).
1947-55: Maximum discharge, 33,800 cfs Feb. 11, 1951 (gage height, 16.60 ft); minimum, 518 cfs Nov. 29, 1952 (gage height, 2.34 ft).

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

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.5	1,160	6.0	3,460	11.0	13,200
4.0	1,530	7.0	4,780	12.0	16,200
4.5	1,930	8.0	6,350	13.0	19,600
5.0	2,380	9.0	8,220	14.0	23,400
5.5	2,890	10.0	10,600	15.0	27,400

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,440	1,880	4,300	8,000	3,630	2,310	3,740	3,000	7,660	8,550	4,500	1,860
2	1,390	1,830	3,950	6,810	3,510	2,280	3,790	3,040	6,950	7,760	4,430	1,830
3	1,380	1,750	3,680	5,880	3,330	2,200	3,680	3,020	7,260	7,130	3,840	1,870
4	1,370	1,700	3,510	5,170	3,220	2,090	3,460	*3,080	8,590	7,040	3,540	1,870
5	1,340	1,690	3,440	4,680	3,160	1,970	3,300	3,440	11,400	6,660	3,460	1,880
6	1,290	2,030	3,990	4,250	3,210	1,970	3,360	4,080	12,400	6,570	3,480	1,870
7	1,290	1,990	3,920	3,920	5,240	1,950	3,710	4,720	14,300	6,470	3,520	1,880
8	1,400	1,870	3,630	3,690	11,900	1,980	4,430	5,720	17,400	6,490	3,460	1,810
9	1,550	1,840	3,460	3,500	11,000	2,020	5,750	5,840	21,300	6,900	3,200	1,730
10	1,430	*1,900	3,300	3,280	7,880	2,160	7,380	5,840	23,400	7,480	3,060	1,690
11	1,950	1,860	3,120	3,120	6,420	2,300	6,790	6,710	23,700	7,330	2,980	1,640
12	2,800	1,860	3,060	2,980	5,520	2,240	6,210	9,010	22,600	7,880	2,880	1,570
13	2,450	1,860	3,130	2,990	4,900	2,190	6,120	8,550	19,000	8,900	2,700	1,570
14	2,150	2,050	3,000	2,910	4,440	2,130	5,520	7,270	15,200	10,400	2,570	1,900
15	2,010	2,760	3,390	2,770	4,100	2,050	4,990	6,440	12,400	11,000	2,490	1,830
16	2,030	3,510	3,230	2,720	3,830	1,980	4,640	6,020	*10,200	10,600	2,430	2,000
17	2,140	4,880	3,090	2,680	3,580	*1,950	4,320	5,800	8,990	8,550	*2,390	2,070
18	2,160	9,280	3,000	2,570	3,300	1,940	4,010	6,420	8,770	6,950	2,370	1,710
19	2,160	14,200	2,910	2,460	3,140	1,910	3,750	9,720	8,680	*6,250	2,370	1,550
20	2,710	11,800	2,860	2,450	3,000	1,850	3,570	14,000	9,100	5,920	2,330	1,490
21	3,230	8,460	*2,940	2,380	2,880	1,870	3,480	12,800	11,400	5,730	2,260	1,430
22	4,320	6,710	3,470	2,410	2,780	2,350	3,560	10,800	14,100	5,700	2,200	1,380
23	3,760	5,880	4,000	2,670	2,680	2,480	3,590	9,150	13,800	5,810	2,150	1,300
24	3,260	5,060	4,250	3,030	2,660	2,380	3,510	7,980	11,500	5,840	2,080	1,260
25	2,920	5,000	4,040	3,290	2,580	2,340	3,360	7,700	9,250	5,290	2,000	1,220
26	2,660	5,780	3,760	3,270	2,460	2,220	3,350	7,500	8,480	4,770	1,930	1,220
27	2,460	6,470	3,500	3,190	2,350	2,220	3,190	7,330	8,590	4,920	1,870	*1,440
28	2,300	6,000	3,350	*3,120	2,340	2,300	3,030	6,910	8,970	4,430	1,860	2,200
29	2,170	5,300	3,480	3,070	-	3,410	3,000	7,480	9,300	4,220	1,860	1,920
30	2,060	4,720	4,280	3,070	------	3,800	2,940	9,580	8,480	4,800	1,870	1,680
31	1,970	-----	7,780	3,260	-----	3,530	-----	8,990	------	4,460	1,900	------
Total	67,550	131,920	112,820	109,590	119,040	70,370	125,530	217,920	373,170	210,800	83,980	50,650
Mean	2,179	4,397	3,639	3,535	4,251	2,270	4,184	7,030	12,440	6,800	2,709	1,688
Cfsm	2.09	4.22	3.49	3.39	4.08	2.18	4.02	6.75	11.9	6.53	2.60	1.62
In.	2.41	4.71	4.03	3.91	4.25	2.51	4.48	7.78	13.32	7.52	3.00	1.81
Ac-ft	134,000	261,700	223,800	217,400	236,100	139,600	249,000	432,200	740,200	418,100	166,600	100,500

Calendar year 1954: Max 17,100 Min 1,290 Mean 5,319 Cfsm 5.10 In. 69.30 Ac-ft 3,851,000
Water year 1954-55: Max 23,700 Min 1,220 Mean 4,584 Cfsm 4.40 In. 59.73 Ac-ft 3,319,000

Peak discharge (base, 16,000 cfs).--June 11 (8:30 a.m.) 24,300 cfs (14.22 ft).
* Discharge measurement made on this day.

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 1½ miles north of Mossyrock.

Drainage area.--1,170 sq mi, approximately.

Records available.--January to April 1912, November 1912 to June 1913 (fragmentary), October 1913 to September 1917, March 1926 to September 1935, August 1946 to September 1955. Estimated means October to December 1912 and July to September 1913, published in State Water-Supply Bulletin 5, have been found to be unreliable and should not be used. Revised estimate of 1913 water year figure only in State Water-Supply Bulletin 6.

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, Mar. 12, 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 Sept. 30, 1935, wire-weight gage on bridge at different datum.

Average discharge.--23 years (1912-17, 1926-35, 1946-55), 5,334 cfs (3,862,000 acre-ft per year).

Extremes.--Maximum discharge during year, 26,800 cfs June 11 (gage height, 17.1 ft, from recorded range in stage); minimum, 1,290 cfs Sept. 26 (gage height, 3.56 ft).

1912-17, 1926-35, 1946-55: Maximum discharge, 83,500 cfs Dec. 23, 1933 (gage height, 37.53 ft, average of high-water marks, site and datum then in use), from rating curve extended above 20,000 cfs; minimum, 543 cfs Nov. 30, 1952 (gage height, 3.06 ft).

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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
-	1913	June 4, 1913	†19,000	g12.5
394	1914	Jan. 6, 7, 8, 1914	30,300	a18.0
444	1916	July 3, 1916	23,700	g15.0
464	1917	June 19, 1917	18,200	g12.4
654	1927	Oct. 16, 1926	22,100	b13.7
674	1928	Nov. 25, 1927	35,100	g19.8
709	1930	Feb. 20, 1930	20,100	g12.2
724	1931	Apr. 1, 1931	31,600	g17.0
739	1932	Feb. 27, 28, 1932	31,600	g17.8
769	1934	Dec. 23, 1933	83,500	c37.53
794	1935	Nov. 6, 1934	32,200	g18.1
1154	1949	May 13, 1949	24,700	16.30

† Not previously published.
a Observed.
b Observer's estimate of peak stage.
c Average of high-water marks.
g From graph based on gage readings.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Minor diversions for domestic and farm use above station. No regulation.

Revisions (water years).--WSP 769: 1933. See also Records available. Revised figures of discharge, in cubic feet per second, for high-water period in the water year 1949, superseding those published in WSP 1154, are given herewith:

1949		1949-Con.	
May 10	18,100	May 14	24,000
11	20,500	15	23,100
12	22,600	16	21,800
13	24,200	17	18,600

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
May 1949	460,690	24,200	9,550	14,860	12.7	14.64	913,800
Water year 1948-49	2,029,640	24,200	1,180	5,561	4.75	64.52	4,026,000
Calendar year 1949	2,086,170	28,700	1,050	5,716	4.89	66.32	4,138,000

Cowlitz River at Mossyrock, Wash.--Continued

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-9, Feb. 11 to Apr. 9)

3.5	1,220	9.0	10,000
4.2	2,050	11.0	14,000
5.0	3,150	13.0	18,000
6.0	4,700	17.0	26,600
7.0	6,380		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,540	2,020	4,830	10,400	4,160	2,660	4,300	3,600	9,000	10,000	4,460	1,950
2	1,480	1,950	4,460	8,610	4,080	2,610	4,380	3,600	8,000	9,200	4,430	1,910
3	1,450	1,880	4,170	7,170	3,860	2,520	4,280	3,700	*8,160	8,500	3,950	1,920
4	1,440	1,840	3,980	6,180	*3,750	2,390	4,030	3,800	9,200	8,000	3,630	1,950
5	1,410	1,850	3,820	5,530	3,720	2,270	3,820	4,000	12,200	7,900	3,510	1,950
6	1,360	2,080	4,300	4,990	3,810	2,230	3,800	4,700	13,600	7,700	3,510	1,930
7	1,350	2,190	4,410	4,570	6,420	2,210	4,040	5,400	16,000	7,400	3,540	1,950
8	1,410	2,040	*4,080	4,350	13,800	2,230	4,760	6,400	19,000	7,700	3,500	1,930
9	1,570	1,980	3,870	4,120	14,800	2,300	6,210	6,700	22,000	8,100	3,300	1,820
10	1,550	2,020	3,720	3,870	10,500	2,470	8,580	6,700	24,000	8,600	3,100	1,780
11	1,760	2,020	3,560	3,680	8,090	2,710	8,380	8,000	25,000	8,700	*3,030	1,740
12	2,850	2,040	3,480	3,520	6,650	2,640	7,510	9,000	24,000	9,000	2,940	1,670
13	2,640	2,040	3,570	3,560	5,680	2,590	7,440	9,800	21,000	10,000	2,820	1,660
14	2,300	2,140	3,460	3,510	5,090	2,510	6,720	9,000	18,000	*11,400	2,650	1,900
15	2,140	2,720	3,800	3,340	4,650	2,430	6,010	7,800	17,000	11,800	2,580	1,980
16	2,130	3,460	3,740	3,280	4,330	*2,340	5,550	7,100	13,000	11,300	2,520	2,040
17	2,190	4,810	3,570	3,270	4,040	2,270	5,190	6,800	11,000	9,640	2,480	2,240
18	2,300	8,930	3,450	3,140	3,750	2,260	4,800	8,400	10,000	7,600	2,470	1,880
19	*2,300	15,700	3,360	3,000	3,520	2,220	4,520	12,000	10,000	6,700	2,450	1,680
20	2,760	14,100	3,280	2,990	3,380	2,170	*4,320	16,000	10,000	6,230	2,410	1,600
21	3,140	10,100	3,320	2,970	3,240	2,190	4,160	14,000	11,000	5,970	2,350	1,550
22	4,220	7,780	3,720	2,970	3,150	2,680	4,320	12,000	14,500	5,870	2,280	1,490
23	3,900	6,650	4,300	3,210	3,000	2,900	4,400	10,500	14,000	5,900	2,220	1,430
24	3,420	5,770	4,640	3,560	2,990	2,800	4,100	9,200	13,000	5,970	2,150	1,370
25	3,090	5,480	4,480	3,880	2,900	2,790	4,000	8,800	10,500	5,510	2,100	1,340
26	2,830	6,260	4,220	3,860	2,790	2,690	4,000	8,400	10,000	4,920	2,050	1,320
27	2,610	7,150	3,930	3,760	2,660	2,640	3,800	8,200	9,600	5,000	1,970	1,480
28	2,440	6,880	3,800	3,680	2,660	2,730	3,700	8,200	10,000	4,590	1,950	2,180
29	2,310	6,060	4,030	3,620	-	3,570	3,700	8,600	10,500	4,250	1,930	*2,120
30	2,210	5,380	5,170	3,580	------	4,250	3,600	8,600	10,000	4,780	1,930	1,840
31	2,120	-----	9,440	3,740	-----	4,170	-----	11,000	------	4,510	1,960	------
Total	70,220	145,320	127,960	131,910	141,470	81,440	148,420	250,000	413,260	232,740	86,170	53,600
Mean	2,265	4,844	4,128	4,255	5,052	2,627	4,947	8,065	13,780	7,508	2,780	1,787
Cfsm	1.94	4.14	3.53	3.64	4.32	2.25	4.23	6.89	11.8	6.42	2.38	1.53
In.	2.23	4.62	4.07	4.19	4.50	2.59	4.72	7.95	13.14	7.40	2.74	1.70
Ac-ft	139,300	288,200	253,800	261,600	280,600	161,500	294,400	495,900	819,700	461,600	170,900	106,300

Calendar year 1954: Max 18,600 Min 1,350 Mean 5,952 Cfsm 5.09 In. 69.05 Ac-ft 4,309,000
Water year 1954-55: Max 25,000 Min 1,320 Mean 5,158 Cfsm 4.41 In. 59.85 Ac-ft 3,734,000

Peak discharge (base, 16,000 cfs).--Nov. 19 (8 to 12 p.m.) 16,100 cfs (12.04 ft); Feb. 8 (9:30 p.m.) 17,600 cfs (12.81 ft); May 20 (time and discharge unknown); June 11 (time unknown) 26,800 cfs (17.1 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Apr. 23 to June 2, June 7 to July 13; discharge estimated on basis of recorded range in stage and records for stations near Kosmos and 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 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map).

Average discharge.--5 years, 122 cfs (88,320 acre-ft per year).

Extremes.--Maximum discharge during year, 2,340 cfs Feb. 8 (gage height, 5.55 ft), from rating curve extended above 1,200 cfs on basis of slope-area determination at gage height 7.55 ft; minimum, 9.5 cfs Sept. 11-13 (gage height, 1.48 ft).
1950-55: Maximum discharge, 3,240 cfs Dec. 9, 1953 (gage height, 6.56 ft), caused by release of water held upstream as result of slide, from rating curve extended above 1,800 cfs on basis of logarithmic plotting; minimum, 4.7 cfs Oct. 29, 1952; minimum gage height, 0.87 ft Aug. 25, Sept. 20-24, 1951.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Logging company diverts small amount for sprinkling system. No regulation.

Revisions (water years).--WSP 1348: 1953.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Oct. 1-20, Oct. 22 to Nov. 4, Nov. 10, 11, Feb. 7)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
1.8	12.5	3.0	165	1.4	6.6	2.6	113
1.9	17.5	3.5	340	1.5	10.2	3.0	215
2.1	30	4.0	595	1.6	14.5	3.5	420
2.3	48	4.5	920	1.8	26	4.0	700
2.6	87	5.0	1,360	2.0	41	4.5	1,090
				2.3	71	5.0	1,610

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17.5	30	62	473	234	44	250	120	147	110	40	11.5
2	16.5	29	51	248	158	42	182	110	147	87	36	11
3	18.5	26	45	170	121	39	138	120	160	73	33	10.5
4	16.5	25	40	134	107	37	119	*157	194	66	30	10
5	16	45	36	108	98	35	123	218	206	58	29	9.8
6	15	90	54	90	236	34	163	240	218	56	26	9.8
7	14.5	50	55	76	1,200	33	232	274	274	50	25	9.8
8	29	40	48	74	*1,290	37	334	271	334	51	24	10
9	21	43	48	67	477	45	791	218	338	62	22	10
10	38	*46	50	62	260	75	586	229	313	64	21	9.8
11	175	44	45	57	179	100	338	439	285	59	21	9.8
12	158	60	60	54	135	80	330	385	209	57	20	9.5
13	107	66	170	66	117	65	305	257	145	55	19	22
14	76	90	150	58	108	52	215	200	105	53	18.5	27
15	62	150	250	56	105	46	160	179	87	48	18	45
16	51	250	150	55	94	41	133	171	*78	44	17.5	124
17	47	450	110	51	86	*39	117	197	77	38	*17	57
18	40	700	90	49	76	39	108	305	81	34	16.5	39
19	74	595	85	45	69	36	102	440	81	*32	16	32
20	106	320	80	44	64	35	102	348	90	30	15	28
21	160	168	*117	40	61	40	107	260	107	29	14.5	25
22	119	112	196	46	57	220	150	203	107	27	14	22
23	93	82	193	84	55	160	190	163	100	26	14	21
24	75	64	190	135	57	120	140	152	78	25	14	19.5
25	64	124	147	185	53	100	108	163	68	24	14	18.5
26	55	190	116	138	49	92	102	168	67	42	13.5	18.5
27	48	300	100	116	46	90	89	163	64	38	13	*44
28	44	138	93	*112	46	110	86	155	72	34	12.5	35
29	40	103	125	107	-	220	94	218	70	43	12	31
30	36	80	743	114	------	190	105	246	92	46	11.5	27
31	33	-----	864	232	-----	210	-----	177	------	44	11.5	------
Total	1,865.5	4,510	4,563	3,346	5,638	2,506	5,999	6,946	4,394	1,505	609.0	757.0
Mean	60.2	150	147	108	201	80.8	200	224	146	48.5	19.6	25.2
Cfsm	3.67	9.15	8.96	6.59	12.3	4.93	12.2	13.7	8.90	2.96	1.20	1.54
In.	4.23	10.23	10.35	7.59	12.79	5.68	13.60	15.75	9.96	3.41	1.38	1.72
Ac-ft	3,700	8,950	9,050	6,640	11,180	4,970	11,900	13,780	8,720	2,990	1,210	1,500

Calendar year 1954: Max 944 Min 13 Mean 120 Cfsm 7.32 In. 99.22 Ac-ft 86,780
Water year 1954-55: Max 1,290 Min 9.5 Mean 117 Cfsm 7.13 In. 96.69 Ac-ft 84,590

Peak discharge (base, 800 cfs).--About Nov. 18 (time and discharge unknown); Dec. 30 (7:30 p.m.) 1,300 cfs (4.94 ft); Feb. 8 (12:30 a.m.) 2,340 cfs (5.55 ft); Apr. 9 (4 to 5 p.m.) 992 cfs (4.39 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 21, Nov. 5-9, 12-18, 26, 27, Dec. 12-20, Mar. 5-16, 18-31, Apr. 22-24, May 1-3; discharge estimated on basis of records for stations on nearby streams.

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 1955.

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.--14 years, 906 cfs (655,900 acre-ft per year).

Extremes.--Maximum discharge during year, 13,700 cfs Feb. 8 (gage height, 12.86 ft), from rating curve extended above 9,200 cfs; minimum, 110 cfs Sept. 12, 13 (gage height, 4.10 ft).

1941-55: Maximum discharge, 22,500 cfs Dec. 9, 1953 (gage height, 15.00 ft), from rating curve extended above 9,200 cfs; minimum, 60 cfs Sept. 21-24, 1951 (gage height, 3.54 ft).

Remarks.--Records good. Several small diversions for municipal and domestic use above station. No regulation.

Revisions (water years).--WSP 1349: 1946-47.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
4.4	140	7.0	1,580	4.1	110	7.0	1,650
4.7	220	7.5	2,100	4.4	174	7.5	2,160
5.0	320	8.0	2,700	4.7	258	8.0	2,750
5.5	530	9.0	4,200	5.1	398	9.0	4,200
6.0	800	10.0	6,050	5.5	580	10.0	6,050
6.5	1,140			6.0	855	11.5	9,620
				6.5	1,200		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	268	902	4,740	1,850	580	2,220	954	1,220	1,140	435	131
2	180	250	794	3,050	1,430	550	1,980	928	1,110	1,000	387	127
3	185	244	716	2,200	1,180	516	1,690	948	*1,220	819	349	123
4	185	235	665	1,780	*1,080	474	1,440	994	1,400	708	317	123
5	172	299	615	1,500	1,080	452	1,310	1,180	1,500	630	293	121
6	168	464	704	1,260	1,500	443	1,340	1,290	1,420	590	277	118
7	160	372	782	1,110	5,590	439	1,580	1,400	1,610	545	258	116
8	182	340	*692	1,050	9,060	465	1,940	1,500	1,980	521	246	118
9	185	360	665	1,020	4,010	492	3,850	1,320	2,180	595	234	120
10	196	360	686	915	2,600	753	3,740	1,300	2,100	580	222	118
11	593	356	640	849	1,950	954	2,630	1,880	1,900	545	*214	116
12	710	404	728	795	1,590	855	2,490	2,240	1,530	521	208	114
13	595	416	1,100	909	1,360	759	2,460	1,700	1,190	502	206	135
14	468	525	1,010	922	1,220	680	1,990	1,480	954	*488	197	220
15	396	818	1,390	867	1,120	640	1,670	1,320	813	452	187	228
16	344	1,060	1,150	855	1,030	*590	1,480	1,200	713	423	179	614
17	332	2,140	968	873	941	560	1,350	1,210	680	383	174	379
18	292	4,090	896	837	855	550	1,210	1,480	718	349	169	271
19	384	3,900	836	765	789	540	1,130	2,200	735	321	164	222
20	*535	2,560	788	783	730	511	*1,100	2,100	753	307	162	197
21	842	1,720	824	771	691	555	1,070	1,650	885	293	157	179
22	716	1,280	1,200	807	680	1,800	1,240	1,370	915	280	155	167
23	610	1,020	1,120	1,080	640	1,340	1,360	1,160	960	271	150	155
24	525	866	1,190	1,310	696	1,070	1,250	1,040	771	261	148	146
25	464	1,240	1,050	1,770	665	974	1,120	1,050	655	255	148	140
26	424	1,540	914	1,510	615	885	1,080	1,130	640	356	146	140
27	388	1,950	812	1,300	570	867	980	1,240	630	371	142	252
28	356	1,520	800	1,220	570	1,040	903	1,100	730	338	137	314
29	324	1,230	1,220	1,140	-	1,890	885	1,290	789	453	140	*249
30	306	1,030	5,450	1,120	------	1,800	879	1,830	843	530	135	214
31	285	-----	7,700	1,480	-----	1,890	------	1,500	------	483	133	------
Total	11,690	32,857	39,007	40,588	46,092	25,914	49,367	42,984	33,544	15,310	6,469	5,667
Mean	377	1,095	1,258	1,309	1,646	836	1,646	1,387	1,118	494	209	189
Cfsm	2.39	6.93	7.96	8.28	10.4	5.29	10.4	8.78	7.08	3.13	1.32	1.20
In.	2.75	7.73	9.18	9.55	10.85	6.10	11.62	10.12	7.90	3.60	1.52	1.33
Ac-ft	23,190	65,170	77,370	80,510	91,420	51,400	97,920	85,260	66,530	30,370	12,830	11,240

Calendar year 1954: Max 7,700 Min 145 Mean 916 Cfsm 5.80 In. 78.68 Ac-ft 663,100
Water year 1954-55: Max 9,060 Min 114 Mean 958 Cfsm 6.06 In. 82.25 Ac-ft 693,200

Peak discharge (base, 7,000 cfs).--Dec. 30 (9 p.m.) 11,100 cfs (12.01 ft); Feb. 8 (4:45 a.m.) 13,700 cfs (12.86 ft).

* Discharge measurement made on this day.

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., near left bank at upstream side of highway bridge, 1 mile southeast of Mossyrock and 4¼ miles upstream from mouth.

Drainage area.--3.45 sq mi.

Records available.--August 1948 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 668.41 ft above mean sea level (levels by city of Tacoma).

Average discharge.--7 years, 9.28 cfs (6,720 acre-ft per year).

Extremes.--Maximum discharge during year, 95 cfs Feb. 8 (gage height, 2.81 ft), from rating curve extended above 35 cfs; minimum, 0.1 cfs Sept. 4, 5, 6, 12 (gage height, 0.68 ft).
1948-55: Maximum discharge, 165 cfs Feb. 17, 1949 (gage height, 3.62 ft), from rating curve extended above 35 cfs; no flow for long periods during most years.

Remarks.--Records good except those below 1 cfs, which are fair. No regulation or diversion above station.

Revisions.--WSP 1288: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.7	0.2	1.3	9.3
.8	.5	1.5	16.5
.9	1.1	1.7	26
1.0	2.1	2.0	41
1.1	3.6	2.5	72

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	1.6	11	34	15	13.5	24	11	4.5	4.7	0.8	0.3
2	.3	1.6	10.5	28	11.5	11.5	20	11	4.5	3.1	.6	.3
3	.5	1.6	10.5	25	10.5	9.9	19	12.5	*5.0	2.0	.6	.2
4	.5	1.6	9.9	23	*13.5	8.3	16.5	10.5	4.7	1.9	.5	.2
5	.8	5.4	9.6	23	13.5	7.7	15.5	9.0	3.6	1.8	.5	.2
6	.6	6.4	12	19.5	23	7.7	13.5	8.3	3.2	2.5	.5	.2
7	.4	3.6	13.5	18	38	8.0	12.5	7.7	2.8	1.9	.4	.2
8	.6	3.2	9.9	22	70	8.3	13.5	7.1	2.2	1.9	.3	.2
9	.8	3.6	*9.9	19.5	48	9.3	22	6.4	1.8	2.9	.3	.2
10	1.8	3.2	9.3	15.5	39	15.5	17.5	7.4	1.8	1.9	.3	.2
11	5.0	3.4	8.7	15	33	13.5	20	7.1	1.6	1.6	*.3	.3
12	6.7	8.7	11	13.5	29	18	24	8.0	1.8	1.3	.3	.2
13	2.8	6.7	12.5	18.5	25	16.5	22	11	1.8	*1.1	.3	.3
14	2.0	9.0	13	15.5	22	15.5	22	18.5	1.8	1.0	.3	.6
15	1.4	9.3	18	14.5	19	13.5	20	9.9	1.6	.9	.3	1.2
16	1.3	11	12.5	16.5	17.5	*12	22	8.7	1.6	1.0	.3	2.8
17	1.4	20	11.5	16.5	15.5	11.5	20	7.7	1.6	.9	.2	1.2
18	1.3	31	10.5	13.5	13	11	18	7.1	1.9	.8	.3	.8
19	*4.1	33	10.5	13	12	11	18	6.4	1.6	.7	.2	.6
20	3.2	24	9.9	17	11	10.5	*17.5	6.1	1.3	.6	.3	.5
21	5.5	20	10.5	15	10.5	12.5	16.5	5.5	1.1	.6	.4	.5
22	4.2	17.5	11	17.5	10.5	19.5	24	5.0	2.0	.6	.3	.4
23	3.6	15	12	16	9.3	15	21	4.7	2.5	.6	.3	.4
24	2.9	13.5	19	15.5	13	13.5	18	4.5	1.6	.7	.3	.4
25	2.6	20	15	15.5	9.6	17.5	15.5	4.7	1.4	.7	.4	.6
26	2.3	16	12.5	13.5	8.7	13.5	19	7.4	1.6	2.5	.4	.5
27	2.1	18.5	11.5	13	8.0	13	15.5	5.8	1.8	1.3	.4	2.6
28	2.0	14	14	12.5	15.5	15.5	13.5	4.2	3.6	1.2	.4	2.5
29	2.0	12.5	22	12	-	19	13.5	5.0	2.2	1.3	.3	*1.2
30	1.9	12	38	11.5	------	18	12	7.7	3.7	1.0	.3	.9
31	1.9	-----	36	14.5	-----	16.5	-----	5.2	------	1.0	.4	------
Total	66.4	346.9	425.7	537.5	564.1	406.2	546.0	241.1	72.2	46.0	11.5	20.7
Mean	2.14	11.6	13.7	17.3	20.1	13.1	18.2	7.78	2.41	1.48	0.37	0.69
Cfsm	0.620	3.36	3.97	5.01	5.83	3.80	5.28	2.26	0.699	0.429	0.107	0.200
In.	0.72	3.74	4.59	5.79	6.08	4.38	5.89	2.60	0.78	0.50	0.12	0.22
Ac-ft	132	688	844	1,070	1,120	806	1,080	478	143	91	23	41

Calendar year 1954: Max 55 Min 0.2 Mean 9.01 Cfsm 2.61 In. 35.45 Ac-ft 6,510
Water year 1954-55: Max 70 Min 0.2 Mean 9.00 Cfsm 2.61 In. 35.41 Ac-ft 6,520

Peak discharge (base, 60 cfs).--Feb. 8 (2:30 a.m.) 95 cfs (2.81 ft).
* Discharge measurement 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 3¼ miles upstream from mouth.

Drainage area.--40.0 sq mi.

Records available.--October 1949 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 470 ft (from topographic map).

Average discharge.--6 years, 119 cfs (86,150 acre-ft per year).

Extremes.--Maximum discharge during year, 1,200 cfs Feb. 8 (gage height, 6.61 ft); minimum, 6.0 cfs Sept. 7 (gage height, 2.14 ft).
1949-55: Maximum discharge, 3,510 cfs Dec. 9, 1953 (gage height, 8.58 ft), from rating curve extended above 550 cfs; minimum, 0.6 cfs Aug. 24, 1951 (gage height, 1.63 ft).

Remarks.--Records good except those for periods of shifting control, which are fair. Slight regulation by Long Bell Lumber Co. for millpond.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30					
2.2	13.5	3.3	147	2.1	5.0	3.0	68	5.5	675
2.4	26	3.6	216	2.2	7.5	3.5	135	6.0	875
2.6	43	4.0	320	2.3	11.0	4.0	227	7.0	1,370
2.8	66	4.5	485	2.5	22	4.5	350		
3.0	93	5.0	695	2.7	38	5.0	500		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	35	118	537	156	89	347	156	84	90	32	9.2
2	15	33	106	394	133	86	300	149	79	83	29	8.6
3	17.5	32	103	308	*122	81	258	158	81	70	26	7.8
4	17.5	32	93	258	123	75	227	153	*81	66	24	7.2
5	15.5	44	87	221	135	70	210	154	75	60	22	7.0
6	14.5	74	127	185	175	69	204	151	70	76	21	6.5
7	13.5	52	*139	160	376	73	202	149	66	66	18.5	6.8
8	15.5	46	120	160	*1,030	83	221	146	59	68	18.5	7.8
9	15.5	48	122	156	*683	96	334	158	53	89	19	7.8
10	20	46	104	135	452	140	326	132	50	78	17.5	7.2
11	52	46	92	125	353	168	323	135	47	72	*16	7.5
12	78	75	113	120	284	172	380	138	45	66	16	6.8
13	47	69	143	154	240	158	381	130	44	*59	16.5	9.5
14	38	75	131	149	206	146	342	172	42	55	15	21
15	32	92	204	143	184	134	302	138	42	51	15	25
16	28	122	171	145	165	*126	290	126	40	51	14.5	43
17	28	228	154	154	148	117	272	122	38	45	13.5	27
18	26	357	137	137	132	117	247	117	40	42	13.5	16.5
19	48	398	123	125	122	114	227	120	38	40	12.5	14
20	*48	299	113	125	113	109	212	114	35	37	12.5	13
21	66	233	106	122	106	114	*204	105	32	36	12	12
22	69	194	114	139	103	234	242	98	33	34	11	10.5
23	65	160	111	160	97	204	254	90	57	33	11	9.6
24	58	135	141	171	102	182	238	85	50	32	11	8.9
25	53	169	131	183	94	192	219	83	38	33	11	8.2
26	48	158	118	169	86	182	216	85	36	51	11	8.2
27	45	183	107	154	81	182	190	84	36	42	10.5	31
28	42	160	113	143	89	212	175	73	56	37	10	38
29	40	147	207	131	-	297	172	75	68	37	9.2	21
30	38	133	533	123	------	280	161	102	66	37	8.9	*15.5
31	37	-----	646	147	-----	277	------	100	------	33	10	------
Total	1,147.5	3,875	4,827	5,533	6,090	4,579	7,676	3,778	1,581	1,669	488.1	422.1
Mean	37.0	129	156	178	218	148	256	122	52.7	53.8	15.7	14.1
Cfsm	0.925	3.22	3.90	4.45	5.45	3.70	6.40	3.05	1.32	1.34	0.392	0.352
In.	1.07	3.60	4.49	5.14	5.66	4.26	7.14	3.51	1.47	1.55	0.45	0.39
Ac-ft	2,280	7,690	9,570	10,970	12,080	9,080	15,230	7,490	3,140	3,310	968	837

Calendar year 1954: Max 750 Min 12 Mean 117 Cfsm 2.92 In. 39.64 Ac-ft 84,550
Water year 1954-55: Max 1,030 Min 6.5 Mean 114 Cfsm 2.85 In. 38.73 Ac-ft 82,640

Peak discharge (base, 900 cfs).--Feb. 8 (6 a.m.) 1,200 cfs (6.61 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Feb. 6-19, Apr. 7 to May 6.

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.--1,400 sq mi.

Records available.--August to October 1910, December 1910 to September 1911, October to November 1911 (monthly discharge only in WSP 492), April 1934 to September 1955. 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.--21 years (1934-55), 5,962 cfs (4,316,000 acre-ft per year).

Extremes.--Maximum discharge during year, 28,600 cfs June 11 (gage height, 17.47 ft); minimum, 1,510 cfs Sept. 26 (gage height, 8.63 ft).
1910-11, 1934-55: Maximum discharge, 58,000 cfs Dec. 13, 1946 (gage height, 24.75 ft); minimum, 698 cfs Nov. 30, 1952; minimum gage height, 7.18 ft Nov. 30, Dec. 1, 1936.
Flood in December 1933 is known to have exceeded that of Dec. 13, 1946.

Remarks.--Records excellent except those above 20,000 cfs, which are good. Minor diversions for domestic and farm use above station. No regulation.

Revisions.--WSP 1348: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

8.6	1,470	13.0	11,200
9.0	2,010	14.0	14,400
9.5	2,780	15.0	18,000
10.0	3,670	16.0	22,000
11.0	5,760	17.5	28,700
12.0	8,280		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,830	2,410	5,760	16,000	6,190	3,560	7,400	4,640	10,100	10,600	4,990	2,120
2	1,790	2,340	5,250	12,300	5,670	3,440	7,270	4,660	8,920	9,910	4,990	2,060
3	1,760	2,280	4,860	9,910	5,210	3,300	6,770	4,730	9,010	8,760	4,440	2,060
4	1,740	2,200	4,580	8,340	4,990	3,140	6,140	4,750	*10,400	8,340	4,060	2,060
5	1,700	2,250	4,360	7,320	5,010	3,000	5,720	5,170	13,100	7,900	3,880	2,060
6	1,660	2,680	4,990	6,480	5,400	2,920	5,670	5,930	14,600	7,640	3,860	2,070
7	1,630	2,700	*5,230	5,830	*10,900	2,900	6,140	6,650	16,200	7,560	3,860	2,070
8	1,690	2,520	4,790	5,540	24,600	2,950	7,190	7,790	19,800	7,450	3,840	2,080
9	1,870	2,480	4,560	5,300	20,400	3,050	10,700	8,030	24,300	7,840	3,630	1,980
10	1,870	2,490	4,420	4,880	14,000	3,440	12,900	7,900	27,400	8,560	3,410	1,940
11	2,380	2,510	4,160	4,580	11,000	4,080	11,600	9,150	28,100	8,500	3,300	1,900
12	3,670	2,620	4,140	4,340	9,090	3,900	10,700	9,090	26,800	8,730	*3,230	1,840
13	3,390	2,620	4,770	4,520	7,790	3,800	10,700	11,600	22,800	9,670	3,090	1,860
14	2,880	2,760	4,520	4,520	6,940	3,590	9,400	10,400	18,600	*11,000	2,930	2,140
15	2,600	3,650	5,360	4,260	6,310	3,390	8,280	8,920	15,000	11,800	2,850	2,320
16	2,510	4,680	5,060	4,220	5,810	3,250	7,580	8,080	12,400	11,400	2,780	2,720
17	2,540	7,300	4,640	4,260	5,410	*3,140	7,040	7,740	10,800	10,000	2,720	2,750
18	2,600	13,200	4,420	4,080	5,010	3,100	6,430	8,390	10,300	8,000	2,680	2,310
19	2,720	19,700	4,260	3,840	4,620	3,050	6,000	11,900	10,300	7,090	2,680	2,020
20	3,280	16,700	4,120	3,840	4,400	2,970	5,690	16,600	10,400	6,580	2,650	1,910
21	*4,000	12,000	4,140	3,820	4,220	3,020	*5,470	16,000	12,400	6,310	2,570	1,830
22	5,060	9,180	4,900	3,860	4,100	4,850	5,880	13,400	15,400	6,220	2,480	1,760
23	4,750	7,710	5,470	4,320	3,920	4,730	6,100	11,500	15,900	6,240	2,420	1,680
24	4,120	6,620	6,100	4,920	3,960	4,280	5,900	10,100	13,600	6,310	2,360	1,630
25	3,710	6,670	5,780	5,740	3,860	4,180	5,500	9,460	11,200	5,900	2,310	1,560
26	3,370	7,790	5,300	5,520	3,650	3,980	5,450	9,430	9,880	5,450	2,250	1,540
27	3,120	9,180	4,880	5,190	3,460	3,880	5,170	9,520	9,820	5,470	2,180	1,740
28	2,950	8,560	4,680	5,010	3,540	4,180	4,810	8,780	10,300	5,080	2,130	2,520
29	2,780	7,380	5,360	4,860	-	6,000	4,700	9,120	10,800	4,790	2,120	2,510
30	2,640	6,460	10,300	4,750	------	6,770	4,580	11,800	10,300	5,390	2,100	*2,190
31	2,520	-----	18,000	5,250	-----	6,820	-----	11,900	------	5,120	2,130	------
Total	85,130	181,640	169,160	177,600	199,460	118,660	212,880	283,130	438,930	239,610	94,920	61,230
Mean	2,746	6,055	5,457	5,729	7,124	3,828	7,096	9,133	14,630	7,729	3,062	2,041
Cfsm	1.96	4.32	3.90	4.09	5.09	2.73	5.07	6.52	10.4	5.52	2.19	1.46
In.	2.26	4.83	4.49	4.72	5.30	3.15	5.66	7.52	11.66	6.37	2.52	1.63
Ac-ft	168,900	360,300	335,500	352,300	395,600	235,400	442,200	561,600	870,600	475,300	188,300	121,400

Calendar year 1954: Max 19,700 Min 1,630 Mean 7,013 Cfsm 5.01 In. 68.01 Ac-ft 5,077,000
Water year 1954-55: Max 28,100 Min 1,540 Mean 6,198 Cfsm 4.43 In. 60.11 Ac-ft 4,487,000

Peak discharge (base, 16,000 cfs).--Nov. 19 (1 p.m.) 20,200 cfs (15.56 ft); Dec. 31 (9:30 a.m.) 18,500 cfs (15.12 ft); Feb. 8 (6:30 p.m.) 26,700 cfs (17.06 ft); May 20 (6 p.m.) 17,500 cfs (14.88 ft); June 11 (4 p.m.) 28,600 cfs (17.47 ft); June 22 (7 p.m.) 16,500 cfs (14.60 ft).
* Discharge measurement made on this day.

Mill Creek near Salkum, Wash.

Location.--Lat 46°30'50", long 122°37'20", in SW¼NE¼ sec. 24, T. 12 N., R. 1 E., on right bank, half a mile upstream from mouth and 1¼ miles southeast of Salkum.

Drainage area.--20.9 sq mi.

Records available.--May to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 520 ft (from topographic map).

Extremes.--Maximum discharge during period, 122 cfs May 14 (gage height, 2.68 ft); minimum, 3.2 cfs Sept. 6, 7, 10, 12, 13 (gage height, 1.41 ft).

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

Discharge, in cubic feet per second May to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								a60	31	29	16	4.0
2								a58	30	34	15	3.7
3								a55	35	26	13.5	3.7
4								a52	*37	23	13	3.4
5								a50	33	21	12	3.4
6								a48	30	18.5	11.5	3.4
7								47	27	18	10.5	3.4
8								45	25	17.5	9.8	3.7
9								42	22	23	9.3	3.7
10								42	21	20	9.3	3.4
11								44	19	17.5	8.9	3.4
12								45	18	15.5	8.5	3.4
13								49	17.5	14.5	8.5	4.6
14								98	16.5	13	7.7	7.3
15								68	16	12.5	7.7	7.7
16								55	15	12.5	7.3	23
17								50	14.5	12	6.9	12
18								47	15	10.5	6.9	8.1
19								45	15	9.8	6.5	6.1
20								44	13.5	9.3	6.9	5.4
21								40	12.5	9.3	6.1	5.0
22								35	12.5	9.3	5.7	4.6
23								33	20	8.9	5.7	4.0
24								30	15.5	8.9	5.7	3.7
25								29	a14	8.5	5.7	3.7
26								33	a15	17.5	5.7	4.0
27								35	a20	23	5.0	8.9
28								28	a22	18	5.0	12.5
29								29	a20	16.5	a4.6	8.9
30					------			40	a25	20	*4.3	*6.9
31		-----			-----		-----	39	------	18	4.3	------
Total								1,415	627.5	515.0	253.5	179.0
Mean								45.6	20.9	16.6	8.18	5.97
Cfsm								2.18	1.00	0.794	0.391	0.286
In.								2.52	1.12	0.92	0.45	0.32
Ac-ft								2,810	1,240	1,020	503	355

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft	
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft	

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

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 1955.

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.--16 years, 600 cfs (434,400 acre-ft per year).

Extremes.--Maximum discharge during year, 6,340 cfs Feb. 8 (elevation, 456.90 ft); minimum, 125 cfs Sept. 7, 12, 13; minimum elevation, 452.74 ft Oct. 6, 7.
1939-55: Maximum discharge, 14,300 cfs Dec. 9, 1953 (elevation, 458.91 ft), from rating curve extended above 4,500 cfs; minimum, 62 cfs Nov. 29, 1952; minimum elevation, 451.46 ft Aug. 18, 19, 1940.

Remarks.--Records excellent except those for periods of shifting control, which are good. No regulation or diversion above station.

Revisions (water years).--WSP 1184: 1949.

Rating table, water year 1954-55, except periods of shifting control (elevation, in feet, and discharge, in cubic feet per second)

452.7	122	454.0	900
452.9	179	454.5	1,410
453.1	256	455.0	2,060
453.3	360	456.0	3,910
453.6	561	457.0	6,660

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	133	200	524	2,140	1,000	378	1,310	495	*682	766	243	133
2	130	190	475	1,530	828	354	1,130	468	648	749	231	133
3	141	186	434	1,150	*682	327	927	503	673	624	222	133
4	141	179	421	936	624	310	766	510	758	546	210	130
5	130	207	434	810	561	300	698	561	864	495	204	127
6	127	290	*936	673	662	300	682	593	855	481	196	127
7	133	222	927	593	1,810	305	715	632	963	434	193	125
8	186	210	758	585	4,640	338	810	673	1,310	461	190	130
9	161	248	648	561	2,270	354	1,360	640	1,410	495	182	130
10	164	300	585	503	1,480	481	1,570	640	1,450	461	179	127
11	310	271	503	454	1,100	593	1,330	706	1,340	441	*173	127
12	300	384	577	421	900	640	1,730	793	1,140	448	170	125
13	252	354	810	488	793	546	1,690	758	900	*481	167	155
14	218	561	793	461	706	448	1,310	819	723	495	161	210
15	200	1,080	1,110	448	640	*409	1,060	698	616	468	161	271
16	186	1,390	900	488	585	372	981	648	546	428	161	332
17	207	1,950	740	577	524	344	891	624	510	372	155	243
18	182	3,520	657	532	481	332	775	673	517	338	152	196
19	378	3,010	593	448	448	322	*690	936	510	316	149	176
20	434	1,910	554	415	421	305	648	1,070	546	300	149	167
21	632	1,310	546	384	403	332	624	936	657	285	146	158
22	*616	981	616	495	390	819	665	810	723	276	146	152
23	524	784	715	585	372	624	784	698	749	271	144	149
24	421	648	909	616	415	510	715	640	657	261	144	144
25	354	819	793	749	378	569	561	616	569	252	144	141
26	310	732	648	673	360	554	657	632	546	384	144	141
27	280	819	561	608	349	517	569	632	524	366	141	239
28	252	732	577	585	360	632	517	600	585	310	138	290
29	239	657	855	561	-	1,150	517	657	624	290	138	218
30	222	585	2,060	577	------	1,050	495	740	577	276	136	193
31	207	-----	3,010	766	-----	1,110	-----	740	------	256	133	------
Total	8,170	24,729	24,669	20,812	24,182	15,625	27,177	21,141	23,172	12,826	5,202	5,122
Mean	264	824	796	671	864	504	906	682	772	414	168	171
Cfsm	2.24	6.98	6.75	5.69	7.32	4.27	7.68	5.78	6.54	3.51	1.42	1.45
In.	2.57	7.79	7.77	6.56	7.62	4.92	8.57	6.66	7.30	4.04	1.64	1.61
Ac-ft	16,200	49,050	48,930	41,280	47,960	30,990	53,900	41,930	45,960	25,440	10,320	10,160

Calendar year 1954: Max 4,360 Min 125 Mean 684 Cfsm 5.80 In. 78.64 Ac-ft 495,000
Water year 1954-55: Max 4,640 Min 125 Mean 583 Cfsm 4.94 In. 67.05 Ac-ft 422,100

Peak discharge (base, 4,200 cfs).--Nov. 18 (2 p.m.) 4,360 cfs (456.19 ft); Feb. 8 (4 a.m.) 6,340 cfs (456.90 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 1-10, July 15 to Sept. 30.

Silver Lake at Silver Lake, Wash.

Location.--Lat 46°17'15", long 122°48'30", in NE¼ sec. 4, T. 9 N., R. 1 W., on left shore at Silver Lake, 5 miles east of Castle Rock.

Drainage area.--41.5 sq mi.

Records available.--July 1949 to September 1950 (fragmentary), August 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 480 ft (from topographic map). Prior to Sept. 30, 1950, staff gage at same site and datum.

Extremes.--Maximum gage height during year, 4.26 ft Jan. 2-3; minimum, 1.02 ft Sept. 12. 1949-50, 1953-55: Maximum gage height observed, 5.80 ft Jan. 31, 1950; minimum observed, 0.18 ft Sept. 22, 1950.

Remarks.--No regulation or diversion above station.

Gage height, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.43	1.82	-	4.23	-	3.20	3.95	3.45	2.15	1.66	1.49	1.14
2	1.45	1.83	-	4.26	3.16	3.26	3.99	3.38	2.12	1.64	1.48	1.12
3	1.45	1.82	-	4.24	3.13	3.27	3.98	3.33	2.12	1.62	1.46	1.10
4	1.45	1.82	-	4.20	3.12	3.23	3.93	3.27	2.10	1.62	1.45	1.10
5	1.45	1.89	-	4.13	3.10	3.19	3.87	3.19	2.08	1.60	1.45	1.10
6	1.45	1.91	3.10	4.05	3.15	3.15	3.80	3.13	2.06	1.59	1.43	1.08
7	1.46	1.93	3.13	3.97	3.40	3.10	3.72	3.06	2.04	1.58	1.42	1.07
8	1.46	1.96	3.15	3.94	3.85	3.07	3.67	2.99	2.02	1.59	1.41	1.06
9	1.48	2.00	3.16	3.88	3.98	3.02	3.65	2.92	1.98	1.58	1.40	1.06
10	1.53	2.01	3.14	3.81	4.00	3.13	3.65	2.87	1.96	1.58	1.38	1.05
11	1.55	2.04	3.11	3.74	3.98	3.26	3.66	2.82	1.93	1.57	1.37	1.05
12	1.57	2.07	3.16	3.68	3.92	3.40	3.86	2.76	1.90	1.57	1.36	1.04
13	1.57	2.14	3.24	3.65	3.85	3.48	3.97	2.75	1.88	1.55	1.35	1.11
14	1.57	2.22	3.31	3.61	3.78	3.50	4.02	2.77	1.86	1.54	1.33	1.12
15	1.57	2.29	3.37	3.60	3.70	3.50	4.02	2.73	1.84	1.54	1.32	1.15
16	1.57	2.42	3.38	-	3.62	3.46	4.04	2.69	1.83	1.54	1.31	1.16
17	1.58	2.66	3.37	-	3.54	3.42	4.03	2.65	1.81	1.52	1.30	1.16
18	1.58	3.05	3.35	-	3.45	3.35	3.99	2.62	1.79	1.51	1.29	1.16
19	-	3.38	3.31	-	3.38	3.31	3.94	2.57	1.78	1.50	1.28	1.15
20	-	3.49	3.26	-	3.30	3.24	3.89	2.53	1.76	1.49	1.26	1.15
21	-	3.52	3.22	-	3.23	3.27	3.82	2.48	1.75	1.48	1.25	1.15
22	1.80	3.51	3.18	-	3.17	3.42	3.78	2.44	1.73	1.47	1.24	1.14
23	1.81	3.48	3.18	-	3.12	3.50	3.78	2.40	1.72	1.46	1.23	1.13
24	1.81	3.42	3.24	-	3.11	3.52	3.75	2.36	1.69	1.45	1.22	1.13
25	1.82	3.44	3.30	-	3.08	3.58	3.73	2.32	1.68	1.48	1.20	1.12
26	1.81	3.42	3.30	-	3.05	3.58	3.73	2.30	1.67	1.50	1.18	1.14
27	1.81	3.40	3.31	-	3.03	3.57	3.72	2.26	1.68	1.50	1.17	1.20
28	1.81	3.37	3.35	-	3.09	3.60	3.63	2.23	1.67	1.50	1.17	1.20
29	1.82	3.33	3.45	-	-	3.67	3.58	2.20	1.66	1.50	1.16	1.20
30	1.82	3.29	3.76	-	-------	3.75	3.52	2.19	1.65	1.50	1.15	1.19
31	1.82	-------	4.08	-	-------	3.83	-------	2.17	-------	1.49	1.14	-------

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.

Drainage area.--474 sq mi.

Records available.--September 1909 to August 1912, October 1919 to October 1921, May to November 1922, December 1922 (monthly discharge only), January to December 1923, September 1929 to September 1955. 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 at datum 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. 5, 1938, Oct. 4, 1950, to Apr. 16, 1952, water-stage recorder, 50 ft upstream at present datum. Oct. 6, 1938, to Oct. 3, 1950, and since Apr. 17, 1952, water-stage recorder at present site and datum.

Average discharge.--31 years (1909-11, 1919-21, 1922-23, 1929-55), 2,002 cfs (1,449,000 acre-ft per year).

Extremes.--Maximum discharge during year, 16,200 cfs Feb. 8 (gage height, 12.24 ft); minimum, 414 cfs Sept. 13 (gage height, 1.89 ft).
1909-12, 1919-23, 1929-55: Maximum discharge observed, 37,600 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 regulation or diversion above station.

Revisions (water years).--WSP 292: 1909, calendar year. WSP 754: 1930-32. WSP 1348: 1910(M), 1930-32(M), 1945.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.9	420	4.0	2,700
2.2	615	5.0	4,440
2.6	940	6.0	6,200
3.0	1,350	8.0	9,400
3.5	1,960	10.5	13,400

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	506	746	1,870	6,500	2,730	1,520	3,940	1,800	2,460	2,700	1,100	474
2	493	714	1,730	4,690	2,380	1,500	3,560	1,740	*2,300	2,730	1,050	468
3	526	690	1,620	3,720	*2,160	1,400	3,040	1,790	2,360	2,320	980	462
4	519	668	1,560	3,120	2,040	1,280	2,620	1,820	2,840	2,100	922	456
5	493	738	1,530	2,730	1,990	1,210	2,360	1,880	2,990	1,930	886	450
6	480	1,120	*2,440	2,390	2,150	1,200	2,260	1,990	3,050	1,870	877	450
7	486	877	2,590	2,170	5,830	1,210	2,340	2,070	3,340	1,790	877	456
8	630	802	2,200	2,210	13,400	1,310	2,570	2,260	4,120	1,800	842	456
9	587	877	1,990	2,100	8,240	1,330	3,890	2,180	4,890	2,140	802	450
10	587	1,000	1,860	1,930	5,090	1,660	4,670	2,140	5,210	2,020	762	444
11	1,020	970	1,680	1,830	3,940	2,090	4,330	2,330	5,020	1,920	*746	438
12	1,150	1,280	1,820	1,750	3,240	2,130	5,250	2,620	4,510	1,910	722	420
13	913	1,250	2,360	1,970	2,830	1,920	5,390	2,590	3,770	*2,040	698	503
14	794	1,510	2,210	1,870	2,510	1,730	4,330	2,910	3,120	2,210	675	730
15	730	2,340	3,000	1,840	2,320	*1,570	3,650	2,570	2,640	2,210	645	826
16	682	3,050	2,500	1,910	2,100	1,480	3,380	2,320	2,300	2,090	630	960
17	730	4,640	2,210	2,030	1,930	1,390	3,160	2,230	2,100	1,790	615	754
18	675	7,930	2,030	1,860	1,780	1,370	2,780	2,360	2,060	1,580	608	622
19	1,180	8,120	1,870	1,690	1,680	1,340	*2,480	3,120	2,030	1,460	601	559
20	1,370	5,570	1,780	1,630	1,590	1,270	2,330	3,650	2,060	1,390	594	538
21	1,590	3,990	1,760	1,540	1,510	1,300	2,230	3,210	2,440	1,340	573	519
22	*1,650	3,120	1,910	1,820	1,500	2,540	2,400	2,830	2,810	1,330	559	493
23	1,560	2,600	2,130	2,030	1,430	2,230	2,760	2,500	3,020	1,310	545	474
24	1,340	2,230	2,570	2,100	1,500	1,910	2,480	2,620	2,640	1,280	538	462
25	1,210	2,660	2,340	2,270	1,450	2,000	2,340	2,170	2,270	1,210	532	450
26	1,090	2,480	2,060	2,130	1,380	2,000	2,360	2,140	2,160	1,380	519	450
27	990	2,680	1,870	2,000	1,330	1,910	2,140	2,180	2,130	1,390	506	754
28	913	2,460	1,920	1,930	1,400	2,110	1,960	2,060	2,260	1,230	500	1,000
29	850	2,240	2,800	1,870	-	3,360	1,930	2,160	2,400	1,170	486	746
30	810	2,060	6,290	1,870	------	3,240	1,840	2,590	2,270	1,180	480	652
31	778	-----	8,900	2,280	-----	3,280	-----	2,680	------	1,130	486	------
Total	27,332	71,412	75,400	71,780	81,410	55,790	90,770	73,150	87,370	53,950	21,356	16,916
Mean	882	2,380	2,432	2,315	2,908	1,800	3,026	2,360	2,912	1,740	689	564
Cfsm	1.86	5.02	5.13	4.88	6.14	3.80	6.38	4.98	6.14	3.67	1.45	1.19
In.	2.14	5.60	5.92	5.63	6.39	4.38	7.12	5.74	6.86	4.23	1.68	1.33
Ac-ft	54,210	141,600	149,600	142,400	161,500	110,700	180,000	145,100	173,300	107,000	42,360	33,550

Calendar year 1954: Max 11,500 Min 480 Mean 2,212 Cfsm 4.67 In. 63.35 Ac-ft 1,602,000
Water year 1954-55: Max 13,400 Min 420 Mean 1,991 Cfsm 4.20 In. 57.02 Ac-ft 1,441,000

Peak discharge (base, 9,000 cfs).--Nov. 18 (6 p.m.) 9,860 cfs (8.29 ft); Dec. 31 (5 a.m.) 9,780 cfs (8.24 ft); Feb. 8 (7:30 a.m.) 16,200 cfs (12.24 ft).
* Discharge measurement made on this day.

Cowlitz River at Castle Rock, Wash.

Location.--Lat 46°16'30", long 122°54'50", 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 1955.

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 datum 14.93 ft higher. Dec. 18, 1933, to June 13, 1934, staff or wire-weight gages and June 14 to Sept. 30, 1934, water-stage recorder, at present site at datum 5 ft higher.

Average discharge.--28 years (1927-55), 8,875 cfs (6,425,000 acre-ft per year).

Extremes.--Maximum discharge during year, 50,100 cfs Feb. 8 (gage height, 19.24 ft); minimum, 2,120 cfs Sept. 26 (gage height, 7.42 ft).
1926-55: 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. Minor diversions for domestic and farm use above station. No regulation.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge in cubic feet per second)

7.4	2,090	12.5	16,900
8.0	3,200	14.0	23,000
9.0	5,450	16.0	32,200
10.0	8,200	18.5	45,700
11.0	11,300		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,580	3,400	8,860	28,500	10,200	7,440	13,400	7,070	13,400	13,300	6,190	2,750
2	2,530	3,280	7,960	21,700	*9,490	7,320	13,200	6,980	*11,800	13,300	6,170	2,680
3	2,530	3,180	7,320	17,000	8,530	6,570	11,800	7,070	11,500	11,700	5,750	2,660
4	2,510	3,040	6,960	14,100	7,990	5,860	10,300	7,120	12,700	10,800	5,150	2,640
5	2,480	3,100	*6,600	12,500	8,110	5,300	9,340	7,320	15,300	10,300	4,890	2,660
6	2,390	3,910	7,900	10,800	8,200	5,080	8,860	8,050	17,500	9,790	4,770	2,660
7	2,330	3,970	9,310	9,640	18,800	4,980	9,070	8,890	18,600	9,610	4,770	2,640
8	2,490	3,670	8,440	9,190	43,300	5,130	10,100	9,970	22,200	9,430	4,720	2,680
9	2,640	3,740	7,810	9,580	35,000	5,250	13,700	10,600	27,000	10,100	4,630	2,620
10	2,720	3,780	7,640	8,530	23,100	6,090	18,900	10,300	30,100	10,600	*4,330	2,530
11	3,140	3,820	6,980	7,810	17,900	8,170	18,800	10,900	31,000	10,700	4,110	2,480
12	4,630	4,440	6,760	7,290	14,700	8,830	19,500	14,000	30,000	*10,500	4,040	2,420
13	4,650	4,510	8,920	7,610	12,500	8,950	20,600	14,900	27,000	11,600	3,930	2,460
14	4,000	4,960	8,590	8,050	11,000	*7,990	17,000	14,400	22,100	12,900	3,720	2,850
15	3,590	6,620	10,400	7,670	10,000	6,960	14,800	12,800	18,300	14,200	3,590	3,200
16	3,400	8,740	9,700	8,020	9,100	6,220	13,300	11,200	15,300	13,900	3,500	3,690
17	3,400	13,900	8,530	8,830	8,410	5,730	12,500	10,500	13,200	12,800	3,420	3,670
18	3,440	23,900	7,730	8,140	7,700	5,420	11,100	10,700	12,500	10,300	3,360	3,200
19	3,820	32,500	7,210	7,240	7,070	5,220	*10,100	13,600	12,400	9,070	3,360	2,810
20	4,770	26,600	6,760	6,730	6,680	5,010	9,490	19,100	12,300	8,320	3,340	2,620
21	5,420	19,200	6,520	6,650	6,380	4,910	8,980	19,900	13,900	7,960	3,260	2,490
22	6,570	14,700	7,240	6,570	6,220	7,700	9,220	17,300	17,100	7,700	3,160	2,400
23	6,710	12,200	8,200	7,240	5,960	8,560	10,100	14,800	18,900	7,730	3,100	*2,310
24	5,800	10,400	10,500	7,870	6,140	7,490	9,880	13,000	17,400	7,810	3,020	2,230
25	5,180	10,500	11,300	9,160	6,140	7,440	9,070	12,100	14,200	7,550	2,980	2,160
26	4,740	11,400	9,820	9,010	5,800	7,550	9,100	11,900	12,500	7,150	2,920	2,140
27	4,380	13,000	8,590	8,380	5,600	6,930	8,590	12,200	12,100	7,120	2,850	2,330
28	4,040	12,700	8,380	7,990	6,090	7,210	7,810	11,400	12,500	6,710	2,770	3,260
29	*3,840	11,200	9,460	7,700	-	10,300	7,520	11,200	13,400	6,120	2,750	3,460
30	3,670	9,850	16,200	7,440	------	12,300	7,240	13,800	13,000	6,480	2,750	3,040
31	3,550	------	30,700	7,930	------	12,400	------	15,300	------	6,520	2,750	------
Total	117,940	290,210	287,290	304,870	326,110	220,310	353,370	368,370	519,200	302,080	120,050	81,740
Mean	3,805	9,674	9,267	9,835	11,650	7,107	11,780	11,880	17,310	9,745	3,873	2,725
Cfsm	1.70	4.32	4.14	4.39	5.21	3.18	5.26	5.31	7.73	4.35	1.73	1.22
In.	1.96	4.82	4.77	5.07	5.42	3.66	5.87	6.12	8.63	5.02	1.99	1.36
Ac-ft	233,900	575,600	569,800	604,700	646,800	437,000	700,900	730,700	1,030,000	599,200	238,100	162,100

Calendar year 1954: Max 36,800 Min 2,330 Mean 10,260 Cfsm 4.58 In. 62.20 Ac-ft 7,425,000
Water year 1954-55: Max 43,300 Min 2,140 Mean 9,018 Cfsm 4.03 In. 54.69 Ac-ft 6,529,000

Peak discharge (base, 32,000 cfs).--Nov. 19 (1 p.m.) 33,800 cfs (16.33 ft); Dec. 31 (12 m.) 32,500 cfs (16.06 ft); Feb. 8 (1:30 p.m.) 50,100 cfs (19.24 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 1955.

Gage.--Water-stage recorder. Altitude of gage is 75 ft (from topographic map).

Average discharge.--6 years, 93.5 cfs (67,690 acre-ft per year).

Extremes.--Maximum discharge during year, 1,070 cfs Feb. 8 (gage height, 4.36 ft); minimum daily, 5.6 cfs Sept. 24.
1949-55: Maximum discharge, 3,020 cfs Dec. 9, 1953 (gage height, 6.26 ft); minimum, 1.3 cfs Aug. 22, 1951 (gage height, 0.63 ft).

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Some diversion for domestic use. No regulation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	5.0	2.0	72
1.0	9.1	2.2	100
1.2	15	2.6	181
1.4	24	3.0	303
1.6	35	3.5	530
1.8	51	4.0	820

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.4	18	80	580	*126	110	310	84	*25	21	12.5	6.8
2	6.8	17	73	372	*110	110	258	80	24	17	11	6.6
3	10	17	69	268	103	94	216	76	25	14.5	10	6.4
4	8.6	16	64	216	105	81	184	73	24	14	9.4	6.3
5	8.0	28	*63	174	110	72	162	70	22	13	8.2	5.9
6	7.7	30	84	142	206	68	153	66	21	13	7.3	5.9
7	7.3	25	103	125	640	65	151	63	19.5	12	7.3	6.4
8	10.5	26	92	121	*778	65	149	59	18	13.5	7.0	7.3
9	9.6	31	114	103	435	69	194	56	17	15.5	7.0	7.0
10	21	29	110	94	307	158	186	53	16	17.5	*7.0	7.0
11	46	30	103	86	230	*176	186	54	15.5	14.5	7.0	7.0
12	32	37	117	81	181	186	308	49	15.5	*12.5	7.0	6.8
13	25	40	149	103	151	186	303	46	15.5	10.5	7.3	9.5
14	21	65	176	97	132	157	236	48	16	9.6	7.0	15
15	18	81	202	103	114	258	189	42	16	10.5	7.0	25
16	16	120	171	132	100	227	174	41	15.5	18.5	7.0	35
17	16	247	142	181	90	202	149	38	15	13	7.0	15
18	14.5	683	123	157	81	189	*128	37	15	10.5	6.8	10
19	34	574	107	128	75	176	123	35	14	10	6.8	8.0
20	36	358	94	114	70	169	114	34	13.5	9.4	6.8	7.0
21	*46	239	86	100	65	133	103	32	13	8.6	6.8	6.4
22	40	176	81	97	62	348	102	31	13	8.4	6.8	6.0
23	34	140	82	98	59	282	126	30	13	8.0	6.8	*5.7
24	30	115	117	121	75	204	114	28	12.5	8.0	6.8	5.6
25	28	144	123	157	66	197	110	28	13.5	9.1	7.3	5.7
26	25	128	107	140	63	169	115	29	13	18	7.0	6.2
27	24	117	97	126	62	155	103	27	13.5	16	6.8	11.5
28	22	107	105	114	93	184	97	25	19	12.5	6.8	11.5
29	21	97	181	103	-	252	92	27	16	16	6.6	8.9
30	20	88	671	96	------	289	88	33	14.5	16	6.8	8.0
31	18.5	-----	760	107	-----	296	-----	28	------	14	7.3	------
Total	662.9	3,823	4,646	4,636	4,689	5,307	4,923	1,422	504.0	404.6	232.2	279.4
Mean	21.4	127	150	150	167	171	164	45.9	16.8	13.1	7.49	9.31
Cfsm	1.10	6.55	7.73	7.73	8.61	8.81	8.45	2.37	0.866	0.675	0.386	0.480
In.	1.27	7.33	8.91	8.89	8.99	10.17	9.44	2.73	0.97	0.78	0.45	0.54
Ac-ft	1,310	7,580	9,220	9,200	9,300	10,530	9,760	2,820	1,000	803	461	554

Calendar year 1954: Max 760 Min 6.3 Mean 90.0 Cfsm 4.64 In. 62.97 Ac-ft 65,140
Water year 1954-55: Max 778 Min 5.6 Mean 86.4 Cfsm 4.45 In. 60.47 Ac-ft 62,540

Peak discharge (base, 1,000 cfs).--Dec. 30 (7 p.m.) 1,020 cfs (4.30 ft); Feb. 8 (2:30 a.m.) 1,070 cfs (4.36 ft).

* Discharge measurement made on this day.

Note.--Doubtful or no gage-height record Sept. 13-25; discharge estimated on basis of recorded range in stage, records for stations on nearby streams, and weather records.

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 7 miles upstream from mouth.

Drainage area.--119 sq mi.

Records available.--July 1950 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Average discharge.--5 years, 424 cfs (307,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,680 cfs Dec. 30 (gage height, 10.76 ft), from rating curve extended as explained below; minimum, 33 cfs Sept. 5-7 (gage height, 3.81 ft).

1950-55: Maximum discharge, 7,490 cfs Dec. 9, 1953 (gage height, 12.75 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination at gage height, 12.8 ft; minimum, 22 cfs Sept. 22, 1951; minimum gage height, 3.75 ft Sept. 22, 1951, Oct. 7, 1952.

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. No regulation or diversion above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
3.9	38	6.0	606	3.8	32	6.0	630
4.1	61	7.0	1,130	4.0	53	7.0	1,160
4.3	91	8.0	1,830	4.3	97	8.0	1,830
4.6	149	9.0	2,670	4.6	157	9.0	2,670
5.0	248	10.0	3,740	5.0	260	10.0	3,740
5.5	409			5.5	425		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	85	314	2,190	749	515	1,520	455	232	278	89	42
2	46	80	283	1,450	653	519	1,290	429	219	246	83	39
3	51	78	265	1,040	565	429	1,030	440	249	201	78	37
4	55	77	254	831	540	352	831	421	260	176	72	35
5	50	98	248	690	578	303	719	425	257	157	69	35
6	49	167	570	569	826	287	671	425	243	162	65	35
7	47	164	770	507	2,160	293	667	425	240	139	61	35
8	60	111	615	511	3,390	348	681	421	260	146	62	41
9	62	136	534	483	1,970	375	989	389	266	157	61	41
10	75	141	453	440	1,290	742	1,070	372	254	162	58	39
11	147	134	392	400	968	957	1,070	*386	238	144	56	40
12	130	243	454	375	759	1,010	1,960	382	211	127	56	37
13	104	240	705	495	635	826	1,870	362	181	*115	56	67
14	*88	373	681	524	548	667	1,340	491	159	106	53	132
15	77	580	855	532	491	544	1,060	393	*148	101	*53	162
16	69	686	710	674	444	479	968	348	135	108	51	184
17	75	1,180	580	1,180	403	418	853	332	129	95	50	117
18	69	2,020	487	930	358	396	744	329	135	86	49	86
19	188	1,750	423	667	332	386	667	379	133	86	46	70
20	208	1,080	378	565	316	362	626	382	125	78	46	69
21	286	715	354	503	300	*412	582	335	131	76	44	61
22	277	530	360	511	303	1,580	617	296	137	74	44	56
23	237	420	374	548	284	1,110	734	266	171	74	43	52
24	188	*354	550	578	348	805	710	243	159	74	44	48
25	160	484	480	676	335	779	639	238	135	76	45	46
26	136	472	450	626	325	734	690	240	129	157	46	*46
27	120	502	*434	565	309	676	608	232	127	159	43	156
28	109	453	530	519	386	760	561	216	198	123	42	181
29	102	406	970	479	-	1,270	532	222	224	111	40	115
30	95	360	3,100	463	------	1,290	479	266	196	111	40	94
31	88	-----	3,290	*569	-----	1,330	------	254	------	99	44	------
Total	3,496	14,119	20,863	21,090	20,565	20,954	26,778	10,794	5,681	4,004	1,689	2,198
Mean	113	471	673	680	734	676	893	348	189	129	54.5	73.3
Cfsm	0.950	3.96	5.66	5.71	6.17	5.68	7.50	2.92	1.59	1.08	0.458	0.616
In.	1.09	4.41	6.52	6.59	6.43	6.55	8.37	3.37	1.78	1.25	0.53	0.69
Ac-ft	6,930	28,000	41,380	41,830	40,790	41,560	53,110	21,410	11,270	7,940	3,350	4,360

Calendar year 1954: Max 3,290 Min 46 Mean 402 Cfsm 3.38 In. 45.83 Ac-ft 290,900
Water year 1954-55: Max 3,390 Min 35 Mean 417 Cfsm 3.50 In. 47.58 Ac-ft 301,900

Peak discharge (base, 2,600 cfs).--Nov. 18 (2 p.m.) 2,640 cfs (8.97 ft); Dec. 30 (9 p.m.) 4,680 cfs (10.76 ft); Feb. 8 (6:30 a.m.) 4,050 cfs (10.26 ft).

* Discharge measurement made on this day.

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 1955.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map).

Average discharge.--6 years, 107 cfs (77,460 acre-ft per year).

Extremes.--Maximum discharge during year, 1,420 cfs Dec. 30 (gage height, 5.15 ft), from rating curve extended above 650 cfs; minimum, 8.2 cfs Sept. 4, 5, 6 (gage height, 1.13 ft).

1949-55: Maximum discharge, 2,700 cfs Feb. 24, 1950 (gage height, 6.66 ft), from rating curve extended above 650 cfs; minimum, 3.6 cfs Oct. 5, 1952; minimum gage height, 0.94 ft Sept. 4, 14, 1949, Oct. 5, 1952.

Remarks.--Records good. Some diversion for domestic use. Possibly slight regulation.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 29				Dec. 30 to Sept. 30			
1.2	10.5	2.6	161	1.1	7.4	2.3	117
1.4	18.5	3.0	260	1.3	14.5	2.6	174
1.6	29	3.5	419	1.5	24	3.0	280
1.8	44	4.0	628	1.7	39	3.5	450
2.0	65	4.5	890	1.9	60	4.0	680
2.3	107			2.1	86	4.5	960

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	22	89	541	*145	112	301	96	39	50	24	11
2	14.5	22	81	375	126	109	262	92	37	38	21	10
3	17.5	22	75	298	117	101	228	92	41	30	20	9.8
4	16.5	22	*70	239	120	92	197	86	37	27	18.5	8.8
5	15	36	72	195	122	85	179	82	35	25	17	8.6
6	14.5	41	88	166	207	80	166	78	34	23	16	8.6
7	15	32	107	144	380	80	155	73	32	22	15.5	9.2
8	20	32	92	138	556	83	145	70	30	25	15.5	10
9	18.5	38	104	122	354	86	181	66	28	25	15	10
10	33	38	101	111	286	*170	174	65	27	24	*14.5	9.8
11	103	38	94	103	225	*195	179	67	27	24	14.5	9.8
12	55	48	112	100	188	220	304	62	26	*20	14.5	9.5
13	40	47	145	136	161	202	304	61	25	20	14	15
14	34	66	171	126	140	179	250	59	25	18.5	14	19
15	30	82	207	136	124	157	*214	56	25	18.5	13.5	32
16	26	131	176	174	112	140	202	52	24	21	13.5	46
17	26	269	151	214	103	127	181	53	24	20	12.5	23
18	25	819	128	195	94	120	159	48	24	18	12.5	17
19	33	530	113	166	86	114	149	46	23	17.5	12	14.5
20	38	318	101	151	80	104	140	45	21	17	12	14
21	52	233	92	136	76	154	127	42	21	16.5	12	12
22	41	174	85	138	73	325	126	41	21	15.5	11	*11
23	36	136	92	151	70	256	149	40	22	15.5	11.5	10
24	32	112	117	203	89	214	131	38	21	16	11.5	9.8
25	30	149	117	233	80	217	124	38	22	16.5	12	9.2
26	28	125	104	180	78	197	134	41	21	28	12	10
27	26	128	96	160	75	183	120	*39	21	24	12	15.5
28	*25	117	102	150	103	200	114	35	33	21	12	15
29	24	107	207	134	-	253	109	37	27	26	11	12.5
30	24	100	958	126	------	286	101	52	28	28	11	11.5
31	23	-----	848	132	-----	307	-----	46	------	26	11.5	------
Total	929.5	4,034	5,095	5,573	4,370	5,148	5,305	1,798	821	716.5	437.5	412.1
Mean	30.0	134	164	180	156	166	177	58.0	27.4	23.1	14.1	13.7
Cfsm	1.48	6†60	8.08	8.87	7.68	8.18	8.72	2.86	1.35	1.14	0.695	0.675
In.	1.70	7.39	9.33	10.21	8.01	9.43	9.72	3.29	1.50	1.31	0.80	0.75
Ac-ft	1,840	8,000	10,110	11,050	8,670	10,210	10,520	3,570	1,630	1,420	868	817

Calendar year 1954: Max 958 Min 12.5 Mean 100 Cfsm 4.93 In. 67.06 Ac-ft 72,620
Water year 1954-55: Max 958 Min 8.6 Mean 94.9 Cfsm 4.67 In. 63.44 Ac-ft 68,700

Peak discharge (base, 1,100 cfs).--Dec. 30 (4 p.m.) 1,420 cfs (5.15 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 40 ft downstream from small tributary, 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 1955.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (by barometer).

Average discharge.--6 years, 115 cfs (83,260 acre-ft per year).

Extremes.--Maximum discharge during year, 1,240 cfs probably Dec. 30 (gage height, 4.35 ft, from recorded range in stage), from rating curve extended above 590 cfs by logarithmic plotting; minimum, 7.3 cfs Sept. 5 (gage height, 1.36 ft).
1949-55: Maximum discharge, 4,460 cfs Feb. 24, 1950 (gage height, 6.23 ft), from rating curve extended above 590 cfs by logarithmic plotting; minimum, 4.6 cfs Aug. 21, 22, 1951 (gage height, 1.19 ft).

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

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7 to Nov. 4)

1.3	5.5	2.4	108
1.4	8.5	2.7	180
1.5	12	3.0	280
1.7	22	3.5	525
1.9	36	4.2	1,080
2.1	58		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12.5	21	98	650	156	166	280	86	40	67	19	9.2
2	12	20	89	500	136	153	250	82	37	45	17	8.8
3	15	20	84	350	125	139	230	82	39	34	15	8.2
4	15	20	*79	280	141	121	201	75	39	31	15	7.9
5	13.5	30	80	225	148	110	177	69	35	29	13.5	7.6
6	13	41	98	190	250	102	158	65	34	27	13	7.6
7	13.5	31	121	170	447	100	143	62	31	25	13	8.2
8	17	32	104	150	591	98	129	59	30	28	13	8.5
9	16.5	38	114	140	405	102	146	57	28	27	12.5	8.8
10	30	40	108	130	317	*215	143	56	27	25	*12	8.5
11	52	39	98	120	262	262	161	56	27	*24	12	8.2
12	41	51	114	110	223	309	296	56	27	23	11.5	7.9
13	32	50	153	160	192	273	292	52	25	20	11.5	11.5
14	27	65	169	150	166	236	247	53	25	20	11.5	17
15	25	75	213	160	148	207	*217	48	25	19	11	32
16	23	114	192	200	129	186	210	46	24	23	11	39
17	22	245	170	230	116	166	180	46	24	22	10.5	20
18	21	620	140	210	104	156	161	44	24	20	10.5	15
19	29	488	125	180	95	146	151	42	23	18	10	13
20	35	320	110	160	87	134	143	40	22	17	10	12.5
21	42	233	100	150	82	164	125	38	21	16.5	9.9	11.5
22	34	180	95	160	80	334	125	*37	21	16	9.6	*10.5
23	31	148	100	170	74	284	143	36	22	15	9.6	10.5
24	29	125	140	220	106	240	123	34	21	15	9.6	9.9
25	27	155	140	260	98	262	114	34	24	16	9.6	9.2
26	26	136	120	210	93	233	121	38	23	24	9.6	10.5
27	25	134	110	180	91	213	110	37	23	23	9.2	17.5
28	*24	121	120	*156	145	213	104	34	34	20	9.2	22
29	23	114	200	146	-	236	102	36	32	23	8.8	16
30	23	106	1,000	134	------	276	95	53	29	23	9.2	13
31	22	-----	900	141	-----	269	-----	48	------	20	9.6	------
Total	771.0	3,812	5,484	6,392	5,007	6,105	5,077	1,601	836	755.5	356.4	390.0
Mean	24.9	127	177	206	179	197	169	51.6	27.9	24.4	11.5	13.0
Cfsm	0.902	4.60	6.41	7.46	6.49	7.14	6.12	1.87	1.01	0.884	0.417	0.471
In.	1.04	5.14	7.39	8.61	6.75	8.23	6.84	2.16	1.13	1.02	0.48	0.53
Ac-ft	1,530	7,560	10,880	12,680	9,930	12,110	10,070	3,180	1,660	1,500	707	774

Calendar year 1954: Max 1,000 Min 11.5 Mean 110 Cfsm 3.99 In. 54.11 Ac-ft 79,660
Water year 1954-55: Max 1,000 Min 7.6 Mean 100 Cfsm 3.62 In. 49.32 Ac-ft 72,580

Peak discharge (base, 1,000 cfs).--Probably Dec. 30 (time unknown) 1,240 cfs (4.35 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 17 to Jan. 27; discharge estimated on basis of recorded range in stage and records for Abernathy Creek near Longview.

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, 2½ miles northeast of Cathlamet, and 4½ miles upstream from mouth.

Drainage area.--65.8 sq mi.

Records available.--October 1940 to September 1955.

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.--15 years, 363 cfs (262,800 acre-ft per year).

Extremes.--Maximum discharge during year, 3,830 cfs Dec. 30 (gage height, 8.69 ft); minimum, 30 cfs Sept. 4, 5, 6 (gage height, 1.88 ft).
1940-55: Maximum discharge, 7,300 cfs Feb. 17, 1949 (gage height, 12.66 ft), from rating curve extended above 2,100 cfs on basis of slope-area determination of peak flow; minimum, 18 cfs Oct. 6, 7, 15, 16, 1952 (gage height, 1.80 ft).
Maximum stage known, 17.2 ft in December 1933, from information by local residents.

Remarks.--Records excellent. Some diversions for irrigation. No regulation.

Revisions (water years).--WSP 1154: 1948. WSP 1218: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 29				Dec. 30 to Sept. 30	
2.0	40	4.0	630	1.8	21
2.2	70	4.5	865	2.0	44
2.5	130	5.0	1,150	2.2	74
2.8	200	5.5	1,470	2.5	130
3.1	285	6.0	1,820		
3.4	390	7.0	2,520	Note.--Same as preceding table above 2.5 ft.	
3.7	505	8.0	3,280		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	106	372	2,050	505	390	1,170	316	146	208	106	37
2	55	104	338	1,350	433	366	964	302	138	144	91	34
3	66	102	306	988	390	327	810	299	144	116	82	34
4	61	96	*282	805	397	292	639	285	136	106	76	31
5	56	151	292	670	390	261	594	273	126	99	69	30
6	54	182	352	561	693	249	537	261	120	95	64	30
7	54	146	429	493	1,560	246	505	249	112	88	63	32
8	104	146	362	469	2,650	261	473	234	104	97	61	34
9	92	175	397	418	1,380	273	634	220	100	95	58	34
10	154	180	380	376	959	*657	662	212	97	88	*55	33
11	429	172	341	344	752	765	702	246	95	82	52	33
12	302	210	418	324	621	835	1,110	243	91	*76	50	33
13	222	220	612	461	537	724	1,080	218	88	69	48	51
14	178	302	648	422	465	616	865	205	88	68	48	76
15	152	362	795	453	411	529	*734	188	88	64	47	126
16	136	621	662	612	372	473	724	180	86	74	45	234
17	140	1,120	553	734	338	418	648	178	84	71	44	104
18	124	3,040	477	634	302	394	577	165	88	66	44	76
19	160	2,160	411	541	279	372	537	158	81	63	42	63
20	194	1,240	366	505	261	344	501	152	77	60	42	57
21	270	855	330	457	246	502	453	144	74	58	40	52
22	218	657	310	457	237	1,410	457	138	72	55	39	*50
23	192	529	313	493	225	942	573	132	79	54	39	47
24	172	441	441	603	338	734	505	128	74	54	39	44
25	158	577	437	805	288	720	465	124	82	55	40	43
26	144	569	376	662	270	639	453	*146	77	101	40	44
27	138	621	344	*561	261	577	408	144	79	95	38	68
28	*130	541	352	493	362	598	380	126	112	82	38	66
29	122	473	600	437	-	765	358	130	104	95	37	54
30	116	422	2,380	397	------	982	330	192	120	118	37	48
31	110	-----	2,840	429	-----	1,190	------	168	------	114	38	------
Total	4,558	16,520	17,516	19,004	15,922	17,851	18,848	6,156	2,962	2,710	1,612	1,698
Mean	147	551	565	613	569	576	628	199	98.7	87.4	52.0	56.6
Cfsm	2.23	8.37	8.59	9.32	8.65	8.75	9.54	3.02	1.50	1.33	0.790	0.860
In.	2.58	9.34	9.90	10.74	9.00	10.09	10.65	3.48	1.67	1.53	0.91	0.96
Ac-ft	9,040	32,770	34,740	37,690	31,580	35,410	37,380	12,210	5,880	5,380	3,200	3,370

Calendar year 1954: Max 3,040 Min 39 Mean 382 Cfsm 5.81 In. 78.75 Ac-ft 276,300
Water year 1954-55: Max 3,040 Min 30 Mean 343 Cfsm 5.21 In. 70.85 Ac-ft 248,600

Peak discharge (base, 3,600 cfs).--Nov. 18 (11:30 a.m.) 3,740 cfs (8.58 ft); Dec. 30 (8:30 p.m.) 3,830 cfs (8.69 ft); Feb. 8 (2:30 a.m.) 3,660 cfs (8.48 ft).
* Discharge measurement made on this day.

Big Creek near Knappa, Oreg.

Location.--Lat 46°09'00", long 123°35'00", 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 1955 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 100 ft (by barometer).

Average discharge.--6 years, 172 cfs (124,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,250 cfs Dec. 30 (gage height, 2.93 ft); minimum daily, 26 cfs Sept. 4-6.
1949-55: Maximum discharge, 2,130 cfs Feb. 24, 1950 (gage height, 4.01 ft); minimum, about 7 cfs Oct. 10, 1952 when filling of tanks at fish hatchery lowered water surface slightly below inlets.

Remarks.--Records good except those for period of no gage-height record, which are fair. Small diurnal fluctuation at times caused by fish hatchery above station. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
0.2	22	1.2	215	0.3	26	1.5	360
.4	34	1.5	345	.5	53	2.0	630
.6	61	2.0	630	.8	115	3.0	1,300
.9	125			1.2	237		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	42	153	754	256	291	519	186	92	120	48	29
2	28	44	138	536	230	252	439	173	88	92	46	28
3	31	42	131	413	212	220	379	167	90	79	42	28
4	30	42	123	356	226	199	320	161	88	73	41	26
5	29	50	131	320	226	192	287	153	82	71	40	26
6	28	56	176	275	339	183	260	147	79	69	38	26
7	36	46	206	245	524	180	237	141	77	66	38	28
8	46	52	*176	226	773	180	223	136	71	69	40	29
9	40	58	173	202	524	192	260	131	69	73	38	29
10	70	69	158	192	398	384	275	128	67	67	38	28
11	110	65	147	189	325	*398	296	128	67	64	38	28
12	95	78	183	183	283	481	486	128	66	*60	37	28
13	70	80	248	275	256	384	428	120	64	57	36	31
14	60	120	275	237	226	316	356	120	62	55	36	44
15	55	174	356	260	209	271	312	113	62	53	36	66
16	50	289	291	412	199	237	312	108	60	57	35	57
17	46	439	245	454	189	220	283	106	60	52	35	42
18	44	558	209	*360	183	202	264	104	58	50	35	36
19	75	530	192	304	173	196	*245	99	57	48	33	33
20	90	374	173	283	161	186	226	97	55	47	33	31
21	100	283	158	252	156	216	212	94	53	46	32	30
22	85	226	150	260	153	491	226	92	53	46	32	30
23	75	192	164	260	150	370	271	*88	53	46	32	29
24	65	167	241	267	183	304	241	86	52	46	32	28
25	60	199	234	296	183	316	230	84	58	46	32	28
26	55	199	206	256	180	287	245	88	55	64	*32	29
27	52	223	196	230	180	264	223	86	57	53	31	37
28	*50	209	202	212	297	267	209	79	75	50	30	37
29	49	189	371	196	-	394	206	82	92	52	30	32
30	48	170	932	189	------	513	192	120	77	53	30	30
31	45	-----	1,020	220	-----	497	-----	106	------	48	30	------
Total	1,746	5,265	7,758	9,114	7,394	9,083	8,662	3,651	2,039	1,872	1,106	983
Mean	56.3	176	250	294	264	293	289	118	68.0	60.4	35.7	32.8
Cfsm	1.76	5.52	7.84	9.22	8.28	9.18	9.06	3.70	2.13	1.89	1.12	1.03
In.	2.04	6.14	9.04	10.63	8.62	10.59	10.10	4.26	2.38	2.18	1.29	1.15
Ac-ft	3,460	10,440	15,390	18,080	14,670	18,020	17,180	7,240	4,040	3,710	2,190	1,950

Calendar year 1954: Max 1,120 Min 26 Mean 175 Cfsm 5.49 In. 74.42 Ac-ft 126,600
Water year 1954-55: Max 1,020 Min 26 Mean 161 Cfsm 5.05 In. 68.42 Ac-ft 116,400

Peak discharge (base, 900 cfs).--Dec. 30 (8 p.m.) 1,250 cfs (2.93 ft); Feb. 8 (4 a.m.) 916 cfs (2.44 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-27; discharge estimated on basis of recorded range in stage and records for North Fork Klaskanine River near Olney and Youngs River near Astoria.

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 town of Grays River.

Drainage area.--16.3 sq mi.

Records available.--April 1949 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 71 ft (by barometer).

Average discharge.--6 years, 130 cfs (94,120 acre-ft per year).

Extremes.--Maximum discharge during year, 1,790 cfs Nov. 18 (gage height, 5.48 ft), from rating curve extended as explained below; minimum, 10 cfs Sept. 12, 13 (gage height, 2.03 ft).

1949-55: Maximum discharge, 2,970 cfs Feb. 9, 1951 (gage height, 6.45 ft), from rating curve extended above 460 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 460 cfs on basis of slope-area determination of peak flow).

Remarks.--Records good except those below 50 cfs, which are fair. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.9	7.0	3.2	226
2.0	11.5	3.5	335
2.2	26	4.0	580
2.4	48	4.5	900
2.6	78	5.1	1,400
2.9	139		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	40	96	489	137	121	530	78	46	128	171	12.5
2	25	37	83	316	125	98	335	75	43	94	116	12.5
3	33	34	*75	226	110	87	253	83	48	70	91	12
4	27	32	68	174	102	75	200	85	55	56	75	11.5
5	24	56	70	147	106	66	162	78	49	52	62	11.5
6	23	67	100	123	246	62	139	68	44	49	55	11
7	34	51	110	108	578	60	130	62	41	43	49	11
8	168	58	92	104	857	70	121	56	36	*43	44	11
9	106	72	94	98	374	*85	271	52	34	40	*41	11
10	142	92	91	89	243	269	220	51	32	37	36	11
11	246	91	80	83	177	250	216	142	30	35	34	10.5
12	149	106	154	76	144	312	415	130	29	32	31	10.5
13	108	110	243	116	123	223	339	91	28	31	30	26
14	83	142	270	112	104	174	*271	76	26	29	26	38
15	72	200	327	125	92	147	233	68	26	27	25	78
16	61	335	213	194	83	123	271	62	25	30	23	96
17	58	585	162	226	76	106	233	61	24	26	22	48
18	51	1,400	123	174	68	98	188	58	26	26	21	35
19	83	809	100	139	64	91	165	54	24	25	20	27
20	112	424	85	123	59	83	147	49	23	24	19.5	24
21	142	250	80	108	55	198	130	46	22	23	19	*20
22	104	180	73	121	52	429	132	42	22	22	18	19.5
23	85	132	83	155	51	243	213	40	31	21	18	18
24	72	108	123	194	73	182	165	38	24	20	17.5	16.5
25	65	204	123	204	70	182	132	36	25	21	17.5	16
26	58	220	100	144	65	168	118	*43	25	97	16.5	16.5
27	*54	233	89	*121	59	147	106	41	31	118	16	28
28	51	182	116	104	136	160	94	36	70	83	15	22
29	47	139	307	91	-	264	87	38	59	105	15	19
30	44	116	885	82	------	335	80	52	91	137	14.5	16.5
31	42	-----	756	102	-----	536	-----	52	------	188	14	------
Total	2,394	6,505	5,371	4,668	4,429	5,444	6,096	1,943	1,089	1,732	1,174.5	700.0
Mean	77.2	217	173	151	158	176	203	62.7	36.3	55.9	37.9	23.3
Cfsm	4.74	13.3	10.6	9.26	9.69	10.8	12.5	3.85	2.23	3.43	2.33	1.43
In.	5.46	14.84	12.25	10.65	10.11	12.42	13.91	4.43	2.48	3.95	2.68	1.60
Ac-ft	4,750	12,900	10,650	9,260	8,780	10,800	12,090	3,850	2,160	3,440	2,330	1,390

Calendar year 1954: Max 1,400 Min 12 Mean 124 Cfsm 7.61 In. 103.20 Ac-ft 89,730
Water year 1954-55: Max 1,400 Min 10.5 Mean 114 Cfsm 6.99 In. 94.78 Ac-ft 82,400

Peak discharge (base, 1,500 cfs).--Nov. 18 (5:30 a.m.) 1,790 cfs (5.48 ft).
* Discharge measurement made on this day.

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 1955.

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.--28 years, 175 cfs (126,700 acre-ft per year).

Extremes.--Maximum discharge during year, 2,670 cfs Feb. 8 (gage height, 10.30 ft); minimum, 8.0 cfs Sept. 7, 12, 13.
1927-55: 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. Since March 1941, Youngs River-Lewis and Clark Water District has diverted water about 4 miles above station for domestic use; water rights are for 2 cfs but probably much less is diverted.

Revisions.--WSP 1218: Drainage area (present and former site).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	7.0	3.5	160
1.0	10	4.0	233
1.5	21	5.0	440
2.0	38	7.0	1,150
2.5	65	9.0	2,030
3.0	107		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	37	137	962	272	435	878	152	65	145	42	9.7
2	13	35	120	611	238	352	581	141	56	102	38	9.4
3	14	34	110	408	208	274	420	131	55	76	34	9.0
4	14	32	101	350	208	210	320	123	54	66	30	8.7
5	14	50	129	358	202	172	249	115	49	60	27	8.4
6	13	78	282	288	414	150	205	106	47	60	25	8.3
7	24	54	382	235	818	140	178	97	42	52	23	8.3
8	95	50	*278	216	1,650	140	164	92	38	57	22	8.6
9	43	59	251	185	712	147	272	83	34	64	21	8.7
10	61	85	206	159	438	402	302	79	31	64	20	8.6
11	186	83	170	147	312	*443	432	81	32	54	20	8.3
12	140	125	249	138	247	726	681	84	30	46	18	8.3
13	98	197	392	216	224	509	667	80	29	*40	17	15
14	76	247	390	182	178	378	449	77	28	36	16	35
15	60	348	581	290	157	298	362	69	28	33	16	86
16	51	622	376	698	141	237	366	64	27	40	15	83
17	51	910	276	768	131	196	316	61	26	34	15	46
18	44	1,410	206	*488	118	172	262	60	27	30	14	33
19	89	1,090	165	340	108	154	233	57	26	29	14	26
20	107	600	141	288	102	138	*210	52	24	27	14	23
21	152	364	129	230	96	198	191	49	22	26	13	20
22	121	257	125	231	92	740	197	46	21	24	12	17
23	103	191	189	198	88	422	344	*44	26	23	12	16
24	87	154	318	200	135	314	274	43	23	23	12	15
25	77	231	360	242	145	328	230	42	26	24	12	14
26	66	231	294	190	138	282	247	46	27	70	*12	14
27	59	284	233	166	137	228	205	53	26	59	11	23
28	*54	221	237	150	404	255	182	44	56	44	10	31
29	48	184	601	138	[illegible]	584	182	44	85	45	9.8	23
30	44	157	1,610	127	------	790	164	73	72	50	9.7	18
31	40	-----	1,400	160	-----	740	-----	78	------	44	9.7	------
Total	2,058	8,420	10,438	9,359	8,113	10,554	9,953	2,366	1,132	1,547	564.2	642.3
Mean	66.4	281	337	302	290	340	332	76.3	37.7	49.9	18.2	21.4
Cfsm	1.66	7.01	8.40	7.53	7.23	8.48	8.28	1.90	0.940	1.24	0.454	0.534
In.	1.91	7.81	9.68	8.68	7.52	9.79	9.23	2.19	1.05	1.43	0.52	0.60
Ac-ft	4,080	16,700	20,700	18,560	16,090	20,930	19,740	4,690	2,250	3,070	1,120	1,270

Calendar year 1954: Max 2,170 Min 11 Mean 211 Cfsm 5.26 In. 71.37 Ac-ft 152,600
Water year 1954-55: Max 1,650 Min 8.3 Mean 178 Cfsm 4.44 In. 60.41 Ac-ft 129,200

Peak discharge (base, 2,100 cfs).--Nov. 18 (12:30 p.m.) 2,170 cfs (9.30 ft); Dec. 30 (7 p.m.) 2,120 cfs (9.19 ft); Feb. 8 (4 a.m.) 2,670 cfs (10.30 ft).
* Discharge measurement made on this day.

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 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 213.40 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 66.3 cfs (48,000 acre-ft per year).

Extremes.--Maximum discharge during year, 584 cfs Feb. 8 (gage height, 4.14 ft); minimum, 4.8 cfs Sept. 6.
1949-55: Maximum discharge, 829 cfs Dec. 9, 1953 (gage height, 4.84 ft); minimum, 1.5 cfs Oct. 7, 1952.

Remarks.--Records good except those for periods of doubtful gage-height record or backwater from debris, which are fair. Records of water temperatures for the water year 1955 are given in WSP 1403.

Rating tables, water year 1954-55, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.5	6.1	2.5	104	1.4	3.5	2.1	40
1.6	10	3.0	214	1.5	5.6	2.5	94
1.8	22	4.0	535	1.6	8.5	3.0	213
2.1	47			1.8	18	4.0	535

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	15	51	339	78	117	258	58	27	67	15	5.6
2	7.0	15	46	241	71	100	202	52	25	48	14	5.4
3	8.2	14	40	164	64	83	167	49	27	36	12	5.4
4	7.8	14	38	135	65	67	126	46	28	32	12	5.2
5	7.0	21	46	126	65	58	104	41	26	30	11	5.0
6	7.0	26	78	104	125	51	84	37	23	28	10	5.0
7	13	19	92	86	233	48	72	36	20	24	9.7	5.2
8	22	19	*75	78	423	48	64	32	18	29	11	5.4
9	12	21	71	67	241	49	71	30	16	30	10	5.4
10	23	28	60	58	157	129	89	30	16	29	9.7	5.2
11	52	27	52	51	115	*152	111	30	16	25	9.7	5.2
12	44	43	68	47	89	207	278	29	15	*23	9.3	5.0
13	31	45	105	80	75	167	191	28	15	21	8.9	7.0
14	26	71	122	65	61	135	149	30	14	20	8.2	14
15	22	97	177	100	54	109	122	26	14	19	8.2	25
16	19	201	133	224	47	89	120	24	12	20	7.9	19
17	19	282	104	250	42	75	105	25	12	18	7.9	16
18	17	360	80	*164	37	67	92	24	13	16	7.6	11
19	33	312	67	115	34	58	*84	23	11	16	7.6	9.3
20	39	196	56	98	31	51	74	22	10	15	7.6	8.9
21	47	124	50	78	30	61	65	22	9.7	14	7.0	7.9
22	40	92	47	72	29	175	70	20	9.7	14	7.0	7.3
23	35	72	63	65	28	120	94	*20	9.3	14	6.8	7.0
24	31	59	105	61	42	96	83	20	8.5	13	6.8	6.8
25	28	77	115	74	39	102	75	19	12	14	6.8	6.5
26	26	75	94	61	37	88	92	22	10	22	*6.5	6.5
27	*24	88	80	55	37	78	78	22	11	19	6.2	11
28	21	78	88	49	113	d85	72	19	24	16	5.9	12
29	21	70	193	43	-	d190	70	21	36	16	5.6	9.3
30	19	60	468	40	------	d240	61	35	27	16	5.6	8.2
31	17	-----	468	49	------	216	-----	31	------	16	5.9	------
Total	725.4	2,621	3,332	3,239	2,462	3,311	3,323	923	515.2	720	267.4	255.7
Mean	23.4	87.4	107	104	87.9	107	111	29.8	17.2	23.2	8.63	8.52
Cfsm	1.67	6.24	7.64	7.43	6.28	7.64	7.93	2.13	1.23	1.66	0.616	0.609
In.	1.93	6.96	8.85	8.60	6.54	8.80	8.83	2.45	1.37	1.91	0.71	0.68
Ac-ft	1,440	5,200	6,610	6,420	4,880	6,570	6,590	1,830	1,020	1,430	530	507

Calendar year 1954: Max 563 Min 6.4 Mean 69.1 Cfsm 4.94 In. 67.03 Ac-ft 50,050
Water year 1954-55: Max 468 Min 5.0 Mean 59.4 Cfsm 4.24 In. 57.63 Ac-ft 43,030

Peak discharge (base, 500 cfs).--Dec. 30 (5 p.m.) 580 cfs (4.13 ft); Feb. 8 (2:30 a.m.) 584 cfs (4.14 ft).

* Discharge measurement made on this day.

d Doubtful gage-height record; discharge estimated on basis of appearance of recorder record and records for Youngs River near Astoria and Big Creek near Knappa.

Note.--Backwater from debris May 30 to July 1.

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 1955.

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.--16 years, 2,646 cfs (1,916,000 acre-ft per year).

Extremes.--Maximum discharge during year, 19,500 cfs Dec. 31 (gage height, 13.49 ft); minimum, 113 cfs Sept. 9-11.
1939-55: 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 regulation or diversion.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31

1.7	150	6.0	3,950
2.0	295	8.0	6,950
3.0	910	11.0	13,100
4.0	1,740	14.0	21,000

Jan. 1 to Sept. 30

1.4	105
1.7	175
2.0	295

Note.-Same as preceding table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	536	2,410	16,400	3,690	4,770	9,140	2,900	889	572	290	135
2	150	506	2,130	12,200	3,830	5,240	7,850	2,680	819	620	280	130
3	154	488	1,920	8,760	3,630	4,660	6,660	2,490	784	554	255	128
4	154	464	1,750	6,760	3,460	3,900	5,560	2,340	770	500	241	125
5	154	482	1,780	5,670	3,450	3,270	4,740	2,240	752	458	225	121
6	159	566	2,590	4,740	4,100	2,850	4,140	2,110	716	440	209	117
7	200	554	*4,200	3,990	7,750	2,600	3,760	1,990	686	422	202	115
8	416	554	4,710	3,580	14,700	2,590	3,420	1,880	638	428	196	115
9	446	590	4,210	3,220	12,600	2,590	3,830	1,720	602	470	190	113
10	434	826	3,820	2,850	9,180	*3,600	4,090	1,620	572	500	184	113
11	925	917	3,350	2,560	6,710	5,100	4,540	1,630	536	506	178	113
12	1,340	1,070	3,390	2,350	5,280	6,710	7,120	1,660	512	470	175	115
13	1,040	1,200	4,920	2,820	4,400	6,900	8,800	1,500	494	*422	175	132
14	840	1,740	5,570	3,420	3,710	6,290	7,720	1,410	476	380	172	190
15	692	2,660	6,780	3,930	3,180	5,340	6,220	1,330	470	344	170	410
16	590	4,670	6,300	5,280	2,780	4,630	5,760	1,250	452	334	170	530
17	548	8,000	5,360	*8,340	2,520	4,020	5,490	1,180	446	322	165	446
18	494	14,400	4,430	8,570	2,210	3,610	4,950	1,150	446	317	162	374
19	674	14,100	3,710	6,760	1,980	3,290	4,460	1,140	440	306	158	295
20	1,060	10,300	3,130	5,300	1,780	3,020	*4,000	1,090	422	290	152	245
21	1,650	7,310	2,710	4,440	1,630	3,110	3,590	1,010	398	270	150	213
22	1,570	5,340	2,450	4,070	1,540	6,750	3,300	938	386	260	150	199
23	1,430	4,160	2,460	4,000	1,480	6,050	3,570	882	368	245	148	184
24	1,180	3,350	3,160	4,070	1,590	5,310	3,420	*833	350	241	142	178
25	1,020	3,180	3,890	4,510	1,760	4,820	3,120	805	368	237	*140	170
26	889	3,060	3,930	4,290	1,790	4,770	3,150	812	386	306	140	165
27	*798	3,130	3,430	3,870	1,750	4,470	3,570	912	386	374	140	175
28	728	3,120	3,170	3,470	3,020	4,400	3,310	770	446	339	140	209
29	668	2,940	4,420	3,070	-	6,040	3,240	752	476	334	138	217
30	626	2,700	11,700	2,780	-----	7,220	3,100	812	506	312	138	205
31	578	-----	18,800	2,890	-----	8,320	-----	903	------	295	138	------
Total	21,757	102,913	136,580	158,960	115,500	146,240	145,420	44,639	15,992	11,868	5,513	5,977
Mean	702	3,430	4,405	5,128	4,125	4,717	4,847	1,440	533	383	178	199
Cfsm	1.05	5.14	6.60	7.69	6.18	7.07	7.27	2.16	0.799	0.574	0.267	0.298
In.	1.21	5.74	7.62	8.86	6.44	8.15	8.11	2.49	0.89	0.66	0.31	0.33
Ac-ft	43,150	204,100	270,900	315,300	229,100	290,100	288,400	88,540	31,720	23,540	10,930	11,860

Calendar year 1954: Max 31,200 Min 150 Mean 3,003 Cfsm 4.50 In. 61.11 Ac-ft 2,174,000
Water year 1954-55: Max 18,800 Min 113 Mean 2,497 Cfsm 3.74 In. 50.81 Ac-ft 1,808,000

Peak discharge (base, 17,000 cfs).--Dec. 31 (7 a.m.) 19,500 cfs (13.49 ft).
* Discharge measurement made on this day.

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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 1955.
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.--24 years (1931-55), 1,217 cfs (881,100 acre-ft per year).
Extremes.--Maximum discharge during year, 14,800 cfs Nov. 18 (gage height, 12.15 ft), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum, 72 cfs Sept. 4.
1914-16, 1931-55: 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, 45 cfs Oct. 15, 16, 17, 18, 1952.
Remarks.--Records excellent. No regulation or diversion above station.
Revisions.--WSP 1014: Drainage area. Revised figures of discharge, in cubic feet per second, for period in the water year 1953, superseding those published in WSP 1288, are given herewith:

Mar. 30, 1953.....1,520
Mar. 31, 1953.....1,430

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
March 1953.....	46,355	4,380	526	1,495	9.40	10.84	91,940
Water year 1952-53.....	-	11,600	45	1,182	7.43	100.88	855,500
Calendar year 1953.....	-	12,900	87	1,543	9.70	131.71	1,117,000

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
0.5	102	3.0	1,330	0.3	59	3.0	1,350
.8	163	5.0	3,300	.6	122	5.0	3,300
1.0	215	8.0	7,600	1.0	238	8.0	7,600
1.5	380	11.0	12,700	1.5	435	10.0	10,900
2.0	630			2.0	690		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	352	971	6,110	1,940	1,610	4,220	1,240	490	310	184	86
2	120	334	859	3,900	1,600	1,360	3,230	1,200	412	310	178	84
3	132	317	798	2,710	1,370	1,170	2,530	1,110	412	273	167	82
4	126	303	750	2,150	1,290	1,000	2,050	1,090	412	245	158	80
5	120	331	762	1,820	1,290	882	1,790	1,180	412	235	150	78
6	116	352	1,250	1,510	1,900	840	1,670	1,200	394	228	142	76
7	128	320	*1,720	1,300	5,090	864	1,690	1,150	382	218	137	74
8	300	320	1,490	1,210	9,850	1,040	1,610	1,150	366	225	132	76
9	257	352	1,470	1,090	4,840	1,020	2,280	1,030	350	225	127	78
10	334	495	1,400	972	2,950	*1,880	2,440	951	342	218	124	76
11	1,030	548	1,220	906	2,160	2,500	2,240	1,060	314	202	122	78
12	1,240	744	1,460	876	1,770	2,760	4,170	1,110	292	193	120	76
13	880	824	2,470	1,290	1,530	2,300	4,190	924	270	184	117	120
14	624	1,280	2,390	1,210	1,340	1,840	2,870	828	252	*178	115	155
15	485	2,080	3,050	1,310	1,210	1,560	2,230	750	245	175	113	172
16	404	3,220	2,330	1,720	1,090	1,390	2,100	744	235	175	110	417
17	370	5,580	1,850	*2,370	979	1,260	1,960	714	228	172	108	252
18	328	11,400	1,500	2,020	882	1,210	1,730	744	228	167	106	178
19	700	7,730	1,250	1,640	834	1,160	1,620	828	218	161	104	150
20	1,350	4,730	1,070	1,450	810	1,080	1,490	798	205	153	101	137
21	2,090	2,930	971	1,290	762	1,410	*1,340	674	199	147	97	124
22	1,690	2,130	936	1,360	720	4,910	1,410	602	196	142	95	117
23	1,270	1,630	1,010	1,610	684	3,340	1,800	550	202	137	95	113
24	985	1,330	1,430	1,880	798	2,310	1,690	*500	196	134	*95	108
25	804	1,490	1,340	2,560	798	2,040	1,490	480	205	134	93	101
26	*672	1,350	1,140	2,000	756	1,910	1,410	490	202	242	95	99
27	576	1,470	1,010	1,630	756	1,730	1,270	476	196	259	93	115
28	505	1,370	1,060	1,440	1,360	1,830	1,180	435	262	222	91	124
29	452	1,230	2,150	1,260	-	3,570	1,160	440	248	208	88	113
30	408	1,110	8,080	1,160	------	3,860	1,180	505	242	199	86	106
31	376	-----	9,980	1,450	-----	4,200	-----	490	------	187	88	------
Total	18,994	57,652	59,167	55,204	51,359	59,836	62,060	25,443	8,607	6,258	3,631	3,645
Mean	613	1,922	1,909	1,781	1,834	1,930	2,069	821	287	202	117	122
Cfsm	3.86	12.1	12.0	11.2	11.5	12.1	13.0	5.16	1.81	1.27	0.736	0.767
In.	4.44	13.48	13.84	12.91	12.01	14.00	14.52	5.95	2.01	1.46	0.85	0.85
Ac-ft	37,670	114,400	117,400	109,500	101,900	118,700	123,100	50,470	17,070	12,410	7,200	7,230

Calendar year 1954: Max 12,400 Min 116 Mean 1,268 Cfsm 7.97 In. 108.26 Ac-ft 918,100
Water year 1954-55: Max 11,400 Min 74 Mean 1,128 Cfsm 7.09 In. 96.32 Ac-ft 817,000

Peak discharge (base, 12,000 cfs).--Nov. 18 (12 m.) 14,800 cfs (12.15 ft); Dec. 30 (11:30 p.m.) 12,700 cfs (11.02 ft); Feb. 8 (6 a.m.) 12,600 cfs (10.93 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 1955 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 70 ft (by barometer).

Average discharge.--24 years, 982 cfs (710,900 acre-ft per year).

Extremes.--Maximum discharge during year, 12,100 cfs Dec. 30 (gage height, 9.38 ft); minimum, 73 cfs Sept. 6, 7.
1931-55: Maximum discharge, 20,000 cfs Dec. 22, 1933 (gage height, 13.00 ft); minimum, 42 cfs Oct. 15-18, 1952.
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 regulation or diversion above station.

Revisions.--WSP 1044: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.5	73	3.0	1,550
.7	122	4.0	2,730
1.0	215	6.0	5,890
1.5	421	8.0	9,450
2.0	695		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	305	772	5,530	1,390	1,760	3,080	1,040	407	352	157	91
2	104	293	702	3,590	1,220	1,450	2,590	1,010	379	326	151	87
3	119	285	662	2,520	1,060	1,180	2,150	936	370	270	148	89
4	117	274	618	2,020	1,020	968	1,800	896	365	251	142	80
5	112	281	630	1,700	1,050	864	1,580	904	352	237	134	75
6	109	293	1,050	1,400	1,590	795	1,460	912	343	222	128	75
7	117	287	*1,300	1,220	4,230	802	1,440	872	330	212	125	78
8	212	274	1,100	1,100	7,060	888	1,370	856	318	226	122	82
9	163	293	1,030	992	3,950	880	1,580	795	301	229	122	80
10	251	334	952	888	2,550	*1,780	1,720	744	297	212	119	78
11	545	348	856	818	1,900	2,380	1,780	744	289	198	119	80
12	688	480	968	765	1,540	2,610	3,120	751	278	189	a115	78
13	525	480	1,450	1,060	1,300	2,160	3,250	695	262	182	a115	122
14	402	691	1,540	976	1,120	1,690	2,400	643	259	*176	a110	163
15	326	1,140	2,140	1,070	984	1,390	1,910	600	251	173	a110	148
16	285	2,060	1,780	1,450	888	1,220	1,900	570	240	176	a105	305
17	278	3,480	1,450	*2,240	825	1,100	1,760	560	237	173	a105	170
18	244	6,060	1,200	1,800	737	1,040	1,530	545	237	166	a105	131
19	556	4,650	1,020	1,400	669	992	1,410	555	222	160	a100	117
20	695	3,010	904	1,240	624	928	1,290	550	215	157	a100	109
21	1,170	2,080	810	1,080	588	1,150	*1,170	505	208	151	a100	101
22	1,080	1,550	765	1,170	570	4,940	1,280	470	205	151	a95	96
23	832	1,250	765	1,260	545	3,280	1,550	436	208	148	a95	94
24	669	1,030	984	1,300	695	2,330	1,460	*412	205	145	*96	91
25	565	1,130	984	1,750	682	1,970	1,290	407	208	145	96	87
26	*500	1,030	872	1,510	636	1,830	1,260	431	205	208	96	84
27	450	1,190	788	1,260	630	1,660	1,140	431	198	208	94	112
28	407	1,070	818	1,090	1,420	1,730	1,060	388	285	179	91	128
29	374	960	1,760	968	-	2,880	1,080	383	266	170	89	112
30	343	864	7,670	920	------	3,320	1,030	441	259	173	89	99
31	322	-----	9,290	1,090	-----	3,210	-----	446	------	160	91	------
Total	12,664	37,463	47,630	47,177	41,473	55,177	51,440	19,928	8,199	6,125	3,464	3,242
Mean	409	1,249	1,536	1,522	1,481	1,780	1,715	643	273	198	112	108
Cfsm	2.86	8.73	10.7	10.6	10.4	12.4	12.0	4.50	1.91	1.38	0.78	0.76
In.	3.29	9.74	12.39	12.27	10.79	14.35	13.38	5.18	2.13	1.59	0.90	0.84
Ac-ft	25,120	74,310	94,470	93,570	82,260	109,400	102,000	39,530	16,260	12,150	6,870	6,430

Calendar year 1954: Max 9,290 Min 104 Mean 985 Cfsm 6.89 In. 93.45 Ac-ft 712,900
Water year 1954-55: Max 9,290 Min 75 Mean 915 Cfsm 6.40 In. 86.85 Ac-ft 662,400

Peak discharge (base, 9,300 cfs).--Dec. 30 (9:30 p.m.) 12,100 cfs (9.38 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for Wilson River near Tillamook.

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 1955.

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. 12 (corrected), 1930, staff gage, and Sept. 13 (corrected), 1930, to Sept. 30, 1938, wire-weight gage, all at sites about 2 miles downstream at different datums.

Average discharge.--35 years (1906-11, 1925-55), 1,600 cfs (1,158,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,000 cfs Dec. 30 (gage height, 20.02 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 91 cfs Sept. 12, 13.

1905-12, 1924-55: 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 good. No diversion above station.

Revisions (water years).--WSP 754: 1922 (maximum gage height). WSP 814: 1935.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.3	85	8.0	3,830
2.6	155	10.0	6,200
3.0	275	14.0	12,100
4.0	675	17.0	17,600
6.0	1,900		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	180	512	936	9,130	1,960	3,630	4,270	1,320	544	392	*250	108
2	178	484	864	5,600	1,810	3,320	3,560	1,240	506	388	234	105
3	183	460	815	3,870	1,640	2,480	3,030	*1,150	492	317	219	103
4	183	440	785	3,020	1,570	1,920	2,500	1,090	476	286	204	101
5	175	472	810	2,490	1,550	1,580	2,110	1,080	460	268	195	97
6	170	594	1,810	2,040	2,230	1,360	1,840	1,060	448	258	186	95
7	180	512	2,470	1,750	6,340	1,240	1,690	1,030	432	244	180	93
8	219	504	2,250	1,540	*10,200	1,180	1,550	1,030	420	268	175	97
9	219	544	2,080	1,430	6,310	1,090	2,070	974	412	268	170	97
10	275	702	1,890	1,280	3,950	1,500	2,200	930	388	250	165	95
11	*484	720	1,660	1,160	2,830	2,020	3,050	985	370	231	160	95
12	675	990	1,810	1,070	2,200	3,240	6,550	1,020	345	216	155	93
13	666	1,010	2,930	1,350	1,890	3,000	7,530	990	324	207	150	150
14	532	1,560	2,760	1,250	1,620	2,420	4,710	968	*310	201	150	303
15	464	2,420	3,490	1,370	1,410	2,010	3,410	805	306	192	145	248
16	408	3,710	2,840	2,000	1,240	1,750	3,210	775	289	192	142	1,120
17	384	6,610	2,230	3,430	1,150	1,540	2,920	770	275	192	140	652
18	352	6,150	1,840	2,920	1,040	1,370	2,540	775	275	192	138	444
19	616	5,050	1,580	2,160	946	1,230	2,410	815	264	192	132	352
20	702	3,580	1,350	1,850	875	1,110	2,290	826	250	183	130	*303
21	2,040	2,580	1,210	1,630	810	1,160	2,090	755	244	178	128	264
22	2,170	2,020	1,160	1,680	770	*5,880	2,120	684	237	172	125	240
23	1,720	1,650	1,330	1,630	720	4,560	2,450	630	237	165	120	225
24	1,330	1,400	1,520	1,640	648	3,620	2,290	585	234	162	118	210
25	1,080	1,540	1,550	2,080	870	2,950	2,010	558	231	162	115	192
26	908	1,320	1,420	1,880	914	2,560	1,860	580	225	400	118	180
27	795	1,330	*1,290	1,660	936	2,200	1,660	590	222	452	118	201
28	702	1,200	1,270	1,450	2,000	2,330	1,540	540	314	348	112	261
29	644	1,100	2,450	1,290	-	4,530	1,500	524	310	303	110	228
30	585	1,020	14,500	1,240	------	5,090	1,380	572	282	282	110	195
31	544	-----	16,600	1,520	-----	4,610	------	585	------	261	110	------
Total	19,763	52,184	81,500	68,410	60,629	78,480	82,340	26,236	10,124	7,822	4,704	6,947
Mean	638	1,739	2,629	2,207	2,165	2,532	2,745	846	337	252	152	232
Cfsm	3.16	8.61	13.0	10.9	10.7	12.5	13.6	4.19	1.67	1.25	0.752	1.15
In.	3.64	9.61	15.00	12.59	11.16	14.45	15.16	4.83	1.86	1.44	0.87	1.28
Ac-ft	39,200	103,500	161,700	135,700	120,300	155,700	163,300	52,040	20,080	15,510	9,330	13,780

Calendar year 1954: Max 16,600 Min 162 Mean 1,538 Cfsm 7.61 In. 103.34 Ac-ft 1,113,000
Water year 1954-55: Max 16,600 Min 93 Mean 1,368 Cfsm 6.77 In. 91.89 Ac-ft 990,100

Peak discharge (base, 12,000 cfs).--Dec. 30 (9:30 p.m.) 24,000 cfs (20.02 ft); Feb. 8 (9:30 a.m.) 12,800 cfs (14.44 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 1955.

Gage.--Water-stage recorder. Datum of gage is 48.16 ft above mean sea level, datum of 1929.

Average discharge.--16 years, 1,529 cfs (1,107,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,500 cfs Dec. 31 (gage height, 16.63 ft); minimum, 74 cfs Sept. 7 (gage height, 1.41 ft).
1939-55: 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 table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	72	5.0	1,720
1.5	90	7.0	3,260
1.7	132	9.0	5,400
2.0	206	13.0	11,200
2.5	370	15.0	14,500
3.0	590		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	255	750	9,180	1,880	6,940	4,620	1,860	504	316	*158	90
2	106	243	705	6,290	2,080	6,900	4,080	1,690	468	298	150	88
3	106	234	695	4,550	1,880	4,320	3,700	*1,560	460	252	144	83
4	106	226	658	3,680	1,730	3,170	3,180	1,450	455	237	137	83
5	106	223	715	3,490	1,660	2,530	2,700	1,350	432	228	132	81
6	108	302	3,260	3,080	1,760	2,170	2,380	1,270	406	237	130	79
7	117	320	5,100	2,650	3,300	1,940	2,110	1,200	394	231	125	76
8	117	291	3,290	2,340	*5,480	1,820	1,900	1,120	366	252	119	76
9	114	316	2,620	2,220	5,240	1,710	1,820	1,040	352	258	114	77
10	119	460	2,390	1,970	3,640	1,750	1,770	990	341	249	112	79
11	*158	504	2,060	1,780	2,860	2,020	2,980	957	330	234	112	79
12	286	735	1,930	1,630	2,390	3,200	5,340	913	312	223	112	79
13	424	730	2,930	1,920	2,080	3,480	8,150	896	309	212	112	101
14	278	940	2,920	1,940	1,850	3,320	5,100	886	*298	206	110	212
15	212	2,030	2,980	2,130	1,660	2,860	3,840	850	295	201	108	217
16	188	*2,780	2,580	3,130	1,530	2,460	3,810	780	288	203	106	552
17	178	10,100	2,180	4,610	1,410	2,170	3,590	750	281	209	104	310
18	168	5,210	1,880	3,660	1,290	1,950	3,050	720	278	201	104	198
19	386	3,240	1,640	2,810	1,200	1,790	2,860	695	267	196	102	162
20	680	2,440	1,460	2,350	1,120	1,630	2,920	676	252	190	98	*141
21	1,180	1,930	1,330	2,130	1,040	1,550	2,870	648	243	185	96	130
22	1,490	1,610	1,210	2,060	1,010	*3,590	3,040	622	240	183	94	123
23	1,030	1,380	1,280	1,970	968	3,990	3,070	599	243	178	92	121
24	755	1,180	1,800	1,850	1,010	3,350	2,760	581	246	172	88	121
25	590	1,190	2,330	1,780	1,100	3,000	2,470	563	237	172	88	119
26	473	1,080	2,250	1,640	1,170	2,630	2,470	568	234	209	90	112
27	394	1,020	1,940	1,510	1,290	2,340	2,250	563	228	281	90	119
28	345	913	*1,790	1,410	2,400	2,250	2,160	522	281	234	88	168
29	312	855	2,160	1,330	-	3,960	2,180	509	288	198	86	168
30	288	800	10,700	1,290	------	6,730	2,010	518	258	183	85	139
31	267	-----	13,900	1,340	-----	5,570	-----	522	------	172	86	------
Total	11,189	43,537	83,433	83,720	56,028	97,090	95,180	27,868	9,586	6,800	3,372	4,183
Mean	361	1,451	2,691	2,701	2,001	3,132	3,173	899	320	219	109	139
Cfsm	1.08	4.34	8.06	8.09	5.99	9.38	9.50	2.69	0.958	0.656	0.326	0.416
In.	1.25	4.85	9.29	9.32	6.24	10.81	10.60	3.10	1.07	0.76	0.38	0.47
Ac-ft	22,190	86,350	165,500	166,100	111,100	192,600	188,800	55,280	19,010	13,490	6,690	8,300

Calendar year 1954: Max 18,400 Min 106 Mean 1,689 Cfsm 5.06 In. 68.67 Ac-ft 1,223,000
Water year 1954-55: Max 13,900 Min 76 Mean 1,430 Cfsm 4.28 In. 58.14 Ac-ft 1,035,000

Peak discharge (base, 13,000 cfs).--Nov. 17 (12:30 p.m.) 14,100 cfs (14.73 ft); Dec. 31 (1 a.m.) 17,500 cfs (16.63 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 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 672.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--24 years, 210 cfs (152,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,400 cfs Jan. 1 (gage height, 4.78 ft, from recorded range in stage); minimum, 9.5 cfs Oct. 6, 8.
1931-55: 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, 4.2 cfs Oct. 18, 19, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station. Flow regulated by natural storage in Triangle Lake.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.6	9.1	2.0	185
.8	18	2.5	316
1.0	32	3.0	485
1.2	52	4.0	950
1.5	91	5.0	1,530

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	36	104	1,300	268	448	686	302	81	39	24	14
2	12	34	97	1,000	296	700	570	*282	78	41	24	13
3	12	32	94	*740	287	642	485	260	77	46	*23	13
4	12	30	91	557	276	470	419	244	74	43	23	13
5	11	30	96	485	274	352	365	229	73	40	23	12
6	10	30	176	419	271	293	325	214	70	38	21	12
7	10	32	402	368	*279	257	296	204	68	37	20	12
8	10	35	455	331	388	234	274	195	64	36	19	11
9	10	36	381	319	574	219	257	185	62	34	18	11
10	10	36	320	299	553	214	255	176	58	33	17	11
11	12	38	270	279	448	219	313	170	58	33	17	12
12	19	44	240	257	372	268	470	161	59	33	17	12
13	*31	53	230	260	331	362	845	159	*54	32	17	15
14	39	67	340	310	279	378	910	157	51	30	16	20
15	36	112	400	337	255	349	686	155	49	29	16	30
16	32	222	340	352	239	307	570	147	48	28	16	40
17	30	534	320	448	224	274	541	139	48	28	16	50
18	27	*740	290	497	209	250	493	134	46	26	15	40
19	30	596	260	448	192	229	448	128	45	25	15	25
20	36	402	230	381	181	209	452	119	44	27	15	*21
21	51	293	210	343	170	*199	466	114	43	27	14	20
22	76	234	190	331	163	244	497	107	42	26	14	18
23	97	192	180	325	157	352	509	102	42	24	14	18
24	94	167	190	316	157	378	466	101	41	24	13	18
25	80	155	250	302	167	362	416	96	42	23	13	17
26	68	151	300	284	176	343	392	94	43	26	14	17
27	59	141	320	263	187	316	359	94	42	28	14	18
28	52	130	280	247	219	302	334	93	41	29	13	20
29	45	119	250	232	-	368	334	88	40	28	13	25
30	42	110	500	226	------	610	325	85	39	28	13	20
31	39	-----	900	229	-----	770	-----	84	------	26	13	------
Total	1,104	4,831	8,706	12,485	7,592	10,918	13,758	4,818	1,622	967	520	578
Mean	35.6	161	281	403	271	352	459	155	54.1	31.2	16.8	19.3
Cfsm	0.712	3.22	5.62	8.06	5.42	7.04	9.18	3.10	1.08	0.624	0.336	0.386
In.	0.82	3.59	6.48	9.29	5.65	8.12	10.23	3.58	1.21	0.72	0.39	0.43
Ac-ft	2,190	9,580	17,270	24,760	15,060	21,660	27,290	9,560	3,220	1,920	1,030	1,150

Calendar year 1954: Max 1,800 Min 10 Mean 221 Cfsm 4.42 In. 59.94 Ac-ft 159,800
Water year 1954-55: Max 1,300 Min 10 Mean 186 Cfsm 3.72 In. 50.51 Ac-ft 134,700

Peak discharge (base, 1,200 cfs).--Jan. 1 (time unknown) 1,400 cfs (4.78 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 10 to Jan. 2, Aug. 8 to Sept. 30; discharge estimated on basis of recorded range in stage when available, 1 discharge measurement, and records for Long Tom River at Noti and Alsea River near Tidewater.

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 1955.

Gage.--Water-stage recorder. Datum of gage is 991.8 ft above mean sea level (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.--16 years, 1,015 cfs (734,800 acre-ft per year).

Extremes.--Maximum discharge during year, 11,900 cfs Dec. 30 (gage height, 11.96 ft, referred to outside gage); minimum, 32 cfs Sept. 9.
1910-11, 1939-55: 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 period of no gage-height record, which are fair. Small diversions above station for irrigation; no regulation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	27	3.0	820
1.0	59	4.0	1,460
1.5	170	6.0	3,240
2.0	340	9.0	6,820

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*59	59	a81	3,280	1,710	416	2,330	2,000	902	304	127	47
2	57	59	a81	1,960	1,240	972	2,040	1,780	836	296	120	45
3	56	57	a85	1,200	948	792	1,770	1,590	880	293	117	44
4	56	56	a90	858	820	645	1,540	1,590	966	265	116	42
5	56	57	a150	690	782	540	*1,370	1,890	1,180	251	113	36
6	56	57	a400	555	826	497	1,300	2,240	1,280	240	108	34
7	57	59	a300	470	1,280	565	1,420	2,300	1,350	230	104	34
8	57	61	a200	425	2,230	978	1,610	2,340	1,410	227	99	34
9	57	78	a170	434	2,790	990	1,800	2,000	1,450	221	97	33
10	56	80	a200	456	1,790	902	2,010	1,880	1,380	215	93	33
11	56	76	a150	425	1,340	1,340	1,820	2,110	1,170	203	86	36
12	61	148	a130	380	1,140	1,300	1,940	2,180	1,010	197	84	36
13	78	150	a180	412	1,040	1,210	2,930	1,800	870	194	80	38
14	80	124	a300	452	966	1,060	2,620	1,540	730	188	78	124
15	67	209	a260	452	914	914	2,190	1,440	635	179	76	124
16	61	348	a230	484	924	836	1,990	1,250	560	176	74	191
17	59	265	a210	466	1,050	770	2,290	1,220	502	173	*72	194
18	59	185	a200	438	892	730	1,920	1,380	466	165	67	117
19	80	148	a190	407	755	720	1,720	*1,960	443	158	65	93
20	136	162	*176	376	675	670	2,190	2,490	425	158	63	80
21	97	138	176	492	610	615	2,930	2,200	420	150	61	72
22	97	120	165	1,090	555	750	2,900	1,780	412	145	57	67
23	104	106	160	1,200	497	2,580	2,570	1,510	394	138	56	63
24	91	97	200	1,060	*466	5,110	2,310	1,320	*376	134	56	61
25	80	95	203	1,050	470	4,250	1,960	1,230	340	134	56	59
26	74	101	191	966	448	3,360	1,830	1,110	336	136	56	57
27	70	97	162	902	434	3,020	1,660	1,010	308	162	56	56
28	67	91	162	936	412	4,300	1,680	990	336	150	54	56
29	65	86	191	886	-	4,910	2,190	1,120	430	136	50	57
30	63	84	3,410	1,400	------	3,460	2,290	1,220	336	131	49	56
31	61	-----	5,880	1,760	-----	2,580	-----	1,050	------	129	49	------
Total	2,173	3,453	14,683	26,362	28,004	51,782	61,120	51,520	22,133	5,878	2,439	2,019
Mean	70.1	115	474	850	1,000	1,670	2,037	1,662	738	190	78.7	67.3
Cfsm	0.154	0.253	1.04	1.87	2.20	3.68	4.49	3.66	1.63	0.419	0.173	0.148
In.	0.18	0.28	1.20	2.16	2.29	4.24	5.01	4.22	1.81	0.48	0.20	0.17
Ac-ft	4,310	6,850	29,120	52,290	55,550	102,700	121,200	102,200	43,900	11,660	4,840	4,000

Calendar year 1954: Max 9,000 Min 56 Mean 877 Cfsm 1.93 In. 26.21 Ac-ft 635,200
Water year 1954-55: Max 5,880 Min 33 Mean 744 Cfsm 1.64 In. 22.24 Ac-ft 538,600

Peak discharge (base, 7,000 cfs).--Dec. 30 (12 p.m.) 11,900 cfs (11.96 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for South Umpqua River near Brockway, recorded range in stage, and weather records.

Elk Creek near Drew, Oreg.

Location.--Lat 42°53'25", long 122°55'00", in SW¼ sec. 11, T. 31 S., R. 2 W., on right bank 100 ft downstream from Dixon Creek, a quarter of a mile upstream from Drew Creek, 1¼ miles northwest of Drew, and 3½ miles southeast of Tiller.
Drainage area.--54.4 sq mi.
Records available.--September 1954 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 1,279.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.
Extremes.--Maximum discharge during year, 700 cfs Dec. 30 (gage height, 4.35 ft); minimum, 0.9 cfs Sept. 6, 7 (gage height, 0.89 ft).
Maximum stage known, 11.8 ft from floodmark, probably for flood in January or November 1953 (discharge not determined).
Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Rating tables, Sept. 11, 1954, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)

Sept. 11 to Apr. 20

1.0	2.9	2.0	45
1.2	7.1	2.5	110
1.4	12	3.0	215
1.6	19	3.5	360
1.8	28	4.0	560

Apr. 21 to Sept. 30

0.9	1.0	1.4	11
1.0	2.4	1.6	18
1.2	6.1	1.8	28

Note.--Same as preceding table above 1.8 ft.

Discharge, in cubic feet per second, 1954

Day	Discharge	Day	Discharge
Sept.11	5.1	Sept.21	4.3
12	4.3	22	*4.1
13	3.5	23	4.1
14	4.4	24	3.9
15	16	25	3.9
16	12	26	3.7
17	8.3	27	3.3
18	6.7	28	3.3
19	5.6	29	3.1
20	4.7	30	3.1

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*3.1	4.3	7.5	193	148	32	173	146	20	7.9	3.1	1.3
2	3.1	4.3	9	144	110	91	154	133	20	8.3	2.9	1.1
3	3.1	4.1	13	97	86	89	130	117	18	8.3	2.9	1.1
4	3.1	4.1	12	70	74	52	112	115	18	7.6	2.7	1.1
5	3.1	4.1	11	56	74	43	*99	121	16	7.2	2.6	1.0
6	2.9	4.1	60	45	80	39	91	121	15	7.0	2.6	.9
7	3.1	4.1	55	37	93	44	88	108	14	6.5	2.4	.9
8	3.5	5.3	40	33	163	74	91	99	13	6.3	2.3	1.0
9	3.3	7.1	32	34	187	75	96	84	12	6.5	2.1	1.0
10	3.1	6.2	24	32	135	69	97	75	12	6.3	1.8	1.1
11	3.1	5.6	20	28	102	78	90	70	12	5.9	1.8	1.1
12	3.9	17	23	25	83	84	91	64	11	5.7	2.0	1.1
13	4.7	13	30	28	69	91	146	56	11	5.3	2.1	1.3
14	4.3	11	45	28	61	91	185	64	10	5.1	2.1	4.5
15	3.9	29	32	33	55	80	169	93	10	4.9	2.0	4.9
16	3.7	48	26	41	56	73	165	80	9.6	5.1	2.0	4.1
17	3.5	20	22	37	64	64	189	100	9.4	5.1	*1.8	4.9
18	3.5	17	20	32	54	60	165	94	9.1	4.7	1.7	3.9
19	7.6	15	18	29	45	57	181	*80	8.8	4.5	1.7	3.4
20	8.3	13	*16	26	40	50	344	72	8.3	4.3	1.6	2.9
21	6.2	11	16	63	35	45	384	61	7.9	4.1	1.6	2.6
22	7.1	9.5	16	150	32	66	288	52	7.4	4.1	1.4	2.4
23	7.1	9	16	121	29	334	230	45	7.4	3.9	1.3	2.3
24	6.0	8.5	19	100	*28	466	181	41	*7.9	3.9	1.4	2.1
25	5.8	8	19	93	29	368	154	36	7.6	3.9	1.7	2.1
26	5.1	7.5	18	76	28	277	152	34	7.6	3.9	1.7	2.0
27	4.9	7.5	16	67	28	220	137	30	7.6	4.5	1.6	1.8
28	4.7	7.5	15	61	28	*310	141	26	8.6	4.1	1.4	2.0
29	4.5	7.5	18	57	-	408	171	24	10	3.8	1.3	2.1
30	4.3	7	199	130	------	277	157	23	8.3	3.6	1.3	2.0
31	4.3	-----	358	157	-----	189	-----	22	------	3.4	1.3	------
Total	137.7	319.3	1,225.5	2,123	2,016	4,276	4,851	2,286	337.5	165.7	60.2	64.0
Mean	4.44	10.6	39.5	68.5	72.0	138	162	73.7	11.2	5.35	1.94	2.13
Cfsm	0.082	0.195	0.726	1.26	1.32	2.54	2.98	1.35	0.206	0.098	0.036	0.039
In.	0.09	0.22	0.84	1.45	1.38	2.92	3.32	1.56	0.23	0.11	0.04	0.04
Ac-ft	273	633	2,430	4,210	4,000	8,480	9,620	4,530	669	329	119	127

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 466 Min 0.9 Mean 48.9 Cfsm 0.899 In. 12.20 Ac-ft 35,420

Peak discharge (base, 600 cfs).--Dec. 30 (12 p.m.) 700 cfs (4.35 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 18 to Dec. 19; discharge estimated on basis of recorded range in stage, weather records, and records for South Umpqua River at Tiller and Elk Creek near Trail.

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 1955.

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.--25 years (1929-31, 1932-55), 102 cfs (73,840 acre-ft per year).

Extremes.--Maximum discharge during year, 613 cfs Dec. 31 (gage height, 3.86 ft); minimum, 6.4 cfs Sept. 9.

1926-55: 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).--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.7	4.0	2.0	128
.8	8.0	2.5	227
1.0	18	3.0	355
1.3	37	3.5	505
1.6	64		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	14	18	213	126	58	213	167	43	22	10	8.4
2	14	14	18	151	100	128	187	155	41	22	10	7.6
3	14	14	19	105	83	91	161	147	40	22	11	7.6
4	14	14	19	80	*76	73	143	147	39	20	10	8.0
5	14	14	26	68	74	62	128	151	38	20	10	7.2
6	14	14	202	59	83	61	119	155	36	20	9.8	6.8
7	14	14	95	51	98	62	115	145	33	19	9.4	6.8
8	16	16	53	50	124	77	115	136	31	19	8.9	6.8
9	15	22	*64	50	177	82	119	123	31	19	8.4	7.2
10	14	19	55	47	126	80	124	112	31	18	8.9	7.6
11	14	19	41	43	105	85	*110	108	31	18	8.9	8.0
12	16	39	39	39	90	88	112	102	30	16	9.4	8.0
13	*16	28	90	41	82	90	153	91	29	16	9.4	9.4
14	16	28	70	39	72	87	155	91	29	15	9.4	16
15	15	88	56	48	68	76	145	107	28	14	9.4	18
16	14	91	48	54	70	72	141	91	27	16	9.4	17
17	14	45	41	49	73	67	171	96	26	16	*9.4	19
18	14	34	36	47	67	65	161	88	25	14	9.4	14
19	25	29	34	43	60	63	171	*83	25	14	8.9	12
20	29	26	34	43	58	60	275	79	24	14	8.4	12
21	19	24	34	52	56	57	379	72	22	13	8.0	11
22	19	22	35	121	54	60	292	65	22	12	7.6	11
23	22	21	39	108	51	136	234	62	23	12	7.6	11
24	19	20	43	90	50	205	205	61	*24	12	8.0	10
25	17	20	39	83	53	175	189	57	22	12	8.9	10
26	16	20	35	74	53	163	191	55	22	12	8.9	9.8
27	16	19	30	68	53	159	163	51	22	13	8.4	9.8
28	16	19	31	63	50	263	161	49	24	12	8.0	10
29	15	18	32	62	-	451	193	46	27	12	8.0	10
30	15	18	138	88	------	295	179	45	22	11	7.6	9.8
31	14	-----	375	117	-----	219	-----	44	------	11	7.6	------
Total	504	783	1,889	2,246	2,232	3,710	5,204	2,981	867	486	277.0	309.8
Mean	16.3	26.1	60.9	72.5	79.7	120	173	96.2	28.9	15.7	8.94	10.3
Cfsm	0.214	0.343	0.801	0.954	1.05	1.58	2.28	1.27	0.380	0.207	0.118	0.136
In.	0.25	0.38	0.92	1.10	1.09	1.82	2.55	1.46	0.42	0.24	0.14	0.15
Ac-ft	1,000	1,550	3,750	4,450	4,430	7,360	10,320	5,910	1,720	964	549	614

Calendar year 1954: Max 2,320 Min 12 Mean 131 Cfsm 1.72 In. 23.45 Ac-ft 95,070
Water year 1954-55: Max 451 Min 6.8 Mean 58.9 Cfsm 0.775 In. 10.52 Ac-ft 42,620

Peak discharge (base, 800 cfs).--No peak above base.
* Discharge measurement made on this day.

Cow Creek near Riddle, Oreg.

Location.--Lat 42°55'25", long 123°25'40", in NE¼ sec. 32, T. 30 S., R. 6 W., on left bank about 1,500 ft upstream from Council Creek and 3½ miles southeast of Riddle.

Drainage area.--456 sq mi.

Records available.--September 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 682.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 8,990 cfs Dec. 31 (gage height, 10.22 ft); minimum, 23 cfs Sept. 8.
Maximum discharge known, 41,100 cfs Oct. 29, 1950 (gage height, about 28.5 ft, present site and datum), from slope-area determination.

Remarks.--Records excellent. Many small diversions for irrigation above station.

Rating table, Sept. 12, 1954, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)

1.2	18	2.5	435
1.4	38	3.0	775
1.6	72	4.0	1,580
1.8	122	6.0	3,580
2.0	191	9.0	7,340

Discharge, in cubic feet per second, 1954

Day	Discharge	Day	Discharge
Sept.12	62	Sept.22	*64
13	61	23	62
14	57	24	62
15	59	25	57
16	78	26	55
17	114	27	53
18	103	28	51
19	86	29	50
20	77	30	48
21	70		

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	62	103	3,210	1,350	547	1,790	1,390	238	*103	46	27
2	48	62	100	2,310	1,290	1,600	1,490	1,240	229	103	44	27
3	48	61	95	1,490	1,140	1,400	1,270	1,070	220	103	42	26
4	48	61	108	1,130	*978	1,070	1,110	985	229	100	41	25
5	48	59	158	932	880	880	*1,000	925	208	95	38	25
6	48	61	*2,660	790	925	745	925	888	195	95	38	25
7	48	61	1,670	693	1,150	679	850	835	187	95	38	25
8	50	66	992	623	1,420	790	782	768	184	93	36	24
9	53	84	1,130	602	2,090	850	700	686	165	90	35	24
10	52	84	1,070	554	1,580	805	745	630	158	88	35	25
11	50	81	745	495	1,250	768	715	588	158	88	35	25
12	52	108	588	447	1,040	768	738	560	154	84	35	26
13	57	138	1,300	453	888	805	1,470	521	151	79	35	27
14	55	376	1,310	495	775	782	1,290	495	144	72	34	27
15	55	1,280	978	856	700	715	1,120	495	138	68	35	32
16	53	1,270	775	1,330	679	672	1,020	477	132	64	35	37
17	50	1,440	623	1,200	693	630	1,090	465	125	64	34	47
18	48	396	495	1,260	630	602	1,100	435	117	66	34	50
19	68	295	435	1,100	560	574	1,180	413	117	64	31	50
20	128	242	391	1,000	521	554	1,750	396	117	62	*30	47
21	95	204	380	1,060	489	508	2,970	380	111	59	28	41
22	81	172	375	1,370	459	495	2,670	355	106	57	27	38
23	84	154	355	1,670	435	1,200	1,950	340	103	53	28	38
24	81	141	396	1,550	413	2,420	1,550	330	108	53	27	46
25	*77	132	447	1,400	435	1,900	1,360	320	106	53	28	53
26	77	128	408	1,270	441	1,480	1,400	305	103	53	28	55
27	72	119	355	1,120	483	1,270	1,430	*290	106	53	27	50
28	68	114	330	1,040	459	1,250	1,380	275	108	55	28	48
29	66	108	340	985	-	2,170	1,390	261	111	52	27	53
30	66	103	1,610	1,000	------	3,030	1,470	247	108	48	27	53
31	64	------	6,130	1,210	------	2,220	------	242	------	47	26	------
Total	1,938	7,662	28,852	34,445	24,153	34,179	39,705	17,607	4,436	2,259	1,032	1,096
Mean	62.5	255	886	1,111	863	1,103	1,324	568	148	72.9	33.3	36.5
Ac-ft	3,840	15,200	53,260	68,320	47,910	67,790	78,750	34,920	8,800	4,480	2,050	2,170

Calendar year 1954: Max - Min - Mean - Ac-ft -
Water year 1954-55: Max 6,130 Min 24 Mean 535 Ac-ft 387,500

Peak discharge (base, 6,000 cfs).--Dec. 31 (3:30 a.m.) 8,990 cfs (10.22 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 1955.

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.--21 years (1906-11, 1923-26, 1942-55), 2,739 cfs (1,983,000 acre-ft per year).

Extremes.--Maximum discharge during year, 28,800 cfs Dec. 31 (gage height, 16.31 ft); minimum, 73 cfs Sept. 12, 13.
1905-12, 1923-26, 1942-55: Maximum discharge, 102,000 cfs 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, 1946.
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 time of both floods.

Remarks.--Records excellent. Many small diversions above station for irrigation; no regulation.

Revisions (water years).--WSP 1248: 1946(M), 1948(M), 1951.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
3.3	136	6.0	1,600	2.9	64	6.0	1,540
3.6	210	7.0	2,800	3.1	91	7.0	2,780
4.0	340	8.0	4,400	3.5	168	8.0	4,400
5.0	820			4.0	315	10.0	8,800
				5.0	760	14.0	21,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	153	188	267	12,300	4,740	1,610	6,780	5,600	1,440	474	166	80
2	151	193	264	8,820	4,360	4,240	6,000	4,880	1,280	461	152	80
3	153	188	261	5,380	3,500	4,560	5,060	4,170	1,210	457	143	80
4	151	182	264	3,760	3,040	3,390	4,380	3,760	1,280	441	139	80
5	149	182	305	3,220	2,810	2,650	3,760	3,730	1,440	417	131	77
6	155	182	*2,870	2,680	2,860	2,110	3,360	4,020	1,620	389	125	77
7	153	182	3,970	2,230	3,290	1,960	3,170	4,030	1,700	371	125	74
8	153	182	2,120	1,900	4,840	2,230	3,180	4,020	1,770	357	118	74
9	155	190	1,710	1,780	8,800	2,640	3,260	3,650	1,800	354	112	76
10	157	222	2,020	1,680	6,420	2,500	3,520	3,230	1,770	343	105	74
11	160	243	1,450	1,560	*4,780	2,570	*3,470	3,200	1,640	329	105	74
12	164	270	1,100	1,380	3,780	2,900	3,710	3,330	1,400	308	105	74
13	*172	412	1,800	1,330	3,170	2,960	5,980	3,100	1,230	287	107	77
14	199	444	2,790	1,440	2,740	3,060	6,260	2,670	1,060	277	109	88
15	210	1,100	2,150	1,930	2,460	2,770	5,560	2,740	922	259	107	125
16	199	2,420	1,650	4,190	2,350	2,470	4,720	2,440	820	256	104	250
17	185	1,560	1,300	3,930	2,490	2,280	5,240	2,270	724	250	96	268
18	172	964	1,060	3,650	2,320	2,060	5,200	2,260	660	250	94	326
19	185	706	915	3,140	1,980	1,980	4,900	2,560	625	235	*94	241
20	274	590	838	2,560	1,760	1,860	6,600	3,230	610	220	90	193
21	376	518	790	2,500	1,600	1,710	10,000	3,340	578	215	87	168
22	305	460	754	4,150	1,460	1,790	9,520	2,810	564	204	85	152
23	274	404	712	5,080	1,350	11,100	7,680	2,420	555	193	80	143
24	288	364	724	4,350	1,280	13,100	6,400	2,140	546	193	77	133
25	270	344	964	3,810	1,330	13,300	5,580	1,960	524	190	76	129
26	240	330	1,030	3,370	1,330	8,050	5,740	1,820	483	190	84	127
27	228	326	887	2,860	1,500	6,520	5,680	*1,700	478	193	87	125
28	210	308	802	2,610	1,500	7,900	5,280	1,550	470	206	85	123
29	204	294	820	2,460	-	11,100	5,880	1,540	*501	215	85	121
30	202	280	2,810	2,610	------	11,100	6,100	1,670	560	186	81	121
31	193	-----	20,400	3,930	-----	8,320	-----	1,640	------	176	80	------
Total	6,240	14,228	59,797	106,590	83,840	146,790	161,970	91,480	30,260	8,896	3,234	3,830
Mean	201	474	1,929	3,438	2,994	4,735	5,399	2,951	1,009	287	104	128
Cfsm	0.123	0.289	1.18	2.10	1.83	2.89	3.29	1.80	0.615	0.175	0.063	0.078
In.	0.14	0.32	1.36	2.42	1.90	3.33	3.67	2.07	0.69	0.20	0.07	0.09
Ac-ft	12,380	28,220	118,600	211,400	166,300	291,200	321,300	181,400	60,020	17,640	6,410	7,600

Calendar year 1954: Max 45,400 Min 112 Mean 2,914 Cfsm 1.78 In. 24.12 Ac-ft 2,110,000
Water year 1954-55: Max 20,400 Min 74 Mean 1,965 Cfsm 1.20 In. 16.26 Ac-ft 1,422,000

Peak discharge (base, 15,000 cfs).--Dec. 31 (8:30 a.m.) 28,800 cfs (16.31 ft).
* Discharge measurement made on this day.

Lemolo Reservoir near Toketee Falls, Oreg.

Location.--Lat 43°19'10", long 122°11'20", in SE¼NW¼ sec. 11, T. 26 S., R. 5 E., at Lemolo No. 1 diversion dam, 1.1 miles below Lake Creek and about 13 miles east of Toketee Falls.

Drainage area.--179 sq mi.

Records available.--July 1954 to September 1955.

Gage.--Reference mark on concrete intake structure; measurements to water surface made once daily. Reference mark is at elevation 4,155.42 ft above mean sea level (levels by The California Oregon Power Co).

Extremes.--Maximum contents observed during year, 13,560 acre-ft Aug. 5 (elevation, 4,148.5 ft); minimum observed, 11 acre-ft Mar. 5 (elevation, 4,055.4 ft).
1954-55: Maximum contents observed, that of Aug. 5, 1955; minimum observed since first filling, that of Mar. 5, 1955.

Remarks.--Reservoir is formed by Lemolo No. 1 diversion dam. Storage began July 15, 1954. Capacity, 12,520 acre-ft between minimum operating elevation at 4,097.0 ft and maximum operating elevation at 4,148.5 ft. Dead storage below 4,097.0 ft is 1,045 acre-ft. Water stored is used for generation of power at powerplants downstream.

Cooperation.--Gage readings furnished by The California Oregon Power Co.

Month-end elevation and contents, water year October 1954 to September 1954

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	4,134.0	8,230	-
Oct. 31	4,128.0	6,400	-1,830
Nov. 30	4,120.5	4,380	-2,020
Dec. 31	4,114.6	3,110	-1,270
Calendar year 1954	-	-	-
Jan. 31	4,080.4	277	-2,830
Feb. 28	4,063.6	47	-230
Mar. 31	4,076.7	191	+144
Apr. 30	4,074.4	151	-40
May 31	4,144.5	11,920	+11,770
June 30	4,144.3	11,850	-70
July 31	4,148.4	13,520	+1,670
Aug. 31	4,147.5	13,140	-380
Sept.30	4,147.3	13,060	-80
Water year 1954-55	-	-	+4,830

† Elevation at 12 p.m.

North Umpqua River below Lemolo Reservoir, near Toketee Falls, Oreg.

Location.--Lat 43°19'20", long 122°11'40", in NW¼NW¼ sec. 11, T. 26 S., R. 5 E., on right bank 1,900 ft downstream from Lemolo No. 1 diversion dam and 13 miles east of Toketee Falls. Prior to Sept. 26, 1955, at site 400 ft upstream.

Drainage area.--179 sq mi.

Records available.--October 1927 to September 1955. Prior to October 1952, published as North Umpqua River below Lake Creek and October 1952 to September 1953 published as North Umpqua River below Lake Creek, near Toketee Falls.

Gage.--Water-stage recorder. Altitude of gage is 4,025 ft (from river-profile map). Prior to July 15, 1954, at site about 1 mile upstream at datum about 65 ft higher. July 15, 1954 to Sept. 25, 1955, at site 400 ft upstream at datum 14.11 ft higher.

Average discharge.--27 years (1927-45, 1946-55), 401 cfs (290,300 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 912 cfs June 10; minimum daily, 9.7 cfs May 13. 1927-55: Maximum discharge, 1,190 cfs June 9, 1933 (gage height, 2.34 ft), from rating curve extended above 700 cfs; minimum daily, that of May 13, 1955.

Remarks.--Records good. Since July 15, 1954, flow has been regulated by storage in Lemolo Reservoir (see preceding page). Ordinarily regulation by Diamond Lake is slight but during October 1954 to January 1955, storage in the lake increased about 20,000 acre-ft as lake was allowed to fill after being lowered in the previous year for the purpose of killing trash fish. All records presented herein include flow in Lemolo No. 1 power canal which beginning July 7, 1955, has diverted 0.36 mile above station for power generation with return flow 4.3 miles downstream.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	456	424	402	366	339	416	420	416	585	501	396	336
2	447	420	398	366	334	416	420	416	580	416	403	288
3	447	420	402	366	334	393	420	420	570	416	*294	336
4	442	416	402	366	334	416	416	429	565	434	285	252
5	442	416	398	366	330	411	416	434	585	438	360	308
6	438	416	398	362	330	398	*411	447	640	438	393	359
7	*416	411	398	366	334	406	416	273	670	390	314	272
8	375	411	393	420	339	406	420	107	690	429	326	313
9	375	406	388	416	339	393	424	114	749	422	307	314
10	375	406	388	411	334	398	429	119	859	439	311	296
11	370	406	388	488	388	406	429	121	832	456	317	296
12	384	406	388	519	442	406	424	57	754	378	303	392
13	388	402	388	506	442	400	424	9.7	722	340	328	424
14	388	402	384	496	434	400	420	11	670	379	307	386
15	388	398	384	483	416	390	420	11	640	454	408	408
16	388	398	380	488	*429	370	416	56	625	377	420	387
17	388	393	375	478	420	380	416	136	600	395	416	472
18	388	393	370	456	411	390	411	112	630	375	433	231
19	393	393	370	434	420	390	406	168	670	315	364	360
20	388	388	366	326	420	390	411	205	635	416	20	354
21	388	388	366	370	406	390	411	254	595	*368	77	400
22	388	*388	366	366	411	400	416	528	595	324	422	415
23	388	388	366	352	411	429	424	*570	600	364	443	382
24	388	388	366	352	411	416	424	528	605	367	426	318
25	388	388	366	350	411	416	416	528	605	356	448	*245
26	388	388	366	350	406	416	416	532	605	334	441	418
27	407	388	362	350	411	416	411	542	*580	332	27	220
28	434	388	362	340	416	416	411	542	565	313	38	413
29	429	398	366	340	-	424	411	546	565	360	257	382
30	429	406	366	340	-------	424	411	570	555	258	311	384
31	424	-------	366	340	-------	420	-------	590	-------	430	302	-------
Total	12,527	12,033	11,778	12,329	10,862	12,542	12,520	9,791.7	19,141	12,014	9,897	10,361
Mean	404	401	380	398	388	405	417	316	638	388	319	345
Ac-ft	24,850	23,870	23,360	24,450	21,540	24,880	24,830	19,420	37,970	23,830	19,630	20,550

Adjusted for change in contents in Lemolo Reservoir

Mean	374	367	359	352	384	407	417	507	637	415	313	344
Cfsm	2.09	2.05	2.01	1.97	2.15	2.27	2.33	2.83	3.56	2.32	1.75	1.92
In.	2.41	2.29	2.31	2.26	2.23	2.62	2.60	3.27	3.97	2.67	2.02	2.14
Ac-ft	23,020	21,850	22,090	21,620	21,310	25,020	24,790	31,190	37,900	25,500	19,250	20,470

Observed

Calendar year 1954: Max 904 Min 258 Mean 512 Ac-ft 370,300
Water year 1954-55: Max 859 Min 9.7 Mean 399 Ac-ft 289,200

Adjusted

Calendar year 1954: Mean 516 Cfsm 2.88 In. 39.64 Ac-ft 373,400
Water year 1954-55: Mean 406 Cfsm 2.27 In. 30.79 Ac-ft 294,000

* Discharge measurement made on this day.

Clearwater River above Trap Creek, near Toketee Falls, Oreg.

Location.--Lat 43°14'40", long 122°17'10", in SE¼ sec. 1, T. 27 S., R. 4 E., on right bank 900 ft downstream from Clearwater No. 1 diversion dam, about 0.4 mile upstream from Trap Creek, and 8 miles east of Toketee Falls.

Drainage area.--41.6 sq mi.

Records available.--October 1927 to September 1955. Prior to October 1952, published as Clearwater River above Trap Creek.

Gage.--Water-stage recorder. Datum of gage is 3,862.84 ft above mean sea level (levels by The California Oregon Power Co.). Prior to Dec. 1, 1953, at site about 0.4 mile downstream at different datums.

Average discharge.--26 years (1928-45, 1946-55), 161 cfs (116,600 acre-ft per year).

Extremes.--Maximum discharge during year, 331 cfs June 9; minimum daily, 120 cfs Oct. 30. 1927-55: Maximum discharge, 487 cfs Oct. 29, 1950 (gage height, 2.28 ft), from rating curve extended above 290 cfs by logarithmic plotting; minimum daily, 91 cfs Nov. 4-6, 1932.

Remarks.--Records good. All records presented herein include flow in Clearwater No. 1 power canal, completed June 1953, which diverts 900 ft above station for generation of power and returns water to Clearwater River about 2½ miles below station.

Revisions.--WSP 1124: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	189	178	174	186	*174	167	172	176	241	210	175	154
2	190	178	175	180	174	167	170	176	241	206	174	154
3	189	178	176	176	173	166	170	178	245	204	*174	154
4	189	178	175	179	173	166	169	179	254	202	174	154
5	*190	178	177	179	173	165	169	183	269	200	173	154
6	191	178	181	177	173	166	*169	189	282	200	172	154
7	190	178	178	177	174	166	170	194	294	196	172	153
8	190	180	176	178	174	166	170	200	309	197	171	153
9	190	182	176	178	172	166	172	203	321	197	170	152
10	190	179	175	177	171	166	177	208	319	195	170	152
11	191	179	174	175	170	166	176	215	308	195	170	152
12	193	182	174	175	170	167	177	223	274	196	170	156
13	193	179	176	176	170	166	178	221	283	198	170	156
14	191	183	175	175	170	166	177	217	269	198	152	164
15	192	183	175	177	170	164	175	212	256	197	164	158
16	192	183	175	176	170	165	176	209	245	195	162	163
17	192	179	175	176	169	165	175	210	240	192	162	158
18	192	178	175	176	167	165	175	214	238	188	161	155
19	198	179	175	175	166	164	174	228	239	186	162	152
20	191	178	175	175	166	163	174	249	239	186	162	151
21	192	176	175	175	166	164	176	256	240	186	161	151
22	193	*175	176	175	167	165	179	253	238	184	159	151
23	192	174	178	175	166	166	178	248	231	182	159	151
24	192	175	179	174	166	166	176	*245	220	181	159	151
25	191	176	178	174	166	167	176	241	221	180	159	151
26	191	174	176	174	166	166	177	238	219	180	158	150
27	191	174	175	174	166	166	174	236	*217	180	156	149
28	191	174	178	174	166	171	175	239	229	178	156	151
29	162	174	179	174	-	176	176	249	219	178	155	149
30	120	173	187	175	------	172	176	255	212	176	155	149
31	157	-----	194	175	-----	170	-----	247	------	175	155	------
Total	5,795	5,335	5,487	5,462	4,748	5,161	5,228	6,791	7,612	5,918	5,092	4,602
Mean	187	178	177	176	170	166	174	219	254	191	164	153
Cfsm	4.50	4.28	4.25	4.23	4.09	3.99	4.18	5.26	6.11	4.59	3.94	3.68
In.	5.18	4.77	4.91	4.88	4.24	4.61	4.67	6.07	6.81	5.29	4.55	4.11
Ac-ft	11,490	10,580	10,880	10,830	9,420	10,240	10,370	13,470	15,100	11,740	10,100	9,130

Calendar year 1954: Max 331 Min 120 Mean 221 Cfsm 5.31 In. 71.97 Ac-ft 159,700
Water year 1954-55: Max 321 Min 120 Mean 184 Cfsm 4.42 In. 60.09 Ac-ft 133,400

Peak discharge (base, 220 cfs).--June 9 (10 a.m.) 331 cfs.
* Discharge measurement made on this day.

Fish Creek at Big Camas ranger station, near Toketee Falls, 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, three-quarters of a mile east of Big Camas ranger station, and 3½ miles south of Toketee Falls.

Drainage area.--67 sq mi, approximately.

Records available.--October 1947 to September 1955. Prior to October 1952, published as Fish Creek at Big Camas ranger station.

Gage.--Water-stage recorder. Datum of gage is 2,860.44 ft above mean sea level, datum of 1929 (surveys by The 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.--8 years, 253 cfs (183,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,030 cfs June 9; minimum daily, 48 cfs Sept. 30, 1947-55: Maximum discharge, 5,160 cfs Jan. 18, 1953 (gage height, 7.17 ft), from rating curve extended above 700 cfs on basis of contracted-opening determination at 3,740 cfs (no flow in canal); minimum daily, 35 cfs Nov. 27, 1952.

Remarks.--Records good. All records presented herein include flow in Fish Creek power canal (completed in June 1952) 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 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	49	50	273	93	76	246	222	413	230	87	54
2	54	49	52	183	*87	73	228	232	412	220	86	54
3	54	48	50	142	84	68	212	239	449	207	84	53
4	54	48	50	126	81	66	196	263	533	195	*80	52
5	53	48	54	106	78	66	184	322	631	188	78	52
6	*52	48	90	99	77	66	*182	423	699	183	77	51
7	53	48	66	93	84	68	193	492	781	173	74	50
8	53	52	59	87	104	74	228	548	869	171	75	50
9	52	58	59	82	116	78	297	537	930	167	72	50
10	52	51	55	76	110	84	380	544	868	162	71	50
11	54	54	54	73	103	101	342	618	761	159	70	50
12	56	71	54	70	99	111	325	667	682	157	68	49
13	57	58	63	73	95	107	347	575	566	157	69	61
14	53	81	59	73	93	99	310	491	495	155	68	102
15	52	88	59	68	93	93	273	426	433	150	66	78
16	49	99	55	66	99	88	259	371	388	146	66	132
17	57	98	54	64	110	86	242	353	361	138	64	86
18	50	74	54	65	110	85	223	413	354	130	64	67
19	80	84	56	62	104	83	213	591	345	125	62	60
20	63	75	57	62	98	79	208	809	350	121	62	56
21	59	68	59	62	92	77	218	753	349	117	61	56
22	65	62	60	66	88	80	263	632	341	112	60	54
23	60	*60	78	66	83	86	261	553	309	108	59	53
24	58	58	84	65	83	103	255	*502	282	106	59	51
25	54	60	74	66	79	117	255	470	266	102	60	51
26	53	58	69	65	78	129	246	438	262	112	58	49
27	53	57	68	66	73	146	224	412	247	115	57	49
28	50	54	67	65	73	239	217	436	*305	100	57	51
29	50	50	65	66	-	351	217	516	277	97	56	49
30	50	50	185	80	------	296	217	540	241	95	54	48
31	50	-----	415	93	-----	254	-----	463	------	91	54	------
Total	1,705	1,848	2,374	2,703	2,567	3,529	7,461	14,851	14,199	4,489	2,078	1,768
Mean	55.0	61.6	76.6	87.2	91.7	114	249	479	473	145	67.0	58.9
Cfsm	0.821	0.919	1.14	1.30	1.37	1.70	3.72	7.15	7.06	2.16	1.00	0.879
In.	0.95	1.03	1.32	1.50	1.42	1.96	4.14	8.24	7.88	2.49	1.15	0.98
Ac-ft	3,380	3,670	4,710	5,360	5,090	7,000	14,800	29,460	28,160	8,900	4,120	3,510

Calendar year 1954: Max 705 Min 48 Mean 214 Cfsm 3.19 In. 43.46 Ac-ft 155,200
Water year 1954-55: Max 930 Min 48 Mean 163 Cfsm 2.43 In. 33.06 Ac-ft 118,200

Peak discharge (base, 900 cfs).--June 9 (8 p.m.) 1,030 cfs.
* Discharge measurement made on this day.

North Umpqua River above Copeland Creek, near Toketee Falls, 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 4 3/4 miles west of Toketee Falls.

Drainage area.--471 sq mi.

Records available.--September 1949 to September 1955. Prior to October 1952, published as North Umpqua River above Copeland Creek.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from river-profile map).

Average discharge.--6 years, 1,647 cfs (1,192,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,830 cfs June 10 (gage height, 6.15 ft); minimum daily, 570 cfs Sept. 5.
1949-55: Maximum discharge, 14,100 cfs Jan. 18, 1953 (gage height, 12.23 ft), from rating curve extended above 3,000 cfs on basis of slope-area determination at gage height 11.30 ft; minimum daily, that of Sept. 5, 1955.

Remarks.--Records good. No diversion above station. Regulation by powerplants upstream: slightly regulated by Diamond Lake and by storage in Lemolo Reservoir (see p. 228).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.5	530
3.0	830
5.0	2,570
6.0	3,650

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	879	830	823	1,610	1,140	1,030	1,700	1,430	2,120	1,540	851	865
2	830	865	858	1,110	*1,030	1,060	1,600	1,540	2,100	1,260	991	809
3	640	858	844	1,160	921	1,040	1,250	1,630	2,170	1,090	956	682
4	893	830	700	949	900	928	1,360	1,710	2,270	1,080	*970	622
5	865	718	670	1,060	907	802	1,400	1,860	2,470	1,330	872	570
6	*949	706	998	907	754	616	*1,360	1,990	2,740	1,300	724	879
7	886	718	900	865	984	1,060	1,450	2,290	3,080	1,140	900	970
8	886	879	851	781	1,340	1,050	1,580	2,220	3,340	1,150	956	865
9	706	837	816	788	1,300	1,050	1,750	2,060	3,470	1,020	942	718
10	640	823	844	963	1,140	1,130	2,030	2,120	3,530	1,010	830	640
11	809	893	748	914	1,060	1,260	1,760	2,330	3,320	1,210	879	640
12	879	886	688	900	1,040	1,070	1,910	2,550	2,950	1,210	830	830
13	900	760	872	1,100	1,010	886	1,940	2,370	2,700	1,210	774	949
14	872	823	893	970	1,180	1,180	1,910	1,780	2,390	1,180	816	900
15	858	844	907	802	1,140	1,110	1,740	1,510	2,180	1,240	921	984
16	688	984	830	942	1,140	1,070	1,450	1,480	2,080	970	977	942
17	670	907	816	1,030	1,210	1,010	1,390	1,460	1,990	900	977	760
18	837	907	694	984	1,200	956	1,500	1,750	1,990	1,150	949	700
19	893	893	760	949	970	879	1,530	2,190	1,860	1,140	802	816
20	949	706	809	914	872	802	1,480	2,860	1,760	1,070	622	802
21	865	748	760	748	1,060	1,040	1,570	2,810	1,910	1,030	598	830
22	879	886	781	706	1,100	1,020	1,750	2,670	1,880	1,080	816	816
23	754	*907	830	914	1,020	1,140	1,760	2,610	1,820	781	921	724
24	676	837	872	921	1,020	1,330	1,770	*2,320	1,680	767	949	628
25	879	688	872	921	977	1,550	1,620	2,270	1,600	928	956	580
26	809	844	795	949	935	1,450	1,630	2,190	1,410	963	837	742
27	830	670	816	942	700	1,260	1,590	2,160	1,560	991	640	802
28	851	802	774	879	963	1,950	1,500	2,170	*1,640	998	652	730
29	914	760	795	802	-	2,210	1,380	2,250	1,680	935	788	742
30	742	760	1,230	942	------	1,990	1,370	2,390	1,720	949	664	694
31	738	-----	2,170	1,140	-----	1,720	-----	2,270	------	788	700	------
Total	25,466	24,569	27,016	29,562	29,013	36,649	48,030	65,240	67,410	33,410	26,060	23,231
Mean	821	819	871	954	1,036	1,182	1,601	2,105	2,247	1,078	841	774
Cfsm	1.74	1.74	1.85	2.03	2.20	2.51	3.40	4.47	4.77	2.29	1.79	1.64
In.	2.01	1.94	2.13	2.33	2.29	2.89	3.79	5.15	5.32	2.64	2.06	1.83
Ac-ft	50,510	48,730	53,590	58,640	57,550	72,690	95,270	129,400	133,700	66,270	51,690	46,080

Calendar year 1954: Max 3,090 Min 640 Mean 1,487 Cfsm 3.16 In. 42.86 Ac-ft 1,076,000
Water year 1954-55: Max 3,530 Min 570 Mean 1,194 Cfsm 2.54 In. 34.38 Ac-ft 864,100

* Discharge measurement made on this day.

Little River at Peel, Oreg.

Location.--Lat 43°15'10", long 123°01'30", in NW¼ sec. 2, T. 27 S., R. 3 W., on left bank 0.6 mile southeast of Peel and 0.8 mile downstream from Cavitt Creek.

Drainage area.--177 sq mi.

Records available.--August 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 828.33 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 8,340 cfs Dec. 30 (gage height, 11.72 ft), from rating curve extended as explained below; minimum, 17 cfs Sept. 12 (gage height, 1.83 ft). 1954-55: Maximum discharge, that of Dec. 30, 1954; minimum, that of Sept. 12, 1955. Maximum discharge known, 22,700 cfs Nov. 22, 23, 1953 (gage height, 20.6 ft, from floodmark), from rating curve extended above 2,600 cfs on basis of slope-area determination at gage height 16.55 ft.

Remarks.--Records excellent. No regulation above station. Small diversions above station for irrigation and water supply.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 29				Dec. 30 to Sept. 30			
1.8	19	2.8	192	1.8	15	4.0	680
2.1	46	3.5	440	2.1	42	5.0	1,280
2.4	94	4.0	680	2.4	88	7.0	3,000
				2.8	190	9.0	5,100
				3.5	440		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	32	44	2,500	755	378	1,060	1,110	340	116	41	21
2	25	31	44	1,350	580	842	950	920	328	111	40	21
3	25	30	44	820	472	555	820	795	356	107	38	21
4	25	29	43	605	412	416	725	780	400	94	36	20
5	25	28	59	505	416	344	640	914	448	88	35	19
6	25	28	462	428	464	302	610	998	468	88	34	18
7	25	28	*285	360	780	340	655	944	480	83	32	18
8	26	30	184	316	1,390	555	*690	932	490	81	31	18
9	26	34	161	340	1,450	530	780	780	480	79	31	18
10	25	33	154	340	890	485	920	730	460	75	31	18
11	28	35	124	302	680	690	920	810	384	70	31	18
12	35	161	133	268	560	655	1,200	810	328	67	31	18
13	54	92	476	306	490	580	1,810	670	285	64	30	22
14	42	102	352	310	440	515	1,320	650	244	61	30	94
15	33	216	278	360	400	452	1,000	720	211	60	29	60
16	31	302	222	448	408	404	980	660	187	61	29	131
17	33	192	184	392	436	360	1,040	675	172	61	29	111
18	31	136	159	336	380	348	848	725	163	56	*27	64
19	90	117	143	285	328	336	790	878	157	55	26	48
20	86	120	129	254	296	313	1,200	992	146	54	25	40
21	58	94	120	356	264	288	1,650	830	138	51	23	34
22	102	79	111	795	247	541	1,750	705	133	50	22	31
23	70	69	117	810	229	1,910	1,380	605	138	48	22	29
24	55	61	175	715	241	2,970	1,200	550	128	47	22	28
25	46	67	170	675	247	2,160	992	*500	111	47	22	27
26	*43	72	143	545	247	1,560	1,030	468	109	50	22	26
27	38	59	126	500	241	1,350	890	436	105	56	22	25
28	36	54	131	490	229	2,040	932	424	126	50	22	28
29	35	50	237	472	-	2,400	1,230	460	*155	46	21	27
30	34	47	3,690	655	-------	1,570	1,280	464	119	43	21	26
31	32	-------	4,020	*795	-------	1,120	-------	400	-------	42	21	-------
Total	1,264	2,428	12,720	17,633	13,972	27,309	31,292	22,335	7,789	2,061	876	1,079
Mean	40.8	80.9	410	569	499	881	1,043	720	260	66.5	28.3	36.0
Cfsm	0.231	0.457	2.32	3.21	2.82	4.98	5.89	4.07	1.47	0.376	0.160	0.203
In.	0.27	0.51	2.67	3.70	2.94	5.74	6.57	4.69	1.64	0.43	0.18	0.23
Ac-ft	2,510	4,820	25,230	34,970	27,710	54,170	62,070	44,300	15,450	4,090	1,740	2,140

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 4,020 Min 18 Mean 386 Cfsm 2.18 In. 29.57 Ac-ft 279,200

Peak discharge (base, 6,000 cfs).--Dec. 30 (10:30 p.m.) 8,340 cfs (11.72 ft).
* Discharge measurement made on this day.

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North Umpqua River at Winchester, Oreg.

Location.--Lat 43°16'20", long 123°24'40", in NE¼NE¼ sec. 33, T. 26 S., R. 6 W., on right bank 1.8 miles upstream from confluence with South Umpqua River and 3 miles west of Winchester.

Drainage area.--1,350 sq mi, approximately.

Records available.--November 1908 to December 1913, October 1923 to September 1929, August 1954 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 370 ft (from river-profile map). Nov. 10, 1908, to Dec. 31, 1913, and Oct. 1, 1923, to Sept. 30, 1929, staff gage at site 4.8 miles upstream at different datums (datum raised 0.74 ft for the 1923-29 period).

Average discharge.--11 years (1909-13, 1923-29, 1954-55), 3,263 cfs (2,362,000 acre-ft per year).

Extremes.--Maximum discharge during year, 38,100 cfs Dec. 31 (gage height, 15.03 ft); minimum, 613 cfs Sept. 12; minimum daily, 708 cfs Sept. 26.
1908-13, 1923-29, 1954-55: Maximum discharge, 100,000 cfs Nov. 23, 1909 (gage height, 28.1 ft, site and datum then in use), from rating curve extended above 42,000 cfs by logarithmic plotting; minimum, 590 cfs Oct. 22, 23, 1925.

Remarks.--Records excellent except those for period of shifting control, which are good. Small diversions above station for irrigation. Some regulation by powerplants upstream. Flow slightly affected by storage in Lemolo Reservoir (see p. 228) and Diamond Lake.

Reivisions (water years).--WSP 1348: 1910(M).

Rating table, water year 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.9	655	4.0	3,150
2.0	730	5.0	5,100
2.5	1,170	7.0	10,200
3.0	1,730	12.0	27,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	874	980	18,600	6,160	2,560	8,120	6,930	3,690	2,390	1,100	834
2	935	944	1,020	10,900	4,860	6,330	7,680	6,240	3,470	2,110	1,160	998
3	908	980	1,030	6,000	*3,710	4,660	6,260	5,500	3,470	1,880	1,290	980
4	762	971	1,020	4,460	3,240	3,400	5,430	5,300	3,810	1,660	1,240	842
5	980	926	944	3,870	3,040	2,830	5,010	5,950	4,340	1,710	1,260	786
6	962	842	1,730	3,340	3,090	2,390	4,640	6,930	4,660	1,890	1,160	722
7	1,030	828	*2,700	2,780	4,140	2,280	4,990	6,960	5,230	1,780	1,020	1,020
8	980	874	1,800	2,460	7,530	3,490	*5,560	7,240	5,640	1,670	1,190	1,140
9	980	989	1,610	2,430	11,800	3,870	6,020	6,140	5,920	1,630	1,230	1,040
10	842	944	1,530	2,460	6,960	3,690	7,760	5,590	6,000	1,530	1,200	858
11	730	962	1,440	2,460	5,030	5,120	6,880	6,140	5,360	1,540	1,090	794
12	962	1,190	1,270	2,220	4,140	5,230	7,760	6,670	4,810	1,670	1,120	786
13	1,090	1,320	2,310	2,290	3,670	4,900	13,000	6,000	4,300	1,670	1,090	980
14	1,110	1,070	2,910	2,580	3,420	4,550	9,920	4,990	3,810	1,660	1,050	1,250
15	1,020	1,550	2,360	2,880	3,440	4,040	7,530	4,680	3,420	1,630	1,060	1,360
16	971	2,120	2,240	3,910	3,290	3,490	6,450	4,140	3,100	1,650	1,170	1,410
17	826	2,170	1,810	3,630	3,470	3,180	6,860	4,080	3,010	1,400	1,210	1,790
18	818	1,850	1,600	3,040	3,240	2,970	6,020	4,420	2,880	1,320	1,210	1,160
19	1,020	1,530	1,440	2,590	2,860	2,890	5,660	5,660	2,890	1,560	1,180	962
20	1,420	1,570	1,480	2,330	2,490	2,680	7,020	7,550	2,620	1,530	*998	989
21	1,270	1,300	1,450	2,520	2,280	2,500	9,640	7,240	2,600	1,420	818	962
22	1,220	1,200	1,390	3,780	2,360	3,150	11,200	6,070	2,710	1,390	802	953
23	1,300	1,250	1,390	4,790	2,310	8,490	9,920	5,470	2,720	1,420	998	953
24	1,060	1,200	1,630	4,300	2,140	14,400	8,510	4,840	2,540	1,110	1,110	858
25	935	1,110	1,930	4,060	2,360	11,800	6,980	*4,460	2,380	1,110	1,160	738
26	*1,070	1,020	1,780	3,780	2,250	9,780	6,790	4,220	2,260	1,260	1,130	708
27	980	1,120	1,510	3,490	2,320	8,330	6,040	3,980	2,150	1,340	1,020	826
28	980	935	1,490	3,440	2,040	10,800	5,710	3,830	2,330	1,390	802	935
29	998	1,020	1,610	3,300	-	14,200	6,760	4,020	*2,540	1,320	842	866
30	1,020	962	10,800	3,490	------	11,600	7,240	4,440	2,530	1,260	874	866
31	882	------	27,000	5,210	------	8,620	------	4,140	------	1,250	866	------
Total	31,181	35,619	85,204	127,390	107,640	178,220	217,370	169,820	107,190	48,150	33,450	29,366
Mean	1,006	1,187	2,749	4,108	3,844	5,749	7,246	5,478	3,573	1,553	1,079	979
Ac-ft	61,850	70,650	169,000	252,700	213,500	353,500	431,100	336,800	212,600	95,500	66,350	58,250

Calendar year 1954: Max - Min - Mean - Ac-ft -
Water year 1954-55: Max 27,000 Min 708 Mean 3,207 Ac-ft 2,322,000

Peak discharge (base, 20,000 cfs).--Dec. 31 (3:30 a.m.) 38,100 cfs (15.03 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used June 15 to Sept. 15.

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 1955 (incomplete 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.--50 years, 7,297 cfs (5,283,000 acre-ft per year).

Extremes.--Maximum discharge during year, 60,400 cfs Dec. 31 (gage height, 19.8 ft, from floodmark); minimum, 851 cfs Sept. 7.
1905-55: 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. Some diversions for irrigation from streams in South Umpqua River basin, but flow probably only slightly affected. Powerplants on North Umpqua River ordinarily do not affect discharge at this station.

Revisions (water years).--WSP 1184: 1927(M), 1938(M), 1943(M), 1946(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss Oct. 26 to Nov. 15, Aug. 18 to Sept. 30)

1.0	770	6.0	8,500
1.5	1,250	10.0	20,200
2.0	1,780	15.0	38,800
4.0	4,540	18.0	52,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,470	1,350	1,470	38,500	11,300	5,370	17,700	14,100	5,920	3,150	1,400	970
2	1,450	1,300	1,480	31,200	12,400	10,600	16,800	13,700	5,480	3,080	1,370	950
3	1,400	1,270	1,540	22,200	9,770	14,600	14,100	12,700	5,140	2,930	1,350	a1,100
4	1,350	1,260	1,550	11,900	8,520	10,500	11,900	10,600	5,420	2,790	1,370	a1,100
5	1,370	1,220	1,540	9,820	7,340	7,850	10,500	9,900	5,810	2,670	1,390	a1,000
6	1,380	1,210	2,200	8,950	7,190	6,540	9,800	9,870	*6,240	2,500	1,380	a900
7	1,410	1,250	6,320	7,600	7,820	5,900	9,150	11,300	6,900	2,330	1,390	*851
8	1,440	1,280	6,730	6,360	13,300	5,370	9,330	11,600	7,430	2,230	1,410	a1,000
9	1,460	*1,220	5,920	5,750	22,500	7,600	9,720	11,500	7,980	2,160	1,380	a1,200
10	1,450	1,200	4,220	5,590	18,000	7,560	10,800	11,200	7,850	2,110	1,350	a1,100
11	1,480	1,210	4,060	5,280	13,200	7,510	12,600	10,300	7,540	2,050	1,330	a1,000
12	1,470	1,240	3,020	5,000	10,500	9,300	13,400	9,800	6,960	2,080	1,280	941
13	1,400	1,380	*3,590	4,750	8,620	9,560	20,900	9,460	5,940	2,050	1,250	1,010
14	1,380	1,860	6,320	5,190	7,600	9,510	20,100	9,000	5,460	1,990	1,250	1,140
15	1,360	2,330	6,360	5,690	7,020	*9,250	11,400	8,380	5,240	1,990	1,320	1,340
16	1,340	3,330	5,090	10,900	6,620	8,100	12,500	7,580	5,020	2,010	1,370	1,540
17	1,340	5,440	4,440	13,600	6,460	7,210	15,000	7,580	4,320	1,980	1,340	1,780
18	1,310	4,060	3,760	10,200	6,540	6,560	*13,500	7,870	3,880	1,960	1,270	1,920
19	1,250	3,190	3,330	8,450	6,000	6,080	13,200	8,400	3,680	1,930	1,210	2,200
20	a1,500	2,680	2,940	7,090	5,260	5,750	13,200	9,100	3,400	*1,920	1,140	1,960
21	a1,900	2,160	2,810	6,320	4,840	5,300	19,800	10,200	3,170	1,860	1,070	1,560
22	a1,800	2,110	2,880	7,890	4,520	5,750	23,900	9,980	2,990	1,820	1,030	1,120
23	a1,700	2,070	2,900	11,700	4,410	12,900	21,800	9,330	2,900	1,780	1,020	1,010
24	a1,800	1,960	2,640	11,300	4,270	26,100	18,000	8,240	2,820	1,690	1,070	1,140
25	a1,700	1,890	2,680	*9,740	4,190	28,900	15,500	7,340	2,790	1,560	1,150	1,120
26	1,670	1,740	3,840	8,950	4,520	22,300	14,200	6,620	2,880	1,430	1,120	1,030
27	1,590	1,630	3,620	8,170	4,650	18,000	12,400	6,380	2,970	1,450	1,080	990
28	1,490	1,550	3,270	7,190	5,120	16,400	12,500	6,220	3,090	1,600	1,030	1,090
29	1,440	1,530	3,190	6,810	-	24,500	13,500	6,060	3,170	1,620	1,000	1,150
30	1,420	1,490	14,000	6,650	------	27,900	14,500	6,000	3,260	1,550	950	1,130
31	1,400	-----	49,900	7,870	-----	21,800	-----	6,320	------	1,490	980	------
Total	45,920	57,410	167,610	316,610	232,480	370,570	431,700	286,630	145,650	63,740	38,050	36,342
Mean	1,481	1,914	5,407	10,210	8,303	11,950	14,390	9,246	4,855	2,056	1,227	1,211
Cfsm	0.402	0.520	1.47	2.77	2.26	3.25	3.91	2.51	1.32	0.559	0.333	0.329
In.	0.46	0.58	1.69	3.20	2.35	3.74	4.36	2.90	1.47	0.64	0.38	0.37
Ac-ft	91,080	113,900	332,400	628,000	461,100	735,000	856,300	568,500	288,900	126,400	75,470	72,080

Calendar year 1954: Max 90,200 Min 1,200 Mean 7,350 Cfsm 2.00 In. 27.09 Ac-ft 5,321,000
Water year 1954-55: Max 49,900 Min 851 Mean 6,007 Cfsm 1.63 In. 22.14 Ac-ft 4,349,000

Peak discharge (base, 52,000 cfs).--Dec. 31 (about 6 p.m.) 60,400 cfs (19.8 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for South Umpqua River near Brockway and North Umpqua River at Winchester.

West Fork Millicoma River near Allegany, Oreg.

Location.--Lat 43°28'35", long 124°03'20", in SW¼NW¼ sec. 19, T. 24 S., R. 11 W., on left bank at county road bridge, 3¾ miles north of Allegany.

Drainage area.--46.5 sq mi.

Records available.--September 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 76.95 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 13,800 cfs Dec. 30 (gage height, 15.70 ft), from rating curve extended above 1,000 cfs on basis of slope-area determination of peak flow; minimum, 2.6 cfs Sept. 12, 13 (gage height, 2.37 ft).
The flood in January or November 1953 reached a stage of about 17.9 ft, from information furnished by local resident.

Remarks.--Records good. Only minor diversions for irrigation above station.

Discharge, in cubic feet per second, 1954

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 1	*33	Sept. 9	15	Sept. 17	80	Sept. 25	25
2	25	10	18	18	70	26	23
3	22	11	30	19	55	27	20
4	18	12	134	20	43	28	20
5	17	13	85	21	38	29	20
6	15	14	56	22	34	30	18
7	16	15	56	23	32		
8	16	16	67	24	29		

Total	1,130
Mean	37.7
Cubic feet per second per square mile	0.811
Runoff in inches	0.90
Runoff in acre-feet	2,240

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	42	88	2,490	404	2,580	700	205	36	31	14	3.8
2	14	40	82	1,280	384	1,920	725	170	33	34	14	3.8
3	14	38	79	890	356	802	715	147	32	29	14	3.8
4	14	35	73	555	316	505	575	125	32	23	13	3.8
5	13	35	177	605	356	356	416	110	31	21	12	3.5
6	14	47	1,240	550	368	260	304	99	29	19	11	3.5
7	18	51	1,030	400	595	218	*236	90	26	18	11	3.2
8	20	55	*615	324	1,180	195	190	84	24	19	10	3.2
9	18	68	545	280	1,020	180	180	76	22	20	9.6	2.9
10	19	60	530	236	600	170	192	70	22	21	8.5	2.9
11	29	78	376	205	*400	210	555	67	22	19	8.0	2.9
12	63	149	300	*185	288	495	1,150	66	21	18	7.5	2.9
13	104	134	530	245	233	625	1,550	66	20	17	7.0	7.5
14	*70	452	550	266	190	585	785	72	20	16	6.5	17
15	51	970	535	388	163	432	500	80	19	14	6.5	20
16	42	1,010	416	952	140	328	560	72	19	18	6.1	34
17	43	1,830	292	946	125	254	630	70	18	19	6.1	33
18	39	720	218	595	115	212	450	64	18	19	6.1	20
19	108	420	180	420	104	182	416	57	18	17	*6.1	15
20	117	266	149	348	97	160	670	55	18	15	6.1	12
21	481	202	127	380	88	142	695	51	17	14	5.7	11
22	540	163	117	570	87	876	695	47	16	14	5.3	9.1
23	280	134	136	455	82	1,360	610	46	17	13	4.9	7.5
24	178	113	242	336	100	2,120	436	43	18	12	4.5	6.5
25	123	156	316	266	160	1,100	*332	42	18	12	4.1	6.1
26	99	147	280	218	185	665	360	*43	18	18	3.8	5.7
27	80	132	239	185	248	445	364	43	17	32	3.8	7.0
28	67	115	218	160	601	360	312	40	22	26	3.5	11
29	59	106	420	140	-	715	308	36	28	20	3.5	14
30	53	97	*7,300	136	------	922	245	39	*25	18	3.5	11
31	44	-----	4,240	192	-----	675	-----	40	------	16	3.8	------
Total	2,830	7,863	21,640	15,098	8,985	20,049	15,836	2,315	676	602	229.5	287.6
Mean	91.3	262	698	487	321	647	528	74.7	22.5	19.4	7.40	9.59
Cfsm	1.96	5.63	15.0	10.5	6.90	13.9	11.4	1.61	0.484	0.417	0.159	0.206
In.	2.26	6.29	17.31	12.08	7.19	16.03	12.67	1.85	0.54	0.48	0.18	0.23
Ac-ft	5,610	15,600	42,920	29,950	17,820	39,770	31,410	4,590	1,340	1,190	455	570

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 7,300 Min 2.9 Mean 264 Cfsm 5.68 In. 77.11 Ac-ft 191,200

Peak discharge (base, 3,000 cfs).--Dec. 30 (8:30 p.m.) 13,800 cfs (15.70 ft); Mar. 2 (12:30 a.m.) 3,320 cfs (8.33 ft).

* Discharge measurement made on this day.

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 1955.

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.--36 years (1916-26, 1929-55), 752 cfs (544,400 acre-ft per year).

Extremes.--Maximum discharge during year, 9,600 cfs Dec. 31 (gage height, 10.35 ft); minimum, 16 cfs Sept. 9.
1916-26, 1928-55: 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. Small diversions for irrigation above station; no regulation.

Revisions (water years).--WSP 1184: 1946(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 1				Mar. 2 to Sept. 30			
1.1	30	3.0	610	0.9	13	2.5	430
1.3	57	4.0	1,240	1.0	22	3.0	670
1.5	91	6.0	3,200	1.2	48	4.0	1,260
2.0	213	9.0	7,400	1.5	104	5.0	2,110
2.5	390			2.0	239	7.0	4,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	84	226	5,030	1,490	2,260	1,810	1,130	233	91	44	22
2	34	78	219	3,270	1,230	3,700	1,560	1,030	217	87	42	22
3	34	75	210	2,000	1,020	1,720	1,330	928	208	83	41	21
4	33	73	198	1,390	882	1,130	1,130	898	205	81	40	21
5	31	71	845	1,220	840	886	994	934	202	79	38	21
6	33	73	3,530	1,030	828	760	898	988	191	77	37	20
7	56	75	2,550	846	948	765	*874	928	179	74	35	19
8	75	109	*1,570	738	1,520	868	868	844	168	72	34	19
9	56	160	2,510	732	2,200	868	896	735	160	70	34	18
10	49	124	1,750	*650	*1,470	820	994	670	155	68	34	19
11	46	138	1,220	575	1,110	820	1,050	665	152	66	34	20
12	51	318	1,160	515	894	1,110	1,660	630	147	64	33	19
13	71	273	2,350	615	768	1,270	2,780	555	140	62	33	20
14	*70	2,140	2,050	600	690	1,160	1,760	530	132	61	32	27
15	60	4,180	1,660	1,170	640	982	1,300	585	127	59	32	48
16	56	2,940	1,330	1,710	650	856	1,260	605	120	61	30	138
17	71	1,950	1,040	1,420	684	760	1,320	620	113	61	30	113
18	71	1,240	852	1,360	600	710	1,180	580	111	58	*29	66
19	485	1,230	726	1,460	520	660	1,340	580	106	53	29	48
20	362	948	666	1,090	470	595	1,860	575	104	51	28	41
21	290	720	635	1,020	426	555	2,190	505	100	50	27	37
22	580	565	615	1,350	390	630	2,010	442	96	48	23	34
23	358	470	678	1,300	354	1,860	1,640	394	104	48	22	32
24	259	406	974	1,170	362	2,610	1,390	358	104	48	23	29
25	201	390	948	1,110	402	2,010	1,240	334	98	48	23	26
26	160	350	834	967	450	1,600	1,450	*318	96	48	23	22
27	135	312	690	876	520	1,460	1,270	295	94	58	23	23
28	120	284	615	816	605	1,580	1,120	270	96	53	22	25
29	107	262	630	774	-	3,000	1,160	263	102	48	22	28
30	95	245	3,190	918	------	2,610	1,150	270	*91	47	22	25
31	89	-----	6,440	1,280	-----	1,940	-----	259	-----	45	23	------
Total	4,173	20,283	42,911	39,002	22,963	42,555	41,486	18,718	4,151	1,919	942	1,023
Mean	135	676	1,384	1,258	820	1,373	1,383	604	138	61.9	30.4	34.1
Cfsm	0.799	4.00	8.19	7.44	4.85	8.12	8.18	3.57	0.817	0.366	0.180	0.202
In.	0.92	4.46	9.44	8.58	5.05	9.36	9.13	4.12	0.91	0.42	0.21	0.23
Ac-ft	8,280	40,230	85,110	77,360	45,550	84,410	82,290	37,130	8,230	3,810	1,870	2,030

Calendar year 1954: Max 11,300 Min 31 Mean 840 Cfsm 4.97 In. 67.50 Ac-ft 608,400
Water year 1954-55: Max 6,440 Min 18 Mean 658 Cfsm 3.89 In. 52.83 Ac-ft 476,300

Peak discharge (base, 8,000 cfs).--Dec. 31 (1 a.m.) 9,600 cfs (10.35 ft).
* Discharge measurement made on this day.

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 The California Oregon Power Co., 2 miles northwest of Prospect, 3 miles upstream from Mill Creek, and at mile 169.7 (river-profile survey).

Drainage area.--332 sq mi.

Records available.--January 1908 to February 1912 (incomplete), October 1923 to September 1955. Published as "near Prospect" 1924-25, and as North Fork Rogue River at or near Prospect 1908-9, 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.--33 years (1910-11, 1923-55), 777 cfs (562,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,780 cfs May 21 (gage height, 4.05 ft); minimum, 375 cfs Sept. 13.
1908-12, 1923-55: Maximum discharge, 11,900 cfs Dec. 28, 1945 (gage height, 8.4 ft, from floodmark), from rating curve extended above 5,000 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.

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

Cooperation.--Water-stage-recorder graph furnished by The California Oregon Power Co.

Revisions (water years).--WSP 1248: 1925, 1927(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 29		Mar. 30 to Sept. 30			
1.6	445	1.5	380	3.0	1,460
2.0	670	2.0	660	4.0	2,700
3.0	1,560	2.5	1,000		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	522	511	494	980	577	516	944	780	1,310	714	460	390
2	522	*506	506	784	550	511	878	815	1,330	708	455	390
3	522	506	500	640	533	494	808	857	1,430	702	450	390
4	522	500	500	588	528	489	756	960	1,540	672	450	390
5	522	494	506	604	533	467	726	1,160	1,810	*654	445	385
6	522	500	610	538	528	489	732	1,440	1,910	642	445	380
7	528	500	555	528	566	511	794	1,660	2,010	624	440	380
8	528	511	528	566	604	538	913	1,810	2,120	612	440	380
9	528	528	528	555	610	560	1,050	1,710	2,240	612	440	380
10	528	516	516	538	577	566	1,090	1,740	2,240	600	435	380
11	528	516	500	516	572	594	1,000	1,950	1,970	588	430	380
12	533	582	511	518	566	599	*936	2,020	1,820	576	430	380
13	550	528	533	522	560	588	992	1,740	1,590	570	430	390
14	522	582	516	511	550	566	936	1,440	1,390	564	430	582
15	522	628	506	516	550	533	864	1,240	1,220	558	425	455
16	522	684	494	516	566	533	822	1,120	1,120	546	420	576
17	538	604	494	511	599	533	787	1,080	1,060	546	415	470
18	528	566	500	500	577	538	762	1,280	1,020	528	420	435
19	599	560	494	489	560	538	732	1,800	984	522	415	415
20	594	555	494	484	555	522	726	2,450	960	516	415	405
21	544	538	*494	494	550	528	744	2,410	944	510	415	405
22	522	528	494	500	555	544	906	2,000	913	504	410	495
23	550	522	506	511	*538	582	906	1,780	885	498	410	390
24	538	516	544	506	528	705	899	*1,640	856	486	410	385
25	528	516	528	506	528	828	864	1,570	801	480	410	380
26	522	516	516	494	522	868	822	1,420	787	486	*410	380
27	516	511	445	494	516	900	762	1,340	758	516	410	380
28	511	506	533	506	511	1,250	738	1,390	808	480	410	385
29	511	500	528	511	-	1,530	750	1,620	850	475	405	380
30	511	484	610	533	-----	1,110	750	1,720	750	470	400	380
31	511	-----	1,220	572	-----	944	-----	1,480	-----	465	395	-----
Total	16,444	16,014	16,703	17,009	15,509	20,474	25,389	47,422	39,404	17,424	13,175	12,293
Mean	530	535	539	549	554	660	846	1,530	1,313	562	425	410
Cfsm	1.60	1.61	1.62	1.65	1.67	1.99	2.55	4.61	3.95	1.69	1.28	1.23
In.	1.84	1.79	1.87	1.91	1.74	2.29	2.84	5.31	4.41	1.95	1.48	1.38
Ac-ft	32,620	31,760	33,130	33,740	30,760	40,610	50,360	94,060	78,160	34,560	26,130	24,380

Calendar year 1954: Max 2,550 Min 445 Mean 937 Cfsm 2.82 In. 38.29 Ac-ft 678,500
Water year 1954-55: Max 2,450 Min 380 Mean 705 Cfsm 2.12 In. 28.81 Ac-ft 510,300

Peak discharge (base, 2,700 cfs).--May 21 (12:30 a.m.) 2,780 cfs (4.05 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.

Drainage area.--79 sq mi, approximately.

Records available.--April 1924 to September 1931, October 1949 to September 1955. 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 3,330 ft (from topographic map). Apr. 26, 1924, to Sept. 30, 1931, at site about an eighth of a mile downstream at different datum.

Average discharge.--13 years (1924-31, 1949-55), 174 cfs (126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 730 cfs June 9; minimum daily, 74 cfs Sept. 26, 27, 29, 30.
1924-31, 1949-55: Maximum discharge, 2,540 cfs Nov. 23, 1953 (gage height, 7.34 ft), from rating curve extended above 780 cfs by logarithmic plotting (no flow in canal); minimum, 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 for power canal furnished by The California Oregon Power Co.

Revisions (water years).--WSP 1184: 1930(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91	*83	79	163	81	80	154	172	348	194	103	80
2	91	83	83	126	78	81	143	170	352	185	101	80
3	90	82	81	106	79	79	138	165	369	177	101	80
4	91	82	81	100	78	77	134	182	380	172	99	78
5	89	81	81	98	81	75	129	210	449	168	97	80
6	90	81	88	91	79	78	129	243	494	160	96	80
7	89	81	83	91	81	79	133	286	525	156	95	78
8	89	81	81	90	85	79	139	323	585	*152	97	78
9	86	81	80	89	86	79	152	337	640	150	93	78
10	89	81	80	87	83	79	173	359	650	148	93	77
11	89	84	79	82	81	84	*164	398	608	145	93	77
12	91	95	79	85	81	82	168	429	557	140	91	77
13	91	86	82	86	80	81	184	395	459	136	91	77
14	88	103	81	82	79	80	186	349	397	133	91	100
15	89	110	80	85	82	77	177	316	361	130	90	80
16	86	108	78	84	81	79	173	295	323	127	90	104
17	89	93	79	83	87	81	167	289	304	124	87	95
18	87	89	78	82	81	79	162	310	303	122	88	84
19	103	88	78	81	79	79	157	390	297	119	87	79
20	91	86	77	81	84	77	154	496	286	115	86	80
21	89	84	*77	81	*81	79	154	515	284	115	86	78
22	91	82	77	84	81	78	171	479	275	114	86	78
23	89	82	79	83	79	83	169	*438	261	110	84	78
24	90	81	82	81	79	102	171	407	244	110	86	77
25	86	81	79	81	81	117	171	392	231	108	86	75
26	85	83	78	79	80	117	169	359	238	108	*85	74
27	86	81	75	79	79	116	160	342	223	109	84	74
28	84	80	80	79	79	150	159	360	231	105	83	76
29	84	80	100	79	-	181	160	407	225	106	83	74
30	84	79	140	81	------	156	169	442	207	102	83	74
31	84	------	180	84	------	147	------	388	------	102	82	------
Total	2,751	2,571	2,655	2,763	2,265	2,911	4,769	10,643	11,106	4,142	2,797	2,400
Mean	88.7	85.7	85.6	89.1	80.9	93.9	159	343	370	134	90.2	80.0
Cfsm	1.12	1.08	1.08	1.13	1.02	1.19	2.01	4.34	4.68	1.70	1.14	1.01
In.	1.30	1.21	1.25	1.30	1.07	1.37	2.25	5.01	5.23	1.95	1.32	1.13
Ac-ft	5,460	5,100	5,270	5,480	4,490	5,770	9,460	21,110	22,030	8,220	5,550	4,760

Calendar year 1954: Max 474 Min 75 Mean 193 Cfsm 2.44 In. 33.13 Ac-ft 139,600
Water year 1954-55: Max 650 Min 74 Mean 142 Cfsm 1.80 In. 24.39 Ac-ft 102,700

Peak discharge (base, 600 cfs).--June 9 (8:30 p.m.) 730 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.

Drainage area.--57 sq mi, approximately.

Records available.--May 1925 to September 1955 (includes flow of Middle Fork power canal since completion Nov. 19, 1931), discontinued.

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.--30 years, 184 cfs (133,200 acre-ft per year).

Extremes.--Maximum discharge during year, 502 cfs June 9; minimum daily, 118 cfs Sept. 30. 1925-55: Maximum discharge, 3,120 cfs Nov. 23, 1953, from river rating curve extended above 250 cfs on basis of shape of previous rating curves; minimum daily, 72 cfs Aug. 24 to Sept. 5, 1931.

Remarks.--Records good. All records presented herein include flow in Middle Fork power canal, 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 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	*138	136	204	135	128	221	187	268	208	142	*122
2	144	138	143	178	132	130	211	187	275	200	142	122
3	145	137	138	161	130	127	200	188	294	192	140	121
4	146	136	138	155	130	124	193	193	316	189	138	121
5	140	136	136	150	133	123	188	209	369	188	137	121
6	146	136	155	142	132	122	185	240	392	186	136	120
7	149	134	141	140	147	122	188	274	417	183	136	120
8	140	134	138	138	167	125	193	300	447	*184	136	121
9	139	138	138	137	157	125	203	303	453	184	134	120
10	138	136	135	134	146	129	218	305	467	181	132	120
11	145	142	132	131	139	137	*214	309	451	178	130	120
12	150	161	135	130	137	138	216	324	445	178	129	120
13	152	143	146	130	135	136	235	306	408	176	130	122
14	144	175	139	129	135	131	223	274	367	176	130	147
15	142	177	136	130	134	125	212	250	314	174	129	131
16	144	177	134	130	145	125	212	233	281	174	129	159
17	155	159	132	128	152	125	208	229	275	168	128	240
18	147	151	132	127	144	124	200	243	278	164	126	129
19	183	153	131	126	138	123	197	299	282	161	126	125
20	156	148	131	124	138	120	197	373	283	159	126	124
21	148	143	*131	126	*137	120	197	375	283	156	126	123
22	153	142	130	129	132	125	217	347	281	156	126	122
23	148	141	135	127	131	148	207	*319	259	155	126	122
24	146	138	137	127	133	185	206	292	250	155	124	*120
25	144	142	135	127	132	199	204	264	231	152	124	120
26	143	141	131	127	132	193	201	253	231	154	124	120
27	140	139	130	127	127	198	194	245	226	154	124	120
28	139	138	131	127	127	232	192	253	263	150	124	120
29	139	136	141	130	-	248	191	305	237	148	123	120
30	139	135	224	136	------	231	187	334	218	146	123	118
31	139	-----	264	140	-----	222	-----	289	------	144	123	------
Total	4,523	4,344	4,435	4,247	3,857	4,640	6,110	8,502	9,559	5,273	4,023	3,730
Mean	146	145	143	137	138	150	204	274	319	170	130	124
Cfsm	2.56	2.54	2.51	2.40	2.42	2.63	3.58	4.81	5.60	2.98	2.28	2.18
In.	2.95	2.83	2.89	2.77	2.52	3.03	3.99	5.55	6.24	3.44	2.62	2.43
Ac-ft	8,970	8,620	8,800	8,420	7,650	9,200	12,120	16,860	18,960	10,460	7,980	7,400

Calendar year 1954: Max 438 Min 130 Mean 212 Cfsm 3.72 In. 50.52 Ac-ft 153,600
Water year 1954-55: Max 467 Min 118 Mean 173 Cfsm 3.04 In. 41.26 Ac-ft 125,400

Peak discharge (base, 500 cfs).--June 9 (8 p.m.) 502 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 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,780 ft (from river-profile map). Prior to Sept. 7, 1949, staff gages at several sites within 2½ miles of present site at various datums.

Average discharge.--30 years, 111 cfs (80,360 acre-ft per year).

Extremes.--Maximum discharge during year, 362 cfs June 9 (gage height, 3.73 ft); minimum, 58 cfs Sept. 30.
1925-55: Maximum discharge, 1,630 cfs Nov. 29, 1942 (gage height, 5.1 ft, from floodmark, site and datum then in use), 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.

Revisions (water years).--WSP 1348: 1943(M), 1946(M), 1948(M), 1953.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 15		Nov. 16 to Sept. 30			
2.5	58	2.4	53	3.2	180
2.7	84	2.6	72	3.6	310
3.0	147	2.9	107		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	*66	71	107	78	76	115	103	148	119	78	63
2	76	66	74	94	74	74	109	103	150	117	78	63
3	76	66	71	87	73	72	104	103	162	113	75	62
4	76	67	70	84	73	72	100	109	174	109	75	62
5	75	67	70	81	73	71	100	119	201	107	74	62
6	75	67	80	79	74	71	99	141	222	106	74	62
7	75	67	73	78	79	73	102	159	240	104	73	62
8	74	67	71	78	85	74	106	174	272	102	72	62
9	74	68	71	76	84	74	115	171	303	102	72	63
10	74	67	69	74	81	76	121	171	306	99	71	60
11	74	75	69	73	80	79	121	189	278	99	72	63
12	75	80	69	74	79	80	*121	195	261	98	73	62
13	75	70	74	74	78	79	125	174	231	97	72	66
14	72	86	71	72	78	76	117	159	207	*95	71	83
15	70	86	70	74	78	75	109	145	183	94	70	70
16	70	84	69	73	83	74	109	132	168	94	70	80
17	74	78	68	71	85	74	106	127	162	92	69	69
18	70	74	68	71	82	74	104	134	159	91	68	65
19	88	74	68	70	81	74	103	177	156	90	67	64
20	76	73	68	70	80	73	103	222	156	88	68	63
21	72	74	*68	70	79	73	104	213	156	87	67	62
22	75	74	*67	72	78	76	119	192	153	86	67	62
23	70	73	69	71	*76	85	111	180	143	85	66	61
24	69	72	71	71	76	95	111	*168	138	83	66	61
25	69	74	70	71	75	97	107	162	132	82	66	61
26	68	72	68	70	76	98	106	150	129	85	*66	60
27	67	72	68	70	74	100	103	145	127	84	65	60
28	67	72	68	71	74	129	103	148	148	81	65	61
29	66	71	71	71	-	138	103	174	132	81	64	60
30	66	70	103	76	------	121	102	183	123	80	64	61
31	66	------	141	79	------	115	------	159	------	79	64	------
Total	2,250	2,172	2,278	2,352	2,186	2,618	3,258	4,881	5,520	2,929	2,162	1,915
Mean	72.6	72.4	73.5	75.9	78.1	84.4	108	157	184	94.5	69.7	63.8
Ac-ft	4,460	4,310	4,520	4,670	4,340	5,190	6,460	9,680	10,950	5,810	4,290	3,800

Calendar year 1954: Max 275 Min 66 Mean 119 Ac-ft 86,050
Water year 1954-55: Max 306 Min 60 Mean 94.6 Ac-ft 68,480

32.11 in

Peak discharge (base, 300 cfs).--June 9 (9:30 p.m.) 362 cfs (3.73 ft).
* Discharge measurement 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 county road bridge, 6 miles southwest of Prospect and at mile 160.4 (river-profile survey).

Drainage area.--643 sq mi.

Records available.--April 1929 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,708 ft (from river-profile map).

Average discharge.--26 years, 1,738 cfs (1,258,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,560 cfs June 10 (gage height, 4.33 ft); minimum, 640 cfs Sept. 12, 13; minimum daily, 920 cfs Sept. 9, 12.
1929-55: Maximum discharge, 20,500 cfs Jan. 18, 1953 (gage height, 12.50 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 on Aug. 18, 1934, 493 cfs Sept. 1, 1934 (prior to Aug. 18, 1934, minimum discharge not determined).

Remarks.--Records excellent. Small diversions above station for irrigation. Considerable diurnal fluctuation caused by powerplant 4 miles above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	920
1.5	1,430
3.0	2,960
4.5	4,790

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,150	1,100	1,070	2,150	1,280	1,140	2,070	1,740	2,620	1,690	1,130	969
2	1,140	*1,120	1,140	1,660	1,240	1,210	1,960	1,760	2,630	1,640	1,120	990
3	1,130	1,120	1,110	1,450	1,220	1,140	1,820	1,800	2,800	1,620	1,100	969
4	1,150	1,110	1,110	1,330	1,190	1,130	1,710	1,950	2,940	1,570	1,070	927
5	1,160	1,100	1,110	1,330	1,200	1,080	1,640	2,220	3,330	*1,530	1,070	976
6	1,140	1,100	1,260	1,230	1,210	1,120	1,640	2,650	3,550	1,510	1,070	927
7	1,140	1,090	1,190	1,190	1,260	1,160	1,690	2,930	3,710	1,470	1,060	934
8	1,140	1,130	1,140	1,220	1,390	1,190	1,820	3,190	3,950	1,430	1,070	934
9	1,150	1,140	1,130	1,210	1,380	1,220	2,030	3,090	4,210	1,430	1,060	920
10	1,140	1,130	1,120	1,190	1,330	1,230	2,140	3,150	4,200	1,400	1,050	948
11	1,140	1,140	1,120	1,150	1,290	1,290	2,040	3,410	3,960	1,370	1,050	941
12	1,160	1,240	1,130	1,140	1,280	1,310	*1,970	3,570	3,640	1,350	1,050	920
13	1,190	1,150	1,190	1,160	1,250	1,300	2,120	3,210	3,300	1,340	1,050	927
14	1,150	1,260	1,150	1,140	1,260	1,270	2,160	2,850	2,980	1,310	1,030	1,240
15	1,130	1,290	1,130	1,160	1,250	1,210	1,900	2,580	2,720	1,300	1,030	1,050
16	1,130	1,400	1,110	1,160	1,290	1,210	1,840	2,360	2,480	1,280	1,030	1,200
17	1,140	1,260	1,100	1,140	1,340	1,210	1,810	2,240	2,320	1,290	997	1,120
18	1,120	1,220	1,100	1,140	1,320	1,200	1,740	2,510	2,280	1,250	1,020	1,020
19	1,210	1,190	1,100	1,130	1,240	1,190	1,730	3,170	2,260	1,260	1,010	997
20	1,230	1,200	1,100	1,120	1,240	1,160	1,750	4,050	2,210	1,210	997	962
21	1,170	1,150	1,090	1,140	1,240	1,190	1,780	4,070	2,190	1,210	997	955
22	1,190	1,140	*1,100	1,160	1,240	1,200	2,060	3,640	2,160	1,200	997	962
23	1,160	1,120	1,120	1,180	*1,190	1,370	2,010	3,350	2,080	1,190	990	955
24	1,140	1,120	1,140	1,160	1,170	1,700	1,980	*3,090	1,960	1,190	990	934
25	1,140	1,120	1,120	1,180	1,170	1,820	1,930	3,060	1,870	1,190	*1,000	941
26	1,130	1,120	1,110	1,160	1,160	1,820	1,880	2,800	1,840	1,170	990	948
27	1,130	1,110	955	1,140	1,140	1,810	1,750	2,630	1,770	1,230	997	955
28	1,120	1,100	1,120	1,140	1,140	2,360	1,720	2,700	1,900	1,190	983	934
29	1,130	1,090	1,140	1,150	-	2,850	1,730	3,070	1,970	1,170	983	962
30	1,140	1,080	1,510	1,220	------	2,450	1,700	3,240	1,740	1,140	983	941
31	1,110	-----	2,670	1,280	-----	2,100	-----	2,900	-----	1,130	955	------
Total	35,600	34,640	36,685	38,310	34,910	44,640	56,120	88,980	81,570	41,260	31,929	29,358
Mean	1,148	1,155	1,183	1,236	1,247	1,440	1,871	2,870	2,719	1,331	1,030	979
Cfsm	1.79	1.80	1.84	1.92	1.94	2.24	2.91	4.46	4.23	2.07	1.60	1.52
In.	2.06	2.00	2.12	2.22	2.02	2.58	3.25	5.15	4.72	2.39	1.85	1.70
Ac-ft	70,610	68,710	72,760	75,990	69,240	88,540	111,300	176,500	161,800	81,840	63,330	58,230

Calendar year 1954: Max 4,720 Min 955 Mean 1,978 Cfsm 3.08 In. 41.75 Ac-ft 1,432,000
Water year 1954-55: Max 4,210 Min 920 Mean 1,518 Cfsm 2.36 In. 32.06 Ac-ft 1,099,000

Peak discharge (base, 5,300 cfs).--No peak above base.
* 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 1922, October 1925 to September 1955.

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.

Average discharge.--36 years (1910-11, 1917-22, 1925-55), 161 cfs (116,600 acre-ft per year).

Extremes.--Maximum discharge during year, 463 cfs Dec. 30 (gage height, 1.63 ft); minimum, 72 cfs Aug. 17 (gage height, 0.60 ft).
1910-11, 1915, 1917-22, 1925-55: 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 good. Diversions for irrigation of about 1,000 acres above station and since 1927 for Medford municipal supply. No regulation.

Revisions (water years).--WSP 1288: 1911, 1918-19, 1921-22, 1929.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.6	72
1.0	172
1.5	387

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	95	98	182	120	110	277	256	166	98	85	78
2	85	95	107	138	110	133	256	247	160	100	85	80
3	95	95	103	120	112	115	232	243	158	98	82	80
4	95	95	100	110	115	110	213	243	155	95	85	80
5	98	95	98	112	120	103	195	239	160	93	85	80
6	98	95	112	103	117	103	185	252	160	93	82	80
7	98	95	103	100	117	*103	179	260	158	93	82	82
8	98	93	95	100	135	105	178	269	158	93	85	80
9	98	95	95	100	163	105	182	260	163	93	82	80
10	98	95	93	98	146	112	205	252	166	93	80	80
11	98	100	91	95	*140	127	209	252	158	91	80	80
12	98	105	93	95	135	138	213	256	149	89	*80	80
13	98	98	105	*95	127	146	252	247	140	89	78	85
14	95	103	98	93	125	140	239	239	130	87	78	98
15	95	103	95	95	122	133	235	232	125	*85	78	87
16	93	105	93	95	125	127	235	213	117	85	78	100
17	95	100	*93	91	133	125	252	202	112	85	74	91
18	93	*98	91	91	125	120	235	198	110	85	74	85
19	*103	98	91	91	120	117	243	205	110	82	74	*82
20	98	98	93	91	117	112	260	220	*107	82	78	80
21	93	98	91	95	115	112	*243	220	103	82	78	80
22	95	98	91	103	112	117	277	220	105	82	78	80
23	98	98	93	100	110	149	273	*213	107	82	76	80
24	98	98	98	98	110	188	269	202	107	85	78	82
25	100	100	95	98	110	205	252	198	103	85	80	80
26	98	100	93	95	110	202	269	192	100	87	82	80
27	98	98	89	93	110	202	269	182	100	89	82	80
28	95	95	95	91	105	273	252	175	103	85	82	78
29	95	95	100	98	-	376	256	175	105	85	82	78
30	95	95	202	112	------	324	247	179	100	85	80	76
31	95	------	243	117	------	277	------	172	------	85	80	------
Total	2,992	2,931	3,237	3,195	3,406	4,809	7,083	6,913	3,895	2,741	2,483	2,462
Mean	96.5	97.7	104	103	122	155	236	223	130	88.4	80.1	82.1
Ac-ft	5,930	5,810	6,420	6,340	6,760	9,540	14,050	13,710	7,730	5,440	4,920	4,880

Calendar year 1954: Max 900 Min 89 Mean 180 Ac-ft 130,000
Water year 1954-55: Max 376 Min 74 Mean 126 Ac-ft 91,530

Peak discharge (base, 450 cfs).--Dec. 30 (11 p.m.) 463 cfs (1.63 ft).
* Discharge measurement made on this day.

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 bridge on county road, 1 mile upstream from mouth, and 1 mile south of McLeod.

Drainage area.--249 sq mi.

Records available.--October 1945 to September 1955.

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.--10 years, 325 cfs (235,300 acre-ft per year).

Extremes.--Maximum discharge observed during year, 1,060 cfs Mar. 29 (gage height, 4.20 ft); minimum, 54 cfs Aug. 22.
1945-55: Maximum discharge, 6,390 cfs Jan. 18, 1953 (gage height, 11.1 ft, observed at peak), from rating curve extended above 2,700 cfs by logarithmic plotting; minimum, that of Aug. 22, 1955.

Remarks.--Records good. 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 tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 29		Mar. 30 to Sept. 30	
1.5	66	1.3	48
2.0	185	1.6	99
3.0	520	2.0	188
4.1	1,010	3.0	520
		4.0	960

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	158	153	667	306	202	596	473	183	81	64	58
2	76	*158	172	358	261	414	528	428	166	83	64	61
3	76	158	169	258	245	264	496	410	154	86	64	62
4	74	158	158	233	236	228	448	403	156	81	66	59
5	74	158	158	228	240	207	400	392	154	*78	67	59
6	74	150	230	210	248	207	361	372	149	79	64	62
7	74	132	182	188	242	213	326	372	147	80	64	59
8	72	130	169	188	273	213	303	375	145	81	64	58
9	72	140	158	207	378	213	306	361	154	81	64	61
10	78	142	161	185	326	213	340	333	156	79	64	61
11	115	158	158	185	296	248	347	323	149	78	64	61
12	137	185	158	180	280	261	*340	323	140	78	62	61
13	142	158	213	185	258	286	452	313	136	76	61	62
14	137	169	199	180	245	276	406	320	123	71	59	101
15	132	180	180	185	239	251	392	320	119	69	61	79
16	132	191	174	207	242	248	403	300	103	67	138	99
17	142	180	169	196	261	242	445	250	101	67	138	97
18	145	177	163	191	242	236	403	238	99	69	134	81
19	163	169	158	191	225	230	428	242	94	67	62	72
20	155	169	158	185	225	225	520	250	94	67	58	67
21	142	158	148	202	213	216	473	250	90	64	58	64
22	142	158	*148	293	213	219	592	242	86	66	54	64
23	142	153	148	273	*205	313	516	232	92	64	58	64
24	148	155	158	222	202	473	488	221	95	67	85	64
25	148	158	155	219	207	326	484	*215	92	92	*58	97
26	161	158	153	213	213	424	516	207	90	67	58	132
27	158	153	140	196	207	410	496	193	85	74	59	127
28	158	155	145	188	199	775	400	188	85	71	61	127
29	158	150	163	185	-	975	500	183	92	69	61	127
30	158	150	612	261	------	708	540	188	85	67	99	123
31	158	------	775	261	------	596	------	180	------	67	61	------
Total	3,817	4,768	6,185	7,120	6,927	10,312	13,245	9,097	3,614	2,286	2,194	2,369
Mean	123	159	200	230	247	333	442	293	120	73.7	70.8	79.0
Ac-ft	7,570	9,460	12,270	14,120	13,740	20,450	26,270	18,040	7,170	4,530	4,350	4,700

Calendar year 1954: Max 2,440 Min 72 Mean 309 Ac-ft 223,600
Water year 1954-55: Max 975 Min 54 Mean 197 Ac-ft 142,700

10.74

* Discharge measurement made on this day.

Elk Creek near Trail, Oreg.

Location.--Lat 42°39'50", long 122°44'50", in NE¼NW¼ sec. 31, T. 33 S., R. 1 E., on right bank 0.4 mile upstream from mouth and 3.3 miles northeast of Trail.

Drainage area.--133 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,456.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 5, 1946, staff gages at various sites within 1 mile of present site at different datums. July 5, 1946, to June 22, 1950, staff gage, and June 23, 1950, to May 23, 1954, water-stage recorder, at site 0.3 mile upstream from present site at datum 12.14 ft higher.

Average discharge.--10 years, 233 cfs (168,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,840 cfs Dec. 31 (gage height, 6.32 ft); minimum, 1.3 cfs Aug. 29.
1945-55: Maximum discharge, 10,000 cfs Jan. 18, 1953 (gage height, 13.32 ft, site and datum then in use); minimum observed, 0.9 cfs Aug. 29, 1946.

Remarks.--Records good. No regulation. Several small diversions above station for irrigation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 12 to Sept. 13)

1.9	1.5	3.1	78
2.0	2.5	3.5	159
2.1	4.1	4.0	318
2.2	6.2	4.5	550
2.3	9.5	5.0	880
2.5	21	5.5	1,230
2.8	42		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	9.2	11	545	330	62	412	330	101	24	4.9	2.4
2	5.8	*8.8	15	318	233	177	358	300	95	24	4.7	2.3
3	4.9	8.5	20	185	175	175	300	267	95	23	4.9	2.4
4	4.7	8.5	18	127	140	135	253	264	92	22	4.5	2.0
5	4.9	8.5	17	99	127	112	220	300	97	*20	3.8	2.4
6	4.9	8.5	68	72	129	103	205	342	95	18	4.1	2.2
7	5.6	8.2	62	60	191	122	211	342	95	15	3.5	2.0
8	7.5	8.8	40	54	322	236	240	334	92	15	2.7	1.9
9	8.2	9.2	35	57	480	243	264	285	85	16	2.4	1.9
10	7.8	10	35	59	318	220	260	264	78	14	2.4	1.9
11	7.2	12	30	56	230	233	236	274	70	14	2.0	2.7
12	7.2	25	28	49	188	236	240	274	63	14	2.2	2.5
13	8.5	26	52	49	175	217	*288	236	56	13	2.3	3.1
14	8.8	22	71	47	167	191	292	214	50	12	2.1	15
15	9.2	32	49	52	167	164	271	205	45	8.8	2.1	16
16	8.8	49	40	57	175	147	250	185	39	9.2	2.1	14
17	8.5	36	34	57	208	135	256	185	38	9.2	1.9	18
18	8.2	27	30	56	175	129	240	202	36	9.2	2.0	14
19	12	22	29	56	140	122	236	236	34	7.8	1.6	11
20	22	19	28	54	114	116	384	270	32	6.9	1.9	8.8
21	16	16	28	67	99	104	545	253	31	6.2	2.1	7.5
22	15	14	*24	145	88	110	622	224	30	6.5	2.0	7.5
23	14	14	26	224	77	376	505	194	31	5.8	1.5	7.2
24	14	13	27	200	*70	1,080	436	172	31	4.7	1.5	7.2
25	12	12	29	180	70	901	362	*162	29	5.2	*2.2	6.9
26	12	12	26	187	68	677	318	145	27	5.2	2.4	6.9
27	10	12	23	157	65	545	267	131	25	5.6	2.4	6.2
28	10	12	23	159	60	*761	250	122	26	5.4	2.2	6.0
29	9.5	12	27	152	-	908	338	122	27	5.6	1.9	6.2
30	9.5	11	421	264	------	652	346	124	26	4.9	2.2	6.2
31	9.2	------	986	362	------	480	-----	114	------	4.9	2.5	------
Total	292.1	486.2	2,352	4,186	4,781	9,869	9,405	7,072	1,671	355.1	81.0	194.3
Mean	9.42	16.2	75.9	135	171	318	314	228	55.7	11.5	2.61	6.48
Ac-ft	579	964	4,670	8,300	9,480	19,570	18,650	14,030	3,310	704	161	385

Calendar year 1954: Max 2,550 Min 2.7 Mean 208 Ac-ft 150,900
Water year 1954-55: Max 1,080 Min 1.5 Mean 112 Ac-ft 80,800

11.43

Peak discharge (base, 2,700 cfs).--No peak above base.
* Discharge measurement made on this day.

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 (river-profile survey).

Drainage area.--1,210 sq mi, approximately.

Records available.--October 1938 to September 1955.

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.--17 years, 2,572 cfs (1,862,000 acre-ft per year).

Extremes.--Maximum discharge during year, 8,120 cfs Dec. 31 (gage height, 4.44 ft); minimum, 703 cfs Sept. 9; minimum daily, 936 cfs Sept. 5, 9.
1938-55: Maximum discharge, 44,600 cfs Jan. 18, 1953 (gage height, 11.08 ft), from rating curve extended above 17,000 cfs by logarithmic plotting; maximum gage height, 11.52 ft Dec. 28, 1945; minimum discharge, 611 cfs Aug. 6, 14, 29, Sept. 9, 1940; minimum daily, 830 cfs Sept. 1, 1940.

Remarks.--Records good except those for period of no gage-height record, which are fair. 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).--WSP 1094: 1942(M), 1943, 1945(M), 1946.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	900
2.0	2,420
3.0	4,300
4.0	6,800

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,310	1,290	a1,200	3,780	2,230	1,530	3,370	2,740	2,960	1,840	1,150	972
2	1,290	1,270	a1,300	2,710	1,940	2,060	3,140	2,690	2,890	1,800	1,150	984
3	1,300	*1,270	a1,300	2,130	1,790	1,800	2,890	2,640	3,050	1,820	1,180	948
4	1,310	1,300	a1,200	1,860	1,700	1,650	2,620	2,730	3,120	1,740	1,140	948
5	1,260	1,290	a1,200	1,770	1,690	1,520	2,440	2,960	3,600	1,690	1,140	936
6	1,260	1,240	a1,500	1,650	1,690	1,530	2,340	3,390	3,840	1,660	1,140	948
7	1,270	1,270	a1,400	1,510	1,820	1,580	2,370	3,720	3,980	1,620	1,130	948
8	1,270	1,300	a1,350	1,550	2,130	1,730	2,490	4,000	4,220	1,580	1,130	972
9	1,290	1,310	a1,300	1,560	2,660	1,830	2,690	3,920	4,500	1,560	1,100	936
10	1,300	1,300	a1,300	1,550	2,200	1,760	2,870	3,800	4,630	1,550	1,080	948
11	1,310	1,310	a1,300	1,480	1,980	1,880	2,760	4,060	4,280	1,490	1,090	984
12	1,350	1,460	a1,200	1,440	1,860	1,940	2,710	4,320	4,000	1,480	1,090	972
13	1,390	1,390	a1,400	1,460	1,830	1,900	*3,010	4,020	3,700	1,440	1,090	984
14	1,340	1,420	a1,400	1,430	1,770	1,860	2,920	3,580	3,250	1,420	1,040	1,260
15	1,290	1,520	a1,250	1,460	1,770	1,720	2,760	3,090	2,960	*1,400	1,080	1,240
16	1,310	1,670	a1,250	1,580	1,790	1,690	2,660	2,960	2,690	1,380	1,160	1,260
17	1,320	1,520	*1,260	1,510	1,940	1,690	2,710	2,810	2,540	1,340	1,150	1,340
18	1,300	1,430	1,310	1,470	1,880	1,630	2,560	2,920	2,450	1,340	1,150	1,140
19	1,400	1,360	1,300	1,440	1,720	1,620	2,560	3,560	2,400	1,310	1,070	1,070
20	1,480	1,360	1,290	1,430	1,670	1,580	3,140	4,590	2,360	1,290	1,020	1,060
21	1,350	1,340	1,260	1,560	1,620	1,550	3,160	4,810	2,340	1,270	1,030	1,030
22	1,360	1,300	1,260	1,900	1,590	1,580	3,640	4,280	2,280	1,270	1,040	1,040
23	1,350	1,290	1,290	1,940	1,550	2,290	3,350	3,920	2,230	1,240	1,030	1,040
24	1,340	1,300	1,360	1,820	1,510	3,680	3,180	3,580	2,120	1,200	*1,040	1,030
25	1,290	1,270	1,340	1,720	*1,470	3,500	2,980	*3,540	2,020	1,270	1,030	1,040
26	1,300	1,300	1,300	1,670	1,530	3,250	2,940	3,090	2,010	1,200	1,020	1,080
27	1,270	1,260	1,210	1,600	1,510	3,030	2,800	3,010	1,950	1,300	1,010	1,060
28	1,300	1,260	1,290	1,580	1,510	4,260	2,680	3,010	1,980	1,260	1,010	1,080
29	1,270	1,270	1,380	1,580	-	5,290	2,940	3,310	2,150	1,190	984	*1,090
30	1,300	a1,200	2,460	1,890	------	4,340	2,760	3,600	1,940	1,220	996	1,040
31	1,260	------	5,620	2,160	------	3,560	------	3,310	------	1,190	972	------
Total	40,740	40,070	45,780	54,190	50,350	70,830	85,440	107,960	88,440	44,360	33,442	31,380
Mean	1,314	1,336	1,477	1,748	1,798	2,285	2,848	3,482	2,948	1,431	1,079	1,046
Ac-ft	80,810	79,480	90,800	107,500	99,870	140,500	169,500	214,100	175,400	87,990	66,330	62,240

Calendar year 1954: Max 13,500 Min 1,200 Mean 2,745 Ac-ft 1,987,000
Water year 1954-55: Max 5,620 Min 936 Mean 1,899 Ac-ft 1,375,000

Peak discharge (base, 9,000 cfs).--No peak above base.
* 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 stations below South Fork near Prospect and at Raygold near Central Point.

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 1955.
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.--34 years, 105 cfs (76,020 acre-ft per year).
Extremes.--Maximum discharge during year, 526 cfs Mar. 29 (gage height, 2.88 ft); minimum, 8.0 cfs Aug. 20 (gage height, 1.00 ft).
1921-55: 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).
Revisions.--The maximum discharge for the water year 1927 has been revised to 3,060 cfs Feb. 20, 1927 (gage height, 6.10 ft), superseding figure published in WSP 654.
Remarks.--Records good. Diversions for irrigation of about 1,000 acres above station.
Revisions (water years).--WSP 934: 1925(M). Revised figures of discharge in cubic feet per second, for the water years 1922, 1937, 1941, and 1942, superseding those published in WSP 554, 834, 934, and 964, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1937		1937-Con.		1937-Con.		1940-Con.		1940-Con.	
Jan. 20	16	Jan. 30	17	Feb. 8	22	Dec. 20	66	Dec. 28	160
21	14	31	17	9	21	21	130	29	105
22	17	Feb. 1	17			22	95		
23	22	2	18	1940		23	72	1941	
24	20	3	22	Dec. 13	33	24	90	Dec. 2	200
25	20	5	33	14	30	25	140	3	400
28	19	6	27	15	32	26	125	4	150
29	18	7	24	19	75	27	250	5	130
								6	100

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
December 1921	-	-	-	†42.0	†2,580
Water year 1921-22	-	698	13	105	75,700
January 1937	576	22	11	18.6	1,140
February	1,422	94	17	50.8	2,820
Water year 1936-37	33,065	990	11	90.6	65,570
Calendar year 1937	38,965	990	11	107	77,270
December 1940	2,240	250	30	73.4	4,510
Calendar year 1940	33,378.6	812	5.6	91.2	66,290
Water year 1940-41	26,556	351	14	72.8	52,740
December 1941	5,735	514	39	185	11,380
Calendar year 1941	29,897	514	14	81.9	59,310
Water year 1941-42	43,644	1,080	14	120	86,580

† Only monthly figures revised; revised daily figures not available.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	19	21	71	46	30	224	191	170	35	*16	13
2	21	19	26	48	38	41	186	179	158	37	14	13
3	21	19	24	36	36	38	167	182	152	37	12	13
4	20	18	23	33	33	32	149	191	146	35	14	12
5	21	17	23	33	38	27	135	221	143	33	16	11
6	21	18	33	*28	38	30	132	256	135	30	16	13
7	*20	18	30	28	39	30	137	280	129	30	15	14
8	18	19	24	27	61	*37	149	294	121	*29	14	14
9	20	23	26	27	94	41	170	288	108	29	14	15
10	20	23	*24	26	61	41	179	280	113	28	14	15
11	21	22	20	22	50	71	167	*280	96	27	*14	15
12	22	*33	24	23	44	79	164	274	84	26	12	14
13	23	24	24	24	41	79	210	256	75	21	14	14
14	20	23	23	22	39	67	191	249	68	20	15	22
15	19	26	22	23	38	57	179	246	62	22	16	19
16	19	33	20	24	41	55	179	232	58	22	14	23
17	21	26	21	24	*57	52	210	256	55	22	14	24
18	22	23	20	24	46	52	188	*252	53	20	12	21
19	28	22	20	27	43	50	179	263	51	20	12	19
20	26	21	23	27	41	44	185	288	47	20	12	19
21	24	22	20	33	38	44	176	280	44	19	14	*19
22	24	22	21	48	38	46	191	270	*42	19	14	18
23	23	22	21	46	36	63	179	256	44	18	14	18
24	22	22	23	38	34	99	173	260	44	18	14	18
25	21	22	22	36	34	134	167	242	42	19	13	17
26	21	23	20	33	32	150	161	232	38	19	12	16
27	21	22	16	30	32	156	182	214	37	19	13	16
28	20	21	21	30	30	292	179	197	38	19	14	14
29	19	19	23	30	-	356	179	200	49	20	14	16
30	19	18	39	38	------	266	185	204	38	19	14	16
31	19	------	82	46	------	*224	------	188	------	17	14	------
Total	656	659	779	1,005	1,198	2,783	5,254	7,501	2,440	749	430	491
Mean	21.2	22.0	25.1	32.4	42.8	89.8	175	242	81.3	24.2	13.9	16.4
Ac-ft	1,300	1,310	1,550	1,990	2,380	5,520	10,420	14,880	4,840	1,490	853	974

Calendar year 1954: Max 701 Min 16 Mean 116 Ac-ft 84,140
Water year 1954-55: Max 356 Min 11 Mean 65.6 Ac-ft 47,510

Peak discharge (base, 500 cfs).--Mar. 29 (5 a.m.) 526 cfs (2.88 ft).
* Discharge measurement made on this day.

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 1955.

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.--39 years (1916-55), 35.5 cfs (25,700 acre-ft per year).

Extremes.--Maximum discharge during year, 153 cfs July 24; minimum, 1.5 cfs Sept. 29, 30. 1914-55: Maximum discharge, about 940 cfs June 5, 1917, computed from rate of change in contents of reservoir after break in dam (occurred during period of no gage-height record); no flow at times.

Remarks.--Records fair. 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).--WSP 654: Drainage area. WSP 1218: 1917(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss or debris July 7 to Aug. 16, Sept. 29, 30)

0.1	1.5	1.0	37
.3	3.5	1.3	77
.5	7.2	1.7	162
.7	15		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	16	19	21	22	22	24	25	35	74	121	124
2	71	16	19	21	22	22	24	25	35	74	121	117
3	71	16	19	21	22	22	24	25	35	99	126	109
4	60	16	19	21	22	22	24	26	35	115	130	106
5	45	16	19	21	22	22	24	27	35	117	132	100
6	*36	16	19	21	22	22	24	30	35	117	135	106
7	15	16	19	21	22	22	24	30	35	119	144	109
8	15	16	19	21	22	22	24	29	35	121	135	83
9	15	16	20	21	22	22	24	30	34	121	115	64
10	15	16	20	21	22	22	24	31	34	126	132	90
11	15	16	20	21	22	22	24	32	33	132	137	92
12	15	17	20	21	22	22	24	32	33	132	*132	94
13	15	17	20	21	22	22	24	32	33	135	130	86
14	15	17	20	21	22	22	24	32	32	148	130	67
15	15	18	20	21	22	22	24	32	32	150	128	*22
16	15	18	21	21	22	22	24	32	32	148	124	4.5
17	15	18	21	21	22	22	24	32	32	148	115	3.0
18	15	18	21	21	22	22	24	32	32	150	106	4.0
19	15	18	21	21	22	22	24	33	34	150	*98	4.5
20	15	18	21	21	22	22	24	33	98	150	90	4.5
21	15	18	21	22	22	22	24	33	96	*148	90	4.5
22	15	18	21	22	22	22	25	33	83	148	86	4.5
23	15	18	21	22	22	22	25	33	67	148	83	4.0
24	15	18	21	22	22	23	25	34	61	150	75	4.0
25	15	18	21	22	22	24	25	34	61	150	88	4.0
26	15	19	21	22	22	24	25	34	61	146	94	4.0
27	15	19	21	22	22	24	25	34	71	144	90	4.0
28	15	19	21	22	22	24	25	34	75	137	83	3.0
29	*15	19	21	22	-	24	25	35	74	128	81	1.5
30	15	19	21	22	------	24	25	35	74	121	83	1.5
31	16	------	21	22	------	24	------	35	------	121	74	------
Total	730	520	628	662	616	697	729	974	1,462	4,067	3,408	1,424.5
Mean	23.5	17.3	20.3	21.4	22.0	22.5	24.3	31.4	48.7	131	110	47.5
Ac-ft	1,450	1,030	1,250	1,310	1,220	1,380	1,450	1,930	2,900	8,070	6,760	2,830

Calendar year 1954: Max 135 Min 13 Mean 49.4 Ac-ft 35,760
Water year 1954-55: Max 150 Min 1.5 Mean 43.6 Ac-ft 31,580

* Discharge measurement made on this day.

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 1955 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.--29 years (1911-12, 1922-23, 1928-55), 72.0 cfs (52,130 acre-ft per year).

Extremes.--Maximum discharge during year, 174 cfs Aug. 3 (gage height, 2.27 ft); minimum, 22 cfs Sept. 29, 30 (gage height, 1.45 ft).
1911-13, 1922-28, 1931-55: Maximum discharge, 680 cfs Dec. 30, 1924 (gage height, 3.30 ft), from rating curve extended above 170 cfs; minimum, 11 cfs Oct. 29 to Nov. 8, 1931 (computed on basis of records for station at Fish Lake, near Lake Creek).

Remarks.--Records good. 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 table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	19
1.6	33
1.8	55
2.0	92
2.3	185

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	43	45	57	54	50	76	70	70	*95	150	128
2	88	43	47	53	51	57	70	69	70	95	147	128
3	88	43	47	49	50	51	69	69	69	110	154	121
4	86	43	47	49	50	50	65	69	69	128	160	115
5	67	43	47	48	51	49	64	69	69	137	164	113
6	65	43	49	*48	51	49	64	70	67	134	160	105
7	40	43	47	48	51	50	62	70	67	137	168	118
8	40	44	47	48	65	*50	62	70	65	150	168	102
9	40	45	47	48	65	50	64	70	65	150	144	84
10	40	44	*47	47	57	51	67	70	67	147	164	108
11	40	45	47	47	54	57	65	70	65	154	*171	108
12	40	*48	47	47	53	60	69	70	65	154	164	108
13	40	45	48	47	53	57	80	70	65	150	160	105
14	41	45	47	47	51	55	70	76	64	160	164	100
15	*41	47	47	48	51	54	69	78	*64	164	157	55
16	41	48	47	48	53	53	72	76	62	164	147	35
17	41	45	47	47	*54	53	78	78	62	164	137	26
18	41	45	47	47	53	53	76	76	62	164	124	27
19	45	45	47	47	51	53	74	*78	62	164	*118	27
20	42	45	47	47	51	51	72	78	100	168	110	27
21	42	45	47	53	50	51	70	76	110	*164	108	*26
22	42	45	47	55	50	53	78	76	102	168	108	25
23	42	45	47	51	50	70	72	76	92	168	102	25
24	42	45	48	50	50	78	70	76	88	168	102	24
25	42	47	48	50	50	72	69	76	86	164	108	24
26	43	45	47	49	49	69	72	76	86	164	118	24
27	43	45	47	49	49	67	72	74	88	160	110	24
28	43	45	47	49	49	88	72	72	95	160	108	25
29	43	45	49	49	-	97	70	74	95	157	102	23
30	43	45	69	53	------	76	70	72	95	150	105	22
51	43	------	65	54	------	*70	------	72	------	150	92	------
Total	1,522	1,344	1,502	1,529	1,466	1,844	2,103	2,266	2,286	4,662	4,194	1,982
Mean	49.1	44.8	48.5	49.3	52.4	59.5	70.1	73.1	76.2	150	135	66.1
Ac-ft	3,020	2,670	2,980	3,030	2,910	3,660	4,170	4,490	4,530	9,250	8,320	3,930

Calendar year 1954: Max 157 Min 40 Mean 86.7 Ac-ft 62,780
Water year 1954-55: Max 171 Min 22 Mean 73.2 Ac-ft 52,960

* Discharge measurement made on this day.

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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 1955 (some years incomplete).

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.--12 years (1924-27, 1929-30, 1934-35, 1940-42, 1944-47, 1953-55), 35.6 cfs (25,770 acre-ft per year) including flow in East Lateral.

Extremes.--Maximum discharge during year, 39 cfs Aug. 6-14 (gage height, 1.33 ft); maximum gage height, 1.69 ft Nov. 20-22 (backwater from beaver dam); no flow at times.
1920-55: Maximum discharge, 5,260 cfs Feb. 20, 1927, by computation of peak flow over dam; no flow at times.

Remarks.--Records poor. Figures of daily discharge do not include water diverted above station by East Lateral from Emigrant Gap Reservoir. Flow regulated since December 1924 by Emigrant Gap Reservoir (see p. 266). Water also diverted above station by Ashland Lateral. Water diverted by Keene Creek Canal from Klamath River basin into Emigrant Creek above station.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	1.0	1.0	a0.2	0.2	0.1	0.1	0.3	2.7	26	30	18
2	1.0	1.0	1.0	a.2	.2	.1	.1	.3	3.2	26	30	1.8
3	1.0	1.0	.9	a.2	.2	.1	.1	.3	2.6	25	31	1.5
4	1.0	1.0	.9	g.2	.2	.1	.1	.4	2.9	24	31	1.3
5	1.0	1.0	.9	a.2	.2	.1	.1	.3	2.4	24	32	1.0
6	1.0	1.0	.9	a.2	.2	.1	.1	.4	2.0	24	37	.9
7	1.0	1.0	.9	a.2	.2	.1	.1	**.4	1.9	24	39	.9
8	1.0	1.0	.9	a.2	.2	*.1	.1	.3	1.8	23	39	.8
9	1.0	1.0	.9	a.2	.2	.1	.1	.3	1.8	23	39	.7
10	1.0	1.0	.9	a.2	.2	.1	.1	1.4	1.8	26	39	.6
11	1.0	1.0	.9	g.2	.2	.1	.2	2.5	1.8	30	*39	.5
12	1.0	1.0	.9	a.2	.2	.1	.2	11	1.8	30	39	.4
13	1.0	1.0	.9	a.2	.2	.1	.2	14	1.9	30	39	.3
14	1.0	1.0	.9	a.2	.2	.1	.2	13	1.8	36	35	.4
15	1.0	1.0	.9	a.2	.2	.2	.2	6.7	2.2	36	29	.4
16	1.0	1.0	.8	a.2	.2	.2	.2	2.5	6.3	36	22	.4
17	1.0	1.0	.8	a.2	.2	.2	.2	*2.5	13	35	19	.5
18	1.0	1.0	.8	g.2	.1	.2	.3	2.5	22	35	20	.4
19	1.0	1.0	.8	a.2	.2	.1	.3	2.5	22	35	21	.3
20	1.0	1.0	.8	a.2	.2	.1	.3	2.6	19	36	21	.2
21	1.0	1.0	*.9	a.2	.2	.1	.2	2.6	17	37	21	.2
22	1.0	*1.0	.6	.2	**.2	.1	.2	2.7	17	37	22	.2
23	1.0	1.1	.3	.2	.2	.1	.2	2.6	18	37	22	.1
24	1.0	1.1	.3	.2	.2	.1	.2	2.9	18	35	16	.1
25	1.0	1.1	a.3	.2	.2	.1	.2	2.7	18	24	.4	.1
26	1.0	1.0	a.2	.2	.2	.1	.2	3.0	19	2.0	.3	.1
27	1.0	1.0	a.2	.2	.2	.1	.2	3.3	24	4.8	.2	.1
28	1.0	1.0	g.2	.2	.2	.1	.2	2.9	*24	29	4.6	0
29	1.0	1.0	a.2	.2	-	.1	.3	2.9	25	26	29	0
30	1.0	1.0	a.2	.2	-------	.1	.3	2.9	25	24	28	0
31	1.0	-------	a.2	.2	-------	.1	-------	2.6	-------	25	27	-------
Total	31.0	30.3	21.3	6.2	5.5	3.5	5.5	95.3	319.9	864.8	801.5	32.2
Mean	1.00	1.01	0.69	0.20	0.20	0.11	0.18	3.07	10.7	27.9	25.9	1.07
Ac-ft	61	60	42	12	11	6.9	11	189	635	1,720	1,590	64
(†)	0	0	0	0	0	0.23	1.47	38.1	49.6	50.8	35.6	0

Adjusted for diversion by East Lateral

Mean	1.00	1.01	0.69	0 20	0.20	0.34	1.65	41.2	60.3	78.7	61.5	1.07
Ac-ft	61	60	42	12	11	21	98	2,529	3,585	4,840	3,780	64

Observed

Calendar year 1954: Max 844 Min 0 Mean 45.2 Ac-ft 32,720
Water year 1954-55: Max 39 Min 0 Mean 6.07 Ac-ft 4,400

Adjusted

Calendar year 1954: Mean 64.5 Ac-ft 46,670
Water year 1954-55: Mean 20.9 Ac-ft 15,100

* Discharge measurement made on this day.
† Diversion, in cubic feet per second, by East Lateral.
** Field estimate made on this day.
a No gage-height record; discharge interpolated.
g Computed from once-daily staff-gage readings.
Note.--Backwater from beaver dam Oct. 1 to Nov. 21, Apr. 17, 18, May 9.

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 1955 (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.--34 years (1920-26, 1927-55), 89.8 cfs (65,010 acre-ft per year).

Extremes.--Maximum discharge during year, 109 cfs Mar. 29 (gage height, 0.85 ft); minimum, 4.0 cfs Aug. 10.
1915-55: 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 for period of backwater from construction work, which are fair. Diversions above station for irrigation. Flow partly regulated since December 1924 by Emigrant Gap Reservoir (see p. 266).

Revisions (water years).--WSP 1044: 1944.

Rating table, water year 1954-55, except period of backwater (gage height, in feet, and discharge, in cubic feet per second)

0.1	1	0.4	26
.2	6	.6	59
.3	14	.8	100

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	28	36	73	49	29	19	67	32	9.2	12	6.8
2	36	26	31	61	42	32	21	65	26	9.2	12	6.8
3	52	26	29	45	39	32	34	50	25	10	12	10
4	61	24	28	40	39	32	31	32	25	8.4	12	6.8
5	57	24	31	40	44	28	25	36	32	12	12	7.6
6	56	22	56	39	42	26	21	31	39	9.2	10	6.8
7	61	22	45	32	40	*24	19	19	29	9.2	10	6.0
8	42	22	37	34	42	25	16	19	25	11	8.4	6.8
9	32	26	36	36	63	28	14	18	*21	13	5.5	8.4
10	29	28	34	34	52	29	15	13	21	14	5.0	7.6
11	29	28	32	32	47	32	15	*15	21	14	5.0	7.6
12	32	37	31	32	45	42	15	16	19	13	6.0	11
13	42	34	36	34	40	42	21	19	14	12	6.0	10
14	37	31	34	32	40	37	26	28	13	10	6.8	22
15	32	39	32	34	40	36	39	49	19	9.2	9.2	21
16	26	42	32	34	42	34	42	49	16	10	c8.4	22
17	28	34	31	32	57	34	56	75	12	11	c8.4	22
18	29	31	31	29	47	32	63	57	11	11	c8.4	20
19	39	29	31	29	37	32	37	44	12	9.2	c8.4	16
20	37	29	*31	29	39	42	*37	36	12	*11	6.0	*16
21	*36	29	32	36	*39	59	61	44	12	10	6.0	19
22	36	29	32	44	40	45	67	36	15	9.2	5.5	24
23	34	29	32	47	39	44	69	32	9.2	9.2	6.8	24
24	34	*29	34	*42	37	37	71	29	10	12	*8.4	24
25	34	29	32	40	37	26	67	45	7.6	12	10	24
26	32	32	31	40	34	28	67	49	8.4	12	8.4	24
27	31	39	28	39	36	26	65	42	6.0	15	9.2	24
28	29	39	31	37	31	61	71	25	7.6	16	9.2	24
29	29	37	32	36	-	96	73	21	7.6	16	6.8	24
30	29	39	45	44	------	50	73	28	8.4	12	7.6	22
31	28	------	94	49	------	22	------	31	------	12	7.6	------
Total	1,123	913	1,107	1,205	1,179	1,142	1,250	1,120	515.8	351.0	257.0	474.2
Mean	36.2	30.4	35.7	38.9	42.1	36.8	41.7	36.1	17.2	11.3	8.29	15.8
Ac-ft	2,230	1,810	2,200	2,390	2,340	2,270	2,480	2,220	1,020	696	510	941

Calendar year 1954: Max 2,450 Min 12 Mean 167 Ac-ft 120,700
Water year 1954-55: Max 96 Min 5.0 Mean 29.1 Ac-ft 21,110

Peak discharge (base, 400 cfs).--No peak above base.
* Discharge measurement made on this day.
c Backwater from construction work.

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 Raygold, just downstream from dam and powerhouse of The California Oregon Power Co., half a mile downstream from Bear Creek, 6 miles northwest of Central Point, and at mile 121.9 (river-profile survey).

Drainage area.--2,020 sq mi, approximately.

Records available.--August 1905 to September 1955. 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.--50 years, 2,846 cfs (2,060,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,210 cfs Dec. 31 (gage height, 5.49 ft); minimum, 777 cfs Oct. 16 (gage height, 0.31 ft); minimum daily, 1,000 cfs Sept. 5.

1905-55: Maximum discharge, 110,000 cfs (revised) Feb. 21, 1927 (gage height, 24.8 ft, from floodmark), from rating curve extended above 36,000 cfs by logarithmic plotting; 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 in February 1890 reached a stage of about 27½ ft, from information by Corps of Engineers.

Revisions.--Figures of maximum discharge for the water years 1910 and 1927 have been revised to 92,800 cfs Nov. 23, 1909 (gage height, 22.5 ft, from graph based on gage readings) and 110,000 cfs Feb. 21, 1927 (gage height, 24.8 ft, from floodmark), superseding those published in WSP 414 and 654, respectively.

Remarks.--Records excellent. Many diversions above station for irrigation. Diurnal fluctuation caused by powerplant just above station.

Revisions (water years).--WSP 1248: 1906, 1914(M), 1915.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.6	990
1.0	1,330
2.0	2,460
3.0	4,000
5.0	8,060

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,400	1,440	1,430	4,660	2,740	1,730	3,880	3,200	3,280	1,930	1,230	1,060
2	1,420	1,450	1,510	3,390	2,380	2,380	3,710	3,170	3,120	1,890	1,130	1,050
3	1,440	*1,450	1,510	2,550	2,100	2,250	3,380	3,120	3,200	1,880	1,160	1,050
4	1,490	1,480	1,480	2,180	1,980	1,940	3,110	3,160	3,250	1,820	1,190	1,040
5	1,450	1,410	1,480	2,070	1,980	1,820	2,830	3,310	3,710	1,750	1,180	1,000
6	1,420	1,410	1,840	1,950	1,980	1,740	2,700	3,680	3,950	1,710	1,160	1,040
7	1,460	1,410	1,850	1,770	2,070	1,830	2,690	4,020	4,100	1,670	1,150	1,040
8	1,470	1,420	1,610	1,770	2,300	1,940	2,790	4,350	4,280	1,660	1,140	1,050
9	1,420	1,500	1,570	1,810	3,250	2,070	2,980	4,310	4,490	1,620	1,150	1,050
10	1,450	1,480	1,580	1,820	2,650	2,060	3,220	4,170	4,670	1,600	1,160	1,030
11	1,430	1,460	1,540	1,720	2,330	2,150	3,120	4,300	4,420	1,580	1,140	1,060
12	1,430	1,650	1,480	1,650	2,200	2,230	3,040	4,510	4,100	1,530	1,150	1,050
13	1,520	1,610	1,700	1,680	2,100	2,290	*3,330	4,310	3,800	1,500	1,140	1,050
14	1,500	1,580	1,720	1,670	2,030	2,230	*3,330	3,830	3,360	1,450	1,090	1,280
15	1,490	1,740	1,590	1,670	2,010	2,100	3,160	3,630	3,060	*1,430	1,120	1,440
16	1,430	1,880	1,560	1,920	2,030	2,010	2,990	3,310	2,790	1,410	1,150	1,340
17	1,530	1,750	*1,540	1,850	2,200	1,960	3,300	3,140	2,630	1,400	1,180	1,520
18	1,520	1,640	1,530	1,720	2,190	1,900	3,110	3,250	2,550	1,370	1,140	1,300
19	1,550	1,540	1,520	1,710	1,980	1,890	2,990	3,730	2,490	1,330	1,130	1,250
20	1,720	1,550	1,530	1,670	1,920	1,810	3,560	4,710	2,420	1,310	1,060	1,220
21	1,570	1,530	1,510	1,780	1,890	1,810	3,660	5,110	2,380	1,310	1,070	1,190
22	1,570	1,510	1,510	2,340	1,810	1,780	4,080	4,640	2,360	1,300	1,090	1,180
23	1,550	1,510	1,520	2,280	1,760	2,280	3,920	4,260	2,320	1,280	1,110	1,160
24	1,550	1,470	1,610	2,100	1,740	3,800	3,680	3,880	2,240	1,250	*1,050	1,150
25	1,510	1,460	1,590	2,020	*1,750	3,800	3,490	3,830	2,100	1,280	1,070	1,120
26	1,500	1,480	1,540	1,960	1,760	3,590	3,390	*3,590	2,090	1,260	1,070	1,160
27	1,470	1,500	1,510	1,870	1,750	3,330	3,360	3,380	2,040	1,310	1,070	1,120
28	1,470	1,490	1,470	1,820	1,740	3,040	3,200	3,350	2,020	1,290	1,080	1,130
29	1,460	1,460	1,580	1,810	-	6,530	3,490	3,470	2,210	1,260	1,050	1,130
30	1,460	1,470	2,730	2,060	------	5,410	3,350	3,810	2,040	1,280	1,060	*1,130
31	1,450	------	6,910	2,460	------	4,280	------	3,610	------	1,230	1,040	------
Total	46,100	45,730	55,050	63,730	58,600	79,980	98,840	118,140	91,470	45,890	34,710	34,390
Mean	1,487	1,524	1,776	2,056	2,093	2,580	3,295	3,811	3,049	1,480	1,120	1,146
Ac-ft	91,440	90,700	109,200	126,400	116,200	158,600	196,000	234,300	181,400	91,020	68,850	68,210

Calendar year 1954: Max 24,400 Min 1,390 Mean 3,341 Ac-ft 2,419,000
Water year 1954-55: Max 6,910 Min 2,117 Mean 2,117 Ac-ft 1,532,000

Peak discharge (base, 11,000 cfs).--No peak above base.
* 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 (river-profile survey).

Drainage area.--2,420 sq mi, approximately.

Records available.--January 1939 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 888.28 ft above mean sea level, datum of 1929.

Average discharge.--16 years, 3,353 cfs (2,427,000 acre-ft per year).

Extremes.--Maximum discharge during year, 10,700 cfs Dec. 31 (gage height, 4.81 ft); minimum, 444 cfs Dec. 13; minimum daily, 862 cfs Sept. 11-13.
1939-55: Maximum discharge, 77,000 cfs Jan. 18, 1953 (gage height, 23.9 ft), from rating curve extended above 28,000 cfs on basis of slope-area determination at gage height 21.25 ft; minimum, that of Dec. 13, 1954; 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 in 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 except those for periods of no gage-height record or backwater from moss and debris, which are fair. 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. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.

Rating tables, water year 1954-55, except period of backwater from moss or debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31		Jan. 1 to Sept. 30	
0.1	1,370	-0.4	840
1.0	2,600	0.0	1,300
2.0	4,350	1.0	2,780
4.0	8,710	2.0	4,600
		3.5	7,900

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,370	1,530	*1,540	5,550	3,450	1,960	*4,600	3,690	3,360	1,840	1,070	895
2	1,390	1,540	1,600	4,290	3,100	2,600	4,440	3,560	3,190	1,840	1,050	884
3	1,530	1,540	1,620	3,000	2,640	2,780	3,960	3,470	3,190	1,840	1,030	895
4	1,870	1,530	1,560	2,480	2,430	2,300	3,610	3,450	3,260	1,790	1,020	895
5	1,590	1,530	1,590	2,240	2,360	2,120	3,290	3,580	3,670	1,700	1,020	895
6	1,500	1,530	2,000	2,150	2,360	2,000	3,070	3,890	4,080	1,570	1,060	884
7	1,510	1,510	2,180	1,920	2,400	2,000	2,980	4,270	4,150	1,600	1,020	884
8	1,510	1,500	1,820	1,900	2,570	2,160	3,040	4,600	4,360	1,560	1,020	873
9	1,500	1,540	1,790	1,960	3,810	2,330	3,200	4,580	4,740	1,560	1,040	873
10	1,510	1,550	1,750	1,960	3,340	2,330	3,420	4,340	4,900	1,570	1,000	873
11	1,540	1,550	1,680	1,900	2,860	2,360	3,510	4,400	4,700	1,530	994	862
12	*1,540	1,660	1,640	1,820	2,640	2,520	2,980	4,720	4,340	1,480	*1,000	862
13	1,550	1,750	1,700	1,800	*2,480	2,570	3,260	4,580	4,020	1,430	1,000	862
14	1,610	1,690	1,980	1,840	2,380	2,520	3,700	4,120	3,560	1,360	1,000	961
15	1,540	1,910	1,830	1,850	2,320	2,400	3,470	3,920	3,240	1,340	1,000	1,510
16	1,530	2,020	1,740	2,120	2,300	2,260	3,290	3,560	2,930	1,300	1,000	1,140
17	1,510	1,980	a1,700	2,120	2,510	2,200	3,470	3,340	2,640	1,300	1,050	1,430
18	1,560	1,780	a1,700	1,970	2,520	2,180	3,470	3,220	2,590	1,280	1,000	1,330
19	1,590	1,700	a1,700	1,910	2,300	2,120	3,430	3,670	2,560	1,220	994	1,170
20	1,770	1,690	a1,700	1,850	2,200	2,040	4,300	*4,700	*2,480	1,200	917	1,080
21	1,650	1,660	a1,600	1,920	2,150	1,970	4,760	5,360	2,350	1,030	895	1,070
22	1,600	1,620	a1,500	2,650	2,080	1,970	4,920	4,860	2,330	1,100	884	1,080
23	1,640	1,610	a1,600	2,700	2,030	2,280	4,800	4,480	2,330	1,110	884	1,100
24	1,590	1,590	1,640	2,560	1,970	3,870	4,420	4,000	2,260	1,110	884	1,080
25	1,570	1,570	1,680	2,400	1,980	4,300	4,130	3,910	2,080	1,100	895	1,070
26	1,590	1,570	1,620	2,320	1,970	4,120	3,960	3,740	2,020	1,130	884	983
27	1,570	1,570	1,570	2,200	2,020	3,740	3,690	3,510	1,970	1,130	884	961
28	1,560	1,570	1,440	2,120	1,960	4,800	3,670	3,260	1,940	1,190	895	1,070
29	1,570	1,550	1,610	2,120	--	7,460	4,000	3,470	2,140	1,130	906	1,020
30	1,560	1,540	2,150	2,330	------	6,980	3,890	3,850	2,060	1,080	895	*1,050
31	1,570	------	8,010	3,090	------	5,260	------	3,780	------	1,060	895	------
Total	48,490	48,880	59,240	73,040	69,130	92,500	112,730	123,860	93,440	42,480	30,086	30,542
Mean	1,564	1,629	1,911	2,356	2,469	2,984	3,758	3,996	3,115	1,370	971	1,018
Ac-ft	96,180	96,950	117,500	144,900	137,100	183,500	223,600	245,700	185,300	84,260	59,670	60,580

Calendar year 1954: Max 39,900 Min 1,220 Mean 3,821 Ac-ft 2,766,000
Water year 1954-55: Max 8,010 Min 862 Mean 2,259 Ac-ft 1,635,000

Peak discharge (base, 13,000 cfs).--No peak above base.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station at Raygold near Central Point and recorded range in stage.
Note.--Backwater from moss or debris July 1 to Sept. 30.

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 3 miles northeast of Copper store.

Drainage area.--220 sq mi.

Records available.--December 1938 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,759.66 ft above mean sea level, datum of 1929.

Average discharge.--16 years (1939-55), 422 cfs (305,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,180 cfs Dec. 31 (gage height, 4.40 ft); minimum, 21 cfs Sept. 8 (gage height, 0.90 ft).
1938-55: Maximum discharge, 15,300 cfs Jan. 18, 1953 (gage height, 19.48 ft), from rating curve extended above 6,300 cfs by logarithmic plotting; minimum, 20 cfs Sept. 23-25, 1939.

Remarks.--Records excellent. 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.--WSP 1064: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
1.1	45	3.0	470	0.9	21	3.0	455
1.5	95	4.0	920	1.2	54	4.0	910
2.0	181			1.5	94	5.0	1,600
				2.0	175		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	54	71	494	196	132	402	255	427	103	49	26
2	49	54	80	354	177	135	360	265	420	102	48	26
3	49	55	80	270	166	129	321	291	458	103	48	26
4	49	56	76	228	159	124	*294	357	560	96	46	25
5	50	58	106	201	157	118	273	452	584	90	43	23
6	50	71	518	177	150	121	268	618	532	86	41	23
7	*57	63	235	162	*154	126	291	756	497	81	41	23
8	60	78	165	157	154	140	330	844	466	79	41	21
9	58	102	181	154	173	142	387	751	430	81	*40	23
10	58	76	148	142	161	142	399	768	402	80	38	25
11	57	87	131	135	157	148	351	862	354	79	36	24
12	55	112	128	132	155	155	315	834	309	74	36	23
13	56	94	159	138	150	155	321	746	262	73	35	28
14	54	228	143	126	147	147	294	560	235	70	35	60
15	48	367	134	137	148	142	270	490	220	69	36	46
16	47	316	124	134	155	137	258	*455	206	67	35	44
17	50	179	116	126	175	135	248	500	190	65	34	54
18	50	145	113	126	164	134	235	632	179	62	34	44
19	108	131	110	124	157	134	235	923	166	59	31	39
20	94	126	113	116	154	129	255	1,100	157	56	30	35
21	69	112	121	116	150	129	282	892	143	59	30	34
22	67	107	129	137	145	130	321	715	138	58	29	33
23	66	100	154	137	142	132	309	622	140	58	29	32
24	62	95	183	135	142	140	315	604	*138	59	30	32
25	60	89	157	137	138	164	306	568	132	55	30	32
26	58	*87	143	134	142	186	297	528	127	54	28	*31
27	60	81	128	130	140	245	255	504	122	60	27	30
28	57	78	129	130	132	514	255	522	118	58	27	29
29	57	77	124	134	-	695	252	576	118	54	26	30
30	57	72	215	192	------	497	248	568	110	52	26	30
31	57	------	818	203	------	405	------	476	------	49	27	------
Total	1,818	3,350	5,232	5,212	4,340	5,962	8,947	19,034	8,340	2,191	1,086	951
Mean	58.6	112	169	168	155	192	298	614	278	70.7	35.0	31.7
Ac-ft	3,610	6,640	10,380	10,340	8,610	11,830	17,750	37,750	16,540	4,350	2,150	1,890

Calendar year 1954: Max 4,600 Min 47 Mean 528 Ac-ft 382,100
Water year 1954-55: Max 1,100 Min 21 Mean 182 Ac-ft 131,800

Peak discharge (base, 1,700 cfs).--No peak above base.
* Discharge measurement made on this day.

Applegate River near Applegate, Oreg.

Location.--Lat 42°14'30", long 123°08'20" (revised), 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 1955.

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.--17 years, 502 cfs (363,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,300 cfs May 20 (gage height, 3.76 ft); minimum daily, 10 cfs Sept. 8.
1938-55: Maximum discharge, 25,100 cfs Jan. 18, 1953 (gage height, 15.60 ft), from rating curve extended above 5,600 cfs by logarithmic plotting; minimum, 7 cfs Sept. 18, 1945, Aug. 28, 1951.

Remarks.--Records excellent except those for periods of no gage-height record, which are 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 up to 4.3 and 13.6 cfs, respectively, around station. Thompson Creek Irrigation Association ditch diverts as much as 8 cfs for irrigation, and has diverted 21 cfs for mining into Thompson Creek basin.

Revisions.--WSP 1064: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.3	8	2.0	295
.5	15	3.0	760
.7	26	4.0	1,500
1.0	57		
1.5	145		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	56	94	590	270	175	474	303	469	79	21	12
2	46	56	103	442	239	182	428	311	451	79	20	12
3	47	55	109	347	219	175	387	319	482	82	15	12
4	46	56	101	295	210	165	*355	359	565	77	16	11
5	47	56	109	264	210	152	319	428	630	67	15	11
6	50	63	518	232	201	158	311	615	615	67	15	11
7	*55	65	339	207	*207	162	319	742	570	63	14	11
8	61	67	225	204	198	175	351	874	541	60	13	10
9	58	117	232	198	225	180	403	790	496	57	*13	11
10	57	87	204	185	213	182	438	748	464	55	13	11
11	55	87	175	172	207	188	395	838	420	50	12	11
12	53	121	162	172	201	195	367	880	363	50	12	11
13	52	111	192	170	195	198	367	736	311	45	13	13
14	55	174	188	160	192	192	343	610	260	36	12	26
15	46	399	175	172	192	178	319	523	239	33	13	20
16	38	424	165	178	195	175	303	*469	225	30	13	18
17	40	222	150	165	219	170	307	514	204	26	13	22
18	41	195	145	162	213	170	288	600	195	30	13	20
19	72	170	139	160	201	168	278	856	178	28	13	16
20	123	162	137	152	201	162	299	1,110	141	24	14	14
21	76	150	143	150	195	162	331	985	119	23	13	13
22	68	139	155	175	190	162	371	802	109	23	12	12
23	68	133	172	192	185	162	367	700	*107	23	12	13
24	68	129	216	180	180	170	371	655	107	22	13	13
25	64	119	195	182	182	195	359	635	92	22	13	14
26	63	*115	178	178	182	222	363	580	94	21	12	*14
27	63	113	150	175	188	260	327	536	91	22	12	15
28	63	109	165	172	175	532	315	541	85	22	12	14
29	60	105	152	175	-	772	315	610	91	24	12	13
30	58	98	160	228	------	595	303	640	84	23	12	11
31	57	------	836	267	------	487	------	541	------	23	12	------
Total	1,796	3,953	6,184	6,701	5,685	7,221	10,473	19,850	8,798	1,286	418	415
Mean	57.9	132	199	216	203	233	349	640	293	41.5	13.5	13.8
Ac-ft	3,560	7,840	12,270	13,290	11,280	14,320	20,770	39,370	17,450	2,550	829	823

Calendar year 1954: Max 6,530 Min 31 Mean 686 Ac-ft 496,600
Water year 1954-55: Max 1,110 Min 10 Mean 199 Ac-ft 144,400

Peak discharge (base, 2,200 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--No gage-height record Aug. 24 to Sept. 14, Sept. 16-20; discharge estimated on basis of records for stations near Wilderville and Copper.

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 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,680 ft (by barometer).

Average discharge.--9 years, 15.1 cfs (10,930 acre-ft per year).

Extremes.--Maximum discharge during year, 36 cfs Dec. 31 (gage height, 2.24 ft); minimum, 0.8 cfs Sept. 25.
1946-55: Maximum discharge, 1,110 cfs Jan. 18, 1953 (gage height, 5.36 ft), from rating curve extended above 550 cfs on basis of slope-area determination at gage height 4.92 ft; minimum, that of Sept. 25, 1955.

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

Rating table, water year 1954-55 (gage height, in feet and discharge, in cubic feet per second)
(Shifting-control method used Aug. 10 to Sept. 12)

1.1	0.8	1.6	6.6
1.2	1.3	1.8	12
1.3	2.0	2.0	20
1.4	3.0	2.2	33

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	2.1	1.8	20	16	8.3	19	15	5.4	2.6	1.8	1.3
2	1.4	2.1	2.2	17	16	15	19	14	5.2	2.6	1.8	1.3
3	1.4	2.2	1.9	12	13	14	17	14	5.0	2.7	1.7	1.3
4	1.5	2.2	1.8	9.6	11	11	15	14	4.8	2.4	1.7	1.2
5	1.5	2.2	2.4	8.0	10	9.6	13	14	4.6	2.4	1.7	1.2
6	1.5	2.2	13	7.1	9.6	8.8	12	14	4.3	2.4	1.7	1.2
7	*1.6	2.2	5.0	6.6	*9.3	10	12	13	4.1	2.4	1.6	1.2
8	1.6	2.2	3.5	6.2	9.9	15	12	13	4.1	2.4	1.4	1.4
9	1.6	2.4	5.6	6.0	11	17	11	12	4.0	2.4	1.3	1.4
10	1.5	2.2	4.1	5.8	12	17	11	11	4.0	2.4	1.3	1.4
11	1.5	2.4	3.0	5.2	11	16	10	10	4.0	2.4	1.3	1.5
12	1.5	2.4	2.8	5.2	10	16	10	9.9	3.8	2.2	*1.4	1.4
13	1.6	2.4	7.3	5.2	9.6	15	11	9.3	3.6	2.1	1.4	1.5
14	1.6	4.8	6.2	5.0	9.0	13	11	9.0	3.5	2.0	1.4	1.6
15	1.5	5.4	4.6	8.5	8.5	12	10	8.8	3.5	2.0	1.4	1.2
16	1.7	4.0	4.1	11	8.8	11	11	*8.3	3.5	2.0	1.4	1.5
17	2.1	2.4	3.3	8.5	9.3	10	12	8.0	3.3	2.0	1.4	1.3
18	2.0	2.0	2.9	7.3	8.5	9.6	12	7.8	3.3	2.0	1.4	1.0
19	5.6	2.1	2.8	6.8	8.5	9.3	14	7.1	3.2	1.9	1.4	.9
20	2.8	2.0	2.7	6.2	8.0	9.0	20	7.3	3.0	1.9	1.4	.9
21	2.4	1.8	2.7	6.4	7.6	8.5	26	7.1	*3.0	1.9	1.4	.9
22	2.4	1.7	2.8	8.3	7.3	8.3	30	6.8	2.8	1.9	1.4	.9
23	2.4	1.6	3.0	9.9	6.8	8.3	29	6.8	2.8	1.9	1.4	.9
24	2.4	1.6	4.1	11	6.6	8.3	25	7.3	2.8	1.9	1.5	.9
25	2.4	1.6	3.6	12	6.4	8.5	22	6.4	2.8	1.9	1.5	.8
26	2.4	*1.6	3.2	11	6.6	8.8	19	6.2	2.8	1.9	1.5	*.9
27	2.2	1.6	2.8	9.9	6.6	9.6	16	6.2	2.7	2.2	1.4	.9
28	2.2	1.6	2.8	9.3	6.2	11	16	6.0	2.6	2.0	1.4	1.1
29	2.2	1.6	2.8	9.0	-	19	16	5.6	2.7	1.9	1.4	1.1
30	2.2	1.6	6.0	14	------	19	15	5.6	2.6	1.9	1.4	1.1
31	2.2	-----	24	17	-----	*18	-----	5.4	------	1.8	1.4	------
Total	62.4	68.2	138.8	285.0	265.1	373.9	475	288.9	107.8	66.4	45.6	35.2
Mean	2.01	2.27	4.48	9.19	9.47	12.1	15.8	9.32	3.59	2.14	1.47	1.17
Cfsm	0.234	0.264	0.521	1.07	1.10	1.41	1.84	1.08	0.417	0.249	0.171	0.136
In.	0.27	0.29	0.60	1.23	1.15	1.62	2.05	1.25	0.47	0.29	0.20	0.15
Ac-ft	124	135	275	565	526	742	942	573	214	132	90	70

Calendar year 1954: Max 325 Min 1.4 Mean 17.7 Cfsm 2.06 In. 27.97 Ac-ft 12,840
Water year 1954-55: Max 30 Min 0.8 Mean 16.06 Cfsm 0.705 In. 9.57 Ac-ft 4,390

Peak discharge (base, 150 cfs).--No peak above base.
* 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 1955 (discontinued).
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.--17 years, 727 cfs (526,300 acre-ft per year).
Extremes.--Maximum discharge during year, 1,860 cfs Dec. 31 (gage height, 4.66 ft, from graph based on gage readings); minimum observed, 1.9 cfs Sept. 10, 11.
1938-55: Maximum discharge, 27,700 cfs Jan. 18, 1953 (gage height, 18.3 ft, from floodmark), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, that of Sept. 10, 11, 1955.
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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
934	1941	Dec. 21, 1940	6,450	g8.5
984	1943	Jan. 21, 1943	24,200	g16.9
1094	1947	Nov. 19, 1946	4,900	g7.5
1124	1948	Jan. 6, 1948	25,000	g17.2
1154	1949	Feb. 22, 1949	6,400	g8.4

g From graph based on gage readings.

Remarks.--Records good. Many diversions above station for irrigation and mining. Two irrigation ditches on left bank divert about 17 cfs around station. No regulation.
Revisions.--WSP 1064: Drainage area. Revised figure of discharge, in cubic feet per second, for the water year 1943, superseding that published in WSP 984, is given herewith:

Dec. 8, 1942..... 2,260

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
December 1942.....	74,702	12,800	874	2,410	148,200
Calendar year 1942.....	293,983	12,800	21	805	583,200
Water year 1942-43.....	364,232	16,200	24	998	722,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	131	*149	1,200	580	352	808	550	560	96	9.8	3.4
2	62	127	158	906	540	428	744	540	550	96	9.2	3.6
3	59	121	172	678	490	432	660	530	570	89	10	2.5
4	65	117	160	612	441	387	590	570	624	87	11	3.2
5	68	119	162	540	423	356	560	636	720	89	12	3.0
6	*71	123	871	446	410	336	540	822	684	79	14	3.3
7	94	129	606	410	400	348	530	962	660	74	13	3.2
8	98	131	396	374	*410	360	550	1,090	636	63	14	2.8
9	103	165	455	364	500	382	600	1,020	590	62	10	3.0
10	105	180	396	352	455	396	648	920	550	61	8.6	1.9
11	101	162	320	316	428	387	590	990	490	58	*5.8	1.9
12	109	182	288	310	405	396	550	1,020	450	66	6.6	2.0
13	109	200	410	306	392	400	590	920	378	66	7.5	2.1
14	105	220	410	313	378	378	550	720	320	55	6.6	2.4
15	98	495	328	348	364	348	530	648	306	41	7.0	2.8
16	90	636	313	480	364	336	510	600	278	43	6.8	2.7
17	89	360	288	410	400	324	540	*612	238	31	7.0	12
18	94	292	271	396	392	313	500	672	226	23	6.6	18
19	113	257	274	369	360	310	510	850	209	21	5.8	25
20	200	235	247	344	356	306	684	1,150	198	*20	4.8	28
21	165	226	238	328	348	296	720	1,100	*162	20	4.4	24
22	151	206	250	396	332	285	744	906	149	16	4.2	25
23	146	200	274	405	320	299	720	794	140	15	4.4	31
24	142	192	328	400	313	313	684	732	127	12	3.6	30
25	138	182	316	400	313	320	648	720	111	13	3.0	31
26	142	170	296	392	324	348	678	660	99	7.5	3.4	35
27	138	172	268	364	344	387	600	624	85	13	3.6	*27
28	136	165	268	344	336	500	580	600	79	13	3.6	21
29	129	158	254	348	-	998	580	660	92	13	3.4	21
30	134	153	441	450	------	1,020	560	728	96	12	3.3	15
31	129	------	1,780	555	------	*815	-----	612	------	23	3.2	------
Total	3,442	6,206	11,387	13,856	11,118	12,856	18,298	23,956	10,377	1,377.5	216.2	386.8
Mean	111	207	367	447	397	415	610	773	346	44.4	6.97	12.9
Ac-ft	6,830	12,310	22,590	27,480	22,050	25,500	36,290	47,520	20,580	2,730	429	767

Calendar year 1954: Max 14,000 Min 26 Mean 1,039 Ac-ft 752,500
Water year 1954-55: Max 1,780 Min 1.9 Mean 311 Ac-ft 225,100

* 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 and October 1945 to September 1955 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.--11 years (1944-55), 79.1 cfs (57,270 acre-ft per year).

Extremes.--Maximum discharge during year, 714 cfs Dec. 31 (gage height, 4.36 ft); minimum daily, 0.9 cfs Sept. 5-7.
1913, 1943-55: 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 fair except those for period of no gage-height record, which are poor. Several small diversions above station for irrigation. No regulation.

Revisions (water years).--WSP 1184: 1948.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	0.9	1.6	22
1.0	2.0	2.0	63
1.1	3.5	2.5	146
1.2	5.4	3.0	252
1.4	12	4.0	570

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	3.2	8.7	269	129	89	127	125	17	7.2	1.9	1.1
2	2.0	3.2	9.0	182	116	182	113	109	16	7.2	1.7	1.1
3	2.0	3.2	9.0	131	104	144	97	95	16	7.5	1.9	1.1
4	2.2	3.2	9.0	99	94	109	84	89	15	7.0	1.6	1.0
5	2.2	3.2	58	82	84	90	73	80	14	6.7	1.6	.9
6	*2.3	3.2	414	66	76	80	64	73	13	6.7	1.4	.9
7	2.8	3.2	216	57	74	80	59	64	13	6.7	1.4	.9
8	2.8	4.8	131	52	*83	90	57	59	12	6.2	1.4	1.0
9	2.8	6.2	192	51	104	92	56	52	11	5.7	1.4	1.1
10	2.8	4.8	150	47	95	86	52	48	11	5.7	1.8	1.1
11	2.6	4.8	99	42	84	82	47	43	12	5.0	*2.0	1.2
12	2.6	7.0	94	39	74	78	44	40	12	5.0	1.7	1.2
13	2.6	6.2	214	39	64	80	73	39	11	4.6	1.6	1.4
14	2.6	102	188	37	58	71	66	37	11	4.3	1.5	2.5
15	2.6	186	127	82	57	61	61	33	10	3.7	1.5	2.0
16	2.6	135	95	158	57	57	57	33	10	3.5	1.5	4.0
17	2.8	69	74	146	58	53	57	*31	9.4	4.1	1.4	3.4
18	2.9	42	58	138	55	50	53	28	9.0	4.1	1.4	3.0
19	7.5	34	48	168	48	48	63	27	9.0	3.7	1.4	2.7
20	5.7	27	43	152	42	43	133	25	8.0	3.7	1.4	2.5
21	4.3	21	42	120	39	40	305	23	7.5	3.4	1.4	2.4
22	3.9	17	43	114	37	38	345	22	*7.7	3.4	1.4	2.3
23	3.9	15	46	116	34	47	243	22	8.7	3.4	1.5	2.2
24	3.5	13	55	114	33	58	186	21	9.4	2.9	1.6	2.2
25	3.7	12	51	104	33	63	154	21	8.7	3.2	1.6	2.0
26	3.7	11	47	95	37	62	136	21	8.0	3.2	1.6	2.1
27	3.5	10	40	86	46	62	114	20	7.5	3.5	1.5	*2.2
28	3.5	9.4	39	83	53	66	111	18	7.7	3.5	1.4	2.0
29	3.4	9.0	37	77	-	127	104	16	8.4	3.0	1.3	1.9
30	3.4	*8.7	187	109	------	154	131	14	7.7	2.6	1.2	1.8
31	3.2	-----	460	127	-----	*133	------	16	------	2.2	1.2	------
Total	98.4	777.3	3,283.7	3,182	1,868	2,515	3,265	1,344	320.7	142.6	47.2	55.2
Mean	3.17	25.9	106	103	66.7	81.1	109	43.4	10.7	4.60	1.52	1.84
Cfsm	0.103	0.838	3.43	3.33	2.16	2.62	3.53	1.40	0.346	0.149	0.049	0.060
In.	0.12	0.94	3.95	3.83	2.25	3.03	3.93	1.62	0.39	0.17	0.06	0.07
Ac-ft	195	1,540	6,510	6,310	3,710	4,990	6,480	2,670	636	283	94	109

Calendar year 1954: Max 2,280 Min 1.6 Mean 94.5 Cfsm 3.06 In. 41.50 Ac-ft 68,390
Water year 1954-55: Max 460 Min 0.9 Mean 46.3 Cfsm 1.50 In. 20.36 Ac-ft 33,530

Peak discharge (base, 900 cfs).-No peak above base.
* Discharge measurement made on this day.
Note.--No gage-height record Aug. 12 to Sept. 26: discharge estimated on basis of recorded range in stage, records for Deer Creek near Dryden and Powell Creek near Williams, and weather records.

Grave Creek at Pease Bridge, near Placer, Oreg.

Location.--Lat 42°38'30", long 123°12'40", in SE¼ sec. 6, T. 34 S., R. 4 W., on right bank half a mile downstream from Pease Bridge, 0.4 mile upstream from Boulder Creek, and 5 miles east of Placer. Prior to Aug. 4, 1955, at site half a mile upstream. All records computed are for site half a mile upstream at Pease Bridge.

Drainage area.--22 sq mi, approximately, at measuring section half a mile upstream.

Records available.--October 1945 to September 1955 in reports of Geological Survey. September 1940 to September 1941 in reports of State engineer; and October 1941 to September 1945 in files of State Engineer.

Gage.--Water-stage recorder. Datum of gage is 2,354.2 ft above mean sea level, datum of 1929 (Bureau of Reclamation benchmark). Prior to Aug. 4, 1955, at sites about half a mile upstream at datum 29.9 ft higher.

Average discharge.--10 years, 60.9 cfs (44,090 acre-ft per year).

Extremes.--Maximum discharge during year, 1,020 cfs Dec. 30 (gage height, 3.63 ft); minimum, 0.9 cfs Sept. 5.
1940-55: 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 except those for periods of no gage-height record or backwater from debris, which are poor. One small diversion above station. Prior to 1945, Columbia upper ditch diverted water about 2 miles above station, bypassing station.

Rating tables, water year 1954-55, except period of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Aug. 3				Aug. 4 to Sept. 30	
-0.1	1.4	0.7	33	1.1	0.9
0.0	2.4	1.0	63	1.2	2.0
.1	4.0	1.5	142	1.3	3.8
.2	6.2	2.0	269	1.4	6.8
.3	9.3	2.5	445		
.5	19	3.0	675		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1.7	a3.0	5.5	208	122	a30	*140	104	19	a7.0	a2.6	1.2
2	a1.7	a3.0	a5.6	129	90	a40	117	99	18	a7.0	a2.5	1.2
3	a1.7	a3.0	a5.8	88	68	a38	96	94	a17	a6.5	a2.4	1.1
4	a1.7	a3.0	a5.8	66	56	a34	80	105	a16	a6.0	2.2	1.1
5	a1.7	a3.0	a25	52	51	a32	72	119	a16	a5.5	2.2	1.1
6	a1.7	a3.0	a120	43	51	30	71	117	a15	a5.5	2.0	1.0
7	a1.8	a7.0	a60	36	62	42	76	109	a14	*5.1	1.9	1.0
8	a2.0	11	a40	32	105	76	84	97	a13	a5.0	1.8	1.1
9	a1.9	16	*31	31	137	85	88	79	a13	a4.8	1.9	*1.2
10	a1.9	14	26	27	102	79	84	72	a13	a4.8	1.8	1.2
11	a1.9	15	21	24	79	75	72	71	a12	a4.8	1.8	1.2
12	a2.1	31	20	23	64	75	72	63	a12	a4.6	1.8	1.2
13	a2.3	17	30	23	*58	72	86	53	a 11	a4.4	1.8	1.6
14	a2.2	42	35	21	54	61	86	50	a 11	*4.4	1.8	3.8
15	*2.1	105	31	21	53	52	75	47	a 11	a4.4	1.8	3.4
16	a2.0	94	26	21	62	49	72	43	a10	a4.4	1.8	4.7
17	a2.0	45	23	20	75	46	76	47	a9.5	a4.4	1.7	4.4
18	a4.0	28	20	20	60	45	72	47	a9.5	a4.0	1.6	3.4
19	16	21	20	20	50	45	72	52	a9.0	a4.0	1.6	2.9
20	18	16	22	20	44	42	91	*53	*8.4	a3.8	1.4	2.4
21	a8.0	12	27	21	40	38	150	46	a8.0	a3.6	1.4	2.4
22	a4.0	10	37	36	a36	40	180	39	a7.5	a3.4	1.4	2.2
23	a6.0	9.0	55	49	a32	71	150	34	a8.0	a3.4	1.4	2.0
24	a4.4	7.8	63	55	a30	122	124	32	a8.0	a3.2	1.4	1.9
25	a4.0	7.4	44	59	a32	133	107	29	a7.5	a3.2	1.6	1.8
26	a3.8	7.1	33	56	a32	138	94	27	a7.5	a3.2	1.6	1.8
27	*3.5	6.2	26	53	a30	142	78	25	a7.5	a3.2	1.4	1.8
28	a3.4	5.8	23	53	a28	203	79	23	a7.5	a3.2	1.3	1.8
29	a3.4	5.5	22	53	-	300	93	22	a8.0	a3.2	1.3	*1.9
30	a3.2	5.3	255	104	------	198	102	21	a7.5	a3.0	1.2	1.9
31	a3.2	-----	468	135	-----	146	-----	20	------	a2.8	1.2	------
Total	117.3	556.7	1,625.7	1,599	1,703	2,579	2,839	1,839	334.4	135.8	53.6	59.7
Mean	3.78	18.6	52.4	51.6	60.8	83.2	94.6	59.3	11.1	4.38	1.73	1.99
Cfsm	0.171	0.845	2.38	2.35	2.76	3.78	4.30	2.70	0.505	0.199	0.079	0.090
In.	0.20	0.94	2.75	2.70	2.88	4.36	4.80	3.11	0.57	0.23	0.09	0.09
Ac-ft	233	1,100	3,220	3,170	3,380	5,120	5,630	3,650	663	269	106	118

Calendar year 1954: Max 916 Min 1.6 Mean 58.0 Cfsm 2.64 In. 35.78 Ac-ft 41,960
Water year 1954-55: Max 468 Min 1.0 Mean 36.8 Cfsm 1.67 In. 22.72 Ac-ft 26,660

Peak discharge (base, 650 cfs).--Dec. 30 (11 p.m.) 1,020 cfs (3.63 ft).
* 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 Cow Creek near Azalea.
Note.--Backwater from debris Oct. 1 to Dec. 30.

East Fork Illinois River near Takilma, Oreg.

Location.--Lat 42°00'40", long 123°37'30", in SE¼ sec. 10, T. 41 S., R. 8 W., on right bank 500 ft upstream from county road 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 1955 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, datum of 1929 (Bureau of Reclamation benchmark). 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.--14 years (1941-55), 184 cfs (133,200 acre-ft per year).

Extremes.--Maximum discharge during year, 3,510 cfs Dec. 30 (gage height, 7.18 ft); minimum, 6.9 cfs Sept. 7-12.

1941-55: Maximum discharge, 6,750 cfs Oct. 29, 1950 (gage height, 8.75 ft); minimum observed, 5.2 cfs Sept. 24-29, 1944.

Revisions.--The maximum discharge for the water year 1947 has been revised to 3,330 cfs Nov. 22, 1946 (gage height, 7.1 ft, from graph based on gage readings), superseding figure published in WSP 1094.

Remarks.--Records good. No regulation. Easterly Upper Canal and Osgood Canal diverted water around station prior to 1942. Occasional small diversions above station during summer months.

Revisions (water years).--WSP 1184: 1948. WSP 1288: 1951(P). Revised figures of discharge, in cubic feet per second, for periods in the water years 1946 and 1949, superseding those published in WSP 1064 and 1154, are given herewith:

1946
Apr. 14..... 190
15..... 220
16..... 260
17..... 310

1949
Feb. 15..... 310

1949--Con.
Feb. 16..... 350
17..... 420
18..... 500
19..... 370
20..... 250

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
Calendar year 1945.....	90,684	4,500	17	248	5.82	79.17	179,900
April 1946.....	5,881	400	116	196	4.60	5.13	11,660
Water year 1945-46.....	82,430	4,500	12	226	5.31	71.95	163,500
Calendar year 1946.....	57,035.2	1,570	5.7	156	3.66	49.78	113,100
February 1949.....	9,644	1,050	36	344	8.08	8.42	19,130
Water year 1948-49.....	53,646.8	1,360	8.6	147	3.45	46.85	106,400
Calendar year 1949.....	40,198.4	1,080	8.6	110	2.58	35.11	79,740

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	10	31	705	164	68	252	188	120	34	14	8.2
2	8.8	10	35	402	128	100	240	194	118	33	13	8.2
3	8.5	10	35	245	112	88	180	198	140	32	13	7.8
4	8.5	10	34	180	98	78	159	231	166	30	13	7.8
5	8.5	10	99	144	92	73	148	298	182	31	12	7.5
6	8.8	10	514	121	90	71	148	381	172	28	12	7.2
7	14	9.9	231	105	95	79	166	405	158	27	12	6.9
8	12	52	156	95	110	102	184	412	148	28	12	6.9
9	10	61	176	87	*196	110	215	343	136	28	12	6.9
10	9.9	34	144	79	164	114	224	334	126	27	*12	6.9
11	*9.9	31	120	72	144	118	182	362	110	25	12	6.9
12	9.5	50	115	67	128	130	167	337	92	22	11	6.9
13	9.9	42	196	70	120	133	194	258	78	21	14	9.2
14	9.5	300	166	66	112	114	174	192	66	20	13	18
15	9.5	462	136	90	109	101	183	159	61	22	12	11
16	13	352	117	92	114	93	144	145	56	23	12	25
17	21	150	105	88	128	88	140	151	52	23	8.8	20
18	13	92	98	82	120	87	130	*194	52	20	8.8	13
19	77	86	95	80	108	86	132	340	49	19	8.8	12
20	35	73	98	72	96	81	158	429	46	18	9.2	11
21	22	61	113	73	87	78	270	331	44	18	9.2	10
22	19	51	126	87	80	76	295	232	*43	16	9.2	9.9
23	18	48	167	92	75	78	240	200	43	17	9.2	9.5
24	16	43	194	101	73	88	207	180	42	18	9.2	9.2
25	14	41	156	114	71	120	186	180	40	16	9.2	9.2
26	14	37	132	105	70	146	167	158	38	16	9.2	8.8
27	13	34	115	97	68	190	145	144	35	18	9.2	8.8
28	12	32	108	92	63	*288	139	151	34	16	9.2	*9.2
29	12	*31	108	93	--	506	140	182	36	16	8.5	9.5
30	9.5	31	1,160	182	------	325	166	177	34	18	8.5	9.5
31	11	------	1,410	188	------	250	------	140	------	16	8.2	------
Total	466.0	2,263.9	6,486	4,146	3,015	4,059	5,445	7,625	2,517	696	333.4	300.9
Mean	15.0	75.5	209	134	108	131	182	246	83.9	22.5	10.8	10.0
Ac-ft	924	4,490	12,860	8,220	5,980	8,050	10,800	15,120	4,990	1,380	661	597

Calendar year 1954: Max 2,170 Min 8.4 Mean 181 Ac-ft 131,300
Water year 1954-55: Max 1,410 Min 6.9 Mean 102 Ac-ft 74,070

Peak discharge (base, 2,500 cfs).--Dec. 30 (10:30 p.m.) 3,510 cfs (7.18 ft).
* Discharge measurement made on this day.

Sucker Creek near Holland, Oreg.

Location.--Lat 42°09'00", long 123°27'50", in NE¼ sec. 25, T. 39 S., R. 7 W., on right bank 1 mile downstream from Grayback Creek and 4 miles (revised) northeast of Holland.

Drainage area.--76 sq mi, approximately.

Records available.--October 1945 to September 1955 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.--14 years (1941-55), 200 cfs (144,800 acre-ft per year).

Extremes.--Maximum discharge during year, 711 cfs Dec. 30 (gage height, 3.56 ft); minimum, 20 cfs Sept. 6 (gage height, 1.40 ft).
1940-55: Maximum discharge, 6,580 cfs Jan. 18, 1953 (gage height, 7.75 ft), from rating curve extended above 1,300 cfs on basis of shape of previous curve defined to 5,100 cfs by a slope-area determination; minimum, 19 cfs Sept. 27, 28, 1947, Oct. 21, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Grayback Canal diverts water from Grayback Creek above station for domestic use and irrigation; most of the return flow from this canal enters creek above station. No regulation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	20
1.7	51
2.0	99
2.5	230
3.1	470

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	30	39	304	a170	81	79	51	227	76	36	23
2	31	31	46	227	a160	92	70	54	227	73	36	23
3	31	31	41	179	a150	88	65	55	240	71	35	22
4	31	31	40	148	a140	83	81	50	279	70	35	22
5	31	30	109	128	a130	81	95	55	282	68	34	22
6	*30	30	286	110	a130	79	97	68	268	65	32	22
7	34	31	148	101	a130	85	73	78	254	62	31	22
8	32	73	105	97	a140	94	73	114	248	62	30	22
9	30	61	110	92	*152	95	81	78	234	62	30	22
10	30	43	94	86	140	97	61	78	212	61	*30	22
11	31	45	78	79	130	99	54	79	188	58	30	22
12	31	59	76	78	122	101	52	78	170	55	30	22
13	34	62	112	81	118	101	45	65	152	54	30	26
14	31	128	101	75	112	94	44	54	138	52	29	40
15	30	250	90	88	110	90	37	49	130	50	29	28
16	34	145	81	88	112	86	37	44	122	52	29	44
17	37	88	73	86	118	86	32	47	114	51	28	36
18	31	68	70	85	107	85	28	*211	110	47	27	29
19	90	67	68	81	103	81	31	384	103	47	26	26
20	49	57	73	78	97	79	44	470	99	46	26	26
21	38	52	78	88	95	78	67	412	94	45	26	26
22	40	47	81	114	92	75	70	356	*92	43	26	25
23	37	46	97	118	88	81	65	320	92	43	26	25
24	35	43	105	118	86	86	92	316	88	41	26	25
25	32	45	92	120	85	95	116	296	86	40	26	24
26	31	a44	81	114	85	103	107	279	86	41	25	24
27	31	a42	75	110	86	130	107	268	81	46	24	*24
28	30	a40	73	105	79	*194	107	272	83	41	24	26
29	30	*38	75	a105	-	155	107	290	79	39	24	26
30	30	37	231	a150	------	85	57	282	76	38	24	25
31	30	------	443	a160	------	85	------	248	------	36	24	------
Total	1,073	1,794	3,271	3,613	3,267	2,944	2,074	5,499	4,654	1,635	888	771
Mean	34.6	59.8	106	117	117	95.0	69.1	177	155	52.7	28.6	25.7
Cfsm	0.455	0.787	1.39	1.54	1.54	1.25	0.909	2.33	2.04	0.693	0.376	0.338
In.	0.53	0.88	1.60	1.77	1.60	1.44	1.01	2.69	2.28	0.80	0.43	0.38
Ac-ft	2,130	3,560	6,490	7,170	6,480	5,840	4,110	10,910	9,230	3,240	1,760	1,530

Calendar year 1954: Max 1,940 Min 30 Mean 228 Cfsm 3.00 In. 40.70 Ac-ft 165,000
Water year 1954-55: Max 470 Min 22 Mean 86.3 Cfsm 1.14 In. 15.41 Ac-ft 62,450

Peak discharge (base, 1,400 cfs).--No peak above base.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Deer Creek near Dryden and East Fork Illinois River near Takilma and recorded range in stage.

West Fork Illinois River below Rock Creek, near O'Brien, Oreg.

Location.--Lat 42°02'20", long 123°44'50", in SW¼SE¼ sec. 34, T. 40 S., R. 9 W., on left bank 900 ft downstream from Rock Creek and 3 miles southwest of O'Brien.

Drainage area.--42.4 sq mi.

Records available.--September 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,516.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--1954: Maximum discharge during September, 38 cfs Sept. 10 (gage height, 2.28 ft); minimum, 4.6 cfs Sept. 9.
1954-55: Maximum discharge during water year, 5,200 cfs Dec. 30 (gage height, 11.50 ft); minimum, 5.0 cfs Sept. 4, 6.
During flood of Oct. 28, 1950, flow of 14,200 cfs occurred at former station downstream where the drainage area is 15 percent larger.

Remarks.--Records excellent. Since Oct. 1, 1950, a right exists to divert 2 cfs to log pond upstream. No regulation.

Rating table, Sept. 9, 1954, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)

1.5	4.8	4.0	252
1.6	6.8	5.0	444
1.8	13	6.0	705
2.1	26	7.0	1,080
2.5	56	8.0	1,600
3.0	110	9.0	2,300

Discharge, in cubic feet per second, 1954

Day	Discharge	Day	Discharge	Day	Discharge
Sept. 9	4.8	Sept.17	14	Sept.25	7.7
10	15	18	11	26	8.9
11	19	19	10	27	8.0
12	11	20	9.8	28	7.7
13	11	21	9.5	29	7.4
14	*9.8	22	9.5	30	7.4
15	9.5	23	9.2		
16	9.8	24	8.0		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.7	11	34	2,000	296	206	410	268	38	18	9.8	5.8
2	7.7	10	43	578	227	606	353	240	35	19	10	5.8
3	8.0	10	42	380	194	360	303	216	36	18	9.5	5.4
4	7.4	10	41	298	173	256	261	212	34	17	9.2	5.0
5	8.0	11	126	256	161	207	235	212	31	19	8.9	5.2
6	8.0	11	*928	222	161	183	222	210	30	18	8.6	5.2
7	11	12	497	198	172	197	216	190	30	17	8.6	5.2
8	10	20	347	177	259	232	204	174	28	17	9.0	5.2
9	9.2	40	538	176	*336	238	204	151	26	16	7.7	5.2
10	10	24	360	156	244	233	212	136	28	16	*8.3	6.0
11	*9.8	22	235	142	201	252	200	127	26	15	7.4	5.2
12	10	38	245	127	176	311	241	114	25	15	7.4	5.2
13	10	40	594	126	158	318	396	103	25	13	7.1	6.8
14	9.5	539	448	120	148	268	303	96	24	14	7.1	19
15	8.9	755	301	227	143	222	240	88	22	13	7.7	11
16	10	615	229	303	143	196	224	84	23	14	6.8	18
17	15	309	177	265	147	177	230	78	22	14	7.4	15
18	11	191	145	252	127	165	206	*73	22	14	6.6	11
19	94	207	124	261	115	156	294	72	21	13	6.6	9.8
20	41	168	110	219	103	142	475	66	21	12	6.4	8.3
21	22	126	102	212	92	132	672	62	20	12	6.2	8.9
22	20	96	100	244	85	133	572	55	19	12	5.6	9.5
23	18	78	194	249	81	252	434	53	*21	11	5.8	8.9
24	17	67	345	270	81	294	345	52	21	11	5.6	8.3
25	15	60	286	298	80	263	299	50	21	10	6.0	7.1
26	14	50	212	238	84	237	277	48	20	11	6.0	7.1
27	13	46	169	204	81	232	244	46	20	13	6.0	6.8
28	12	42	151	183	83	*305	247	42	20	12	5.8	*7.1
29	12	*38	196	163	-	654	268	41	20	11	6.0	7.7
30	12	36	2,310	206	------	540	275	39	19	10	5.6	7.4
31	11	------	1,960	277	------	420	------	38	------	10	5.8	------
Total	472.2	3,682	11,589	9,027	4,351	8,387	9,062	3,436	748	435	223.5	242.1
Mean	15.2	123	374	291	155	271	302	111	24.9	14.0	7.21	8.07
Ac-ft	937	7,300	22,990	17,900	8,630	16,640	17,970	6,820	1,480	863	443	480

Calendar year 1954: Max - Min - Mean - Ac-ft -
Water year 1954-55: Max 2,310 Min 5.0 Mean 142 Ac-ft 102,500

Peak discharge (base, 1,000 cfs).--Dec. 30 (11 p.m.) 5,200 cfs (11.50 ft).
* 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, half a mile west of Kerby.

Drainage area.--364 sq mi.

Records available.--March 1926 to September 1955.

Gage.--Staff gage read once or 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.--29 years, 1,154 cfs (835,500 acre-ft per year).

Extremes.--Maximum discharge during year, 10,800 cfs Dec. 31 (gage height, 6.70 ft), from rating curve extended above 4,000 cfs on basis of shape of former curve defined to 10,000 cfs and slope-area determination at gage height 13.7 ft; minimum, 25 cfs Aug. 24, Sept. 13.

1926-55: 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.

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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
674	1928	Mar. 26, 1928	30,800	16.6
709	1930	Dec. 14, 1929	28,800	g10.8
724	1931	Nov. 16, 1930	14,700	g10.2
739	1932	Mar. 18, 1932	19,100	a11.2
754	1933	Jan. 2, 1933	19,600	11.3
769	1934	Jan. 14, 1934	13,800	9.96

a From floodmark.
g From graph based on gage readings.

Remarks.--Records good. Diversions for irrigation of about 5,500 acres above station. Some diversions for mining during winter months. No regulation.

Revisions (water years).--WSP 864: 1936-37. WSP 1184: 1927(M), 1942(M), 1943, 1946(M), 1948. WSP 1218: Drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1927-29, 1931, and 1932, superseding those published in WSP 654, 674, 694, 724, and 739, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1927		1928-Con.		1928-Con.		1930	
June 4	800	Jan. 5	2,430	May 5	770	Nov. 16	9,000
5	900	6	3,300	6	770	17	4,859
6	1,000	7	1,620	7	860		
7	950	14	3,810	8	860	1931	
8	900	22	995	Nov. 8	196	Nov. 23	1,130
9	800	23	950	10	1,730		
Dec. 4	770	24	995	11	1,730	1932	
5	610	25	950			Feb. 10	1,310
		26	770	1929		17	702
1928		27	690	Jan. 1	1,770	18	685
Jan. 2	2,700	30	6,920	30	1,060	28	2,200
3	2,550	May 3	950				
4	5,100	4	860				

Month	Maximum	Minimum	Mean	Runoff in acre-feet
June 1927	1,000	215	521	31,000
Water year 1926-27	30,000	34	1,730	1,250,000
December 1927	2,550	465	905	55,600
Calendar year 1927	30,000	34	1,420	1,030,000
January 1928	6,920	690	2,020	124,000
May	1,220	257	640	39,400
Water year 1927-28	23,500	26	1,030	748,000
November 1928	3,100	196	791	47,100
Calendar year 1928	23,500	26	1,040	756,000
January 1929	8,610	510	1,320	81,200
Water year 1928-29	9,880	24	746	541,000
Calendar year 1929	17,100	24	833	603,000
November 1930	9,000	43	676	40,200
Calendar year 1930	9,000	29	620	449,000
Water year 1930-31	9,000	15	576	416,000
November 1931	6,400	149	1,220	72,600
Calendar year 1931	9,650	15	767	555,000
February 1932	2,320	609	1,140	65,600
Water year 1931-32	11,800	17	1,040	755,000
Calendar year 1932	11,600	23	999	725,000

Illinois River at Kerby, Oreg.--Continued

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.5	21	2.5	490
1.6	28	3.0	1,060
1.7	37	3.5	1,750
1.8	54	4.0	2,660
1.9	80	5.0	5,020
2.0	119	6.5	10,000
2.2	236		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	80	223	5,720	1,700	844	1,740	1,520	623	145	46	28
2	59	75	251	3,180	1,320	2,300	1,850	1,450	530	135	47	27
3	57	75	273	2,120	1,160	1,560	1,600	1,360	570	135	44	27
4	54	80	251	1,660	1,040	1,270	1,460	1,420	601	129	40	29
5	54	77	266	1,450	988	1,010	1,360	1,470	645	124	39	28
6	54	75	3,670	1,240	928	892	1,280	1,660	612	124	37	32
7	67	70	2,680	1,120	940	892	1,270	1,630	612	115	35	27
8	70	80	1,640	1,000	*1,000	1,060	1,270	1,660	560	100	36	26
9	64	251	2,720	976	1,600	1,090	1,260	1,490	540	107	35	27
10	64	197	1,750	892	1,280	1,060	1,390	1,390	500	100	35	26
11	*59	161	1,260	808	1,110	1,070	1,240	1,420	471	98	*34	26
12	59	190	1,000	760	976	1,160	1,120	1,400	424	88	34	26
13	54	216	2,520	724	904	1,310	1,740	1,220	386	80	33	25
14	54	2,260	2,130	689	868	1,160	1,570	1,060	361	75	32	30
15	51	2,740	1,560	916	832	988	1,330	964	310	70	33	36
16	52	3,060	1,240	1,470	808	928	1,190	856	288	64	33	34
17	59	1,690	1,000	1,270	892	868	1,220	856	280	70	32	35
18	75	1,140	868	1,290	808	808	1,120	*892	266	70	32	40
19	140	964	784	1,380	736	784	1,200	1,050	243	70	32	37
20	352	940	736	1,110	689	724	2,100	1,230	216	70	28	36
21	190	736	700	1,040	645	678	3,020	1,220	204	64	30	36
22	150	590	736	1,050	580	645	2,860	976	*197	62	30	36
23	155	500	798	1,140	540	656	2,240	904	197	57	26	36
24	129	424	1,630	1,120	510	1,090	1,930	832	197	54	25	36
25	119	378	1,380	1,330	540	1,120	1,740	784	197	52	26	39
26	103	327	1,110	1,190	560	1,110	1,770	760	184	52	26	37
27	103	303	952	1,060	590	1,110	1,500	700	171	57	26	*59
28	92	280	868	976	550	1,560	1,400	678	161	54	27	52
29	88	273	856	904	-	3,330	1,420	678	161	57	27	52
30	88	*243	3,260	1,110	-----	*2,540	1,530	700	155	52	27	54
31	80	------	8,760	1,320	------	2,050	------	645	------	46	27	------
Total	2,854	18,475	47,870	42,015	25,094	37,667	47,720	34,875	10,862	2,574	1,014	1,039
Mean	92.1	616	1,544	1,355	896	1,215	1,591	1,125	362	83.0	32.7	34.6
Ac-ft	5,660	36,640	94,950	83,330	49,770	74,710	94,650	69,170	21,540	5,100	2,010	2,060

Calendar year 1954: Max 18,200 Min 33 Mean 1,305 Ac-ft 944,800
Water year 1954-55: Max 8,760 Min 25 Mean 745 Ac-ft 539,700

* Discharge measurement made on this day.

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 1955 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.--13 years (1942-55), 70.0 cfs (50,680 acre-ft per year).

Extremes.--Maximum discharge during year, 948 cfs Dec. 31 (gage height, 5.03 ft); minimum, 0.9 cfs Sept. 6-10.

1941-55: Maximum discharge, about 5,000 cfs Jan. 18, 1953 (gage height, 7.61 ft, backwater from logs); maximum gage height, 7.92 ft Oct. 29, 1950; minimum discharge, 0.9 cfs Sept. 20-24, 1951, Sept. 6-10, 1955.

Remarks.--Records good except those below 10 or above 200 cfs, which are fair. No regulation. One small diversion above station for irrigation.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
1.3	0.9	2.0	25	1.4	0.4	2.0	22
1.4	1.9	2.4	64	1.5	1.0	2.2	39
1.5	3.5	3.0	183	1.6	2.3	2.7	108
1.6	5.7	3.5	275	1.7	4.6	3.4	252
1.8	13	4.1	465	1.8	9.2		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	2.2	5.7	243	113	34	143	90	33	7.4	3.0	1.4
2	1.7	2.2	6.7	163	89	68	125	83	30	7.4	3.0	1.3
3	1.8	2.2	7.0	110	70	55	103	80	31	7.4	3.0	1.3
4	1.8	2.4	6.3	83	61	45	86	90	34	6.9	2.8	1.1
5	1.8	2.4	9.7	64	56	39	76	113	34	6.9	2.3	1.1
6	1.9	2.4	110	51	54	36	70	125	32	6.4	2.3	.9
7	2.2	2.4	47	44	55	49	77	127	30	6.4	2.3	.9
8	2.5	2.5	30	39	*73	68	89	127	28	6.0	2.2	.9
9	2.5	3.3	43	36	115	72	98	111	24	5.5	2.2	.9
10	2.4	3.0	36	33	86	69	100	106	23	5.5	2.0	.9
11	2.2	3.0	24	30	69	69	84	115	21	5.0	*2.0	1.0
12	*2.2	4.8	22	27	61	69	80	108	18	4.6	2.0	1.0
13	2.1	4.4	73	27	55	67	106	90	15	4.4	2.0	1.3
14	2.1	21	67	25	51	56	92	69	15	4.1	2.0	4.6
15	2.1	56	45	36	50	49	77	59	14	3.9	2.0	2.8
16	2.1	51	36	43	54	44	72	54	13	3.9	2.0	6.9
17	2.7	22	28	39	59	41	77	*55	11	4.1	1.9	6.4
18	2.9	13	24	35	52	39	69	69	11	3.9	1.9	3.7
19	11	16	23	33	47	39	72	98	11	3.9	1.9	2.8
20	5.5	14	25	30	43	37	97	105	10	3.9	1.9	2.8
21	3.5	11	33	31	38	34	123	86	*9.2	3.7	1.8	2.5
22	3.5	9.3	40	43	34	33	161	68	9.2	3.7	1.8	2.5
23	3.3	8.6	56	52	33	35	143	59	9.2	3.7	1.8	2.3
24	3.0	7.3	73	54	31	44	130	56	9.2	3.4	1.8	2.3
25	2.9	7.0	54	69	30	55	113	52	9.2	3.4	1.9	2.2
26	2.9	6.7	42	61	30	65	97	47	9.2	3.7	1.8	2.0
27	2.5	6.0	33	55	30	92	80	44	8.7	4.1	1.6	*2.2
28	2.4	5.7	30	51	26	161	77	40	8.3	3.9	1.6	2.3
29	2.4	5.7	29	51	-	252	82	44	8.7	3.7	1.5	2.3
30	2.4	*5.7	187	90	------	*174	92	41	7.8	3.4	1.5	2.3
31	2.2	-----	440	116	-----	136	-----	38	------	3.2	1.5	------
Total	86.2	303.2	1,685.4	1,864	1,565	2,126	2,891	2,449	526.7	147.4	63.3	66.9
Mean	2.78	10.1	54.4	60.1	55.9	68.6	96.4	79.0	17.6	4.75	2.04	2.23
Cfsm	0.121	0.439	2.37	2.61	2.43	2.98	4.19	3.43	0.765	0.207	0.089	0.097
In.	0.14	0.49	2.73	3.01	2.53	3.44	4.67	3.96	0.85	0.24	0.10	0.11
Ac-ft	171	601	3,340	3,700	3,100	4,220	5,730	4,860	1,040	292	126	133

Calendar year 1954: Max 1,130 Min 1.7 Mean 69.3 Cfsm 3.01 In. 40.92 Ac-ft 50,180
Water year 1954-55: Max 440 Min 0.9 Mean 37.7 Cfsm 1.64 In. 22.27 Ac-ft 27,310

Peak discharge (base, 930 cfs).--Dec. 31 (1 a.m.) 948 cfs (5.03 ft).
* Discharge measurement made on this day.

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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 1955. 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, 6,260 acre-ft June 11-20 (elevation, 4,822.8 ft); minimum observed, 339 acre-ft Sept. 14 (elevation, 4,803.1 ft). Maximum contents observed during period 1915-55, 8,020 acre-ft June 1, 1943, June 6, 1954 (elevation, 4,827.20 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, 8,150 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. Records available, December 1924 to September 1955. Staff gage read 1 to 10 times each month. Datum of gage is at mean sea level (levels by Talent Irrigation District). Maximum contents observed during year, 5,090 acre-ft May 27 (elevation, 2,160.5 ft); minimum, 90 acre-ft (estimated) Sept. 30. Maximum contents during period 1924-55, 8,490 acre-ft Feb. 20, 1927 (elevation, 2,175.2 ft), sedimentation being assumed negligible at that time; maximum elevation 2,176.0 ft Jan. 27, 1954; no usable contents at times.

Capacity table used is based on survey made by Bureau of Reclamation in 1951, which indicated that a net amount of 366 acre-ft of silt had accumulated in reservoir from 1924 to 1951.

Reservoir is formed by concrete arch dam, completed in 1924 by Talent Irrigation District; storage began in December 1924. Capacity, 7,720 acre-ft between elevations 2,075 and 2,173.5 ft (crest of spillway). No dead storage. Water is used for irrigation of lands near Talent.

Revisions (water years).--WSP 834: 1936. WSP 1064: 1945. WSP 1348: 1927(M), 1951-53.

Correction.--The figure of change in contents for August 1925 has been corrected to -2,068 acre-ft, superseding figure published in WSP 614.

Month-end elevation and contents, water year October 1954 to September 1955

Date	Fish Lake			Emigrant Gap Reservoir		
	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	4,815.10	3,540	-	-	a340	-
Oct. 31.....	4,816.6	4,040	+500	-	a420	+80
Nov. 30.....	4,818.4	4,660	+620	-	a530	+110
Dec. 31.....	4,819.7	5,110	+450	-	a760	+230
Calendar year 1954.....	-	-	-1,540	-	-	-3,100
Jan. 31.....	4,820.6	5,440	+330	-	a1,130	+370
Feb. 28.....	4,820.8	5,510	+70	-	a1,790	+660
Mar. 31.....	4,820.9	5,550	+40	-	a2,720	+930
Apr. 30.....	4,821.0	5,590	+40	-	a4,540	+1,820
May 31.....	4,822.4	6,110	+520	-	a4,900	+360
June 30.....	4,822.1	6,000	-110	-	a3,400	-1,500
July 31.....	4,813.3	2,970	-3,030	-	a1,740	-1,660
Aug. 31.....	4,805.5	811	-2,160	2,097.0	158	-1,580
Sept.30.....	4,807.2	1,230	+419	-	a90	-68
Water year 1954-55.....	-	-	-2,310	-	-	-250

a Interpolated.
Note.--Time of gage reading not known.

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 300 ft downstream at datum 0.62 ft lower.

Average discharge.--11 years, 44.4 cfs (revised), 32,140 acre-ft per year.

Extremes.--1941-52: Maximum discharge observed, 320 cfs June 7, 1941 (gage height, 4.00 ft, site and datum then in use), from rating curve extended above 90 cfs; no flow part of Nov. 30, Dec. 1, 1949.

Remarks.--Yellowhawk and Garrison Creeks divert water from left bank of Mill Creek in sec. 23, T. 7 N., R. 36 E., 1 mile upstream for irrigation and farm use on land adjacent to Walla Walla River which receives return flow. Flow regulated at dam upstream.

Revisions (water years).--WSP 1094: 1946. Revised figures of discharge, in cubic feet per second, for the water year 1943, superseding those published in WSP 984, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1943		1943-Con.		1943-Con.	
Jan. 18	38	Jan. 24	24	Jan. 30	20
19	33	25	23	31	19
20	31	26	22	Feb. 1	19
21	29	27	21	2	20
22	27	28	21	3	23
23	26	29	20		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
January 1943.....	1,497	127	19	48.3	2,970
February.....	873	43	19	31.2	1,730
Water year 1942-43.....	14,417	127	10	39.5	28,600
Calendar year 1943.....	13,386	127	10	36.7	26,560

Note.--Stage-discharge relation affected by ice Jan. 18 to Feb. 3, 1943.

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 county bridge, 0.9 mile east of Walla Walla, and 1 mile downstream from point of diversion from Mill Creek.

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

Gage.--Water-stage recorder and, after Nov. 23, 1946, wooden control. Altitude of gage is 1,130 ft (from topographic map). Prior to June 27, 1941, staff gage at same site and datum.

Average discharge.--11 years, 6.85 cfs, revised (4,960 acre-ft per year).

Extremes.--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.--Yellowhawk and Garrison Creeks divert water from left bank of Mill Creek in sec. 23, T. 7 N., R. 36 E., 1 mile upstream for irrigation and farm use on land adjacent to Walla Walla River which receives return flow. Flow regulated at dam upstream.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1943, superseding those published in WSP 984, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1943		1943-Con.		1943-Con.	
Jan. 19	b8.0	Jan. 25	b5.0	Jan. 31	b3.8
20	b7.0	26	b4.7	Feb. 1	b3.8
21	b6.5	27	b4.5	2	b4.0
22	b6.0	28	b4.2	3	b4.2
23	b5.5	29	b4.0		
24	b5.2	30	b3.9		

b Stage-discharge relation affected by ice.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
January 1943.....	304.9	21	3.8	9.84	605
February.....	184.9	11	3.8	6.60	367
Water year 1942-43.....	2,597.6	22	.7	7.12	5,150
Calendar year 1943.....	2,526.5	22	1.3	6.92	5,010

Lewis River near Amboy, Wash.

Location.--Lat 45°57'50", long 122°23'00", in NW¼ sec. 36, T. 6 N., R. 3 E., on left bank at abandoned Cresap Ferry, 2 miles downstream from Canyon Creek and 5 miles northeast of Amboy.

Drainage area.--665 sq mi.

Records available.--January 1911 to April 1931 (discontinued).

Gage.--Staff gage read twice daily. Altitude of gage is 180 ft (from river-profile map).

Average discharge.--20 years (1910-30), 4,030 cfs (2,918,000 acre-ft per year).

Extremes.--1911-31: Maximum discharge, 79,300 cfs (revised) Dec. 18, 1917 (gage height, 16.4 ft, from high-water mark); minimum observed, 660 cfs Sept. 5-14, 19-22, 1924 (gage height, -0.20 ft).

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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
-	1912	Jan. 13 or 14, 1912	*35,600	†10.0
-	1913	Nov. 13, 1912	*30,800	†9.2
394	1914	Jan. 5, 1914	47,600	†12.0
414	1915	Apr. 2, 1915	20,500	†7.4
444	1916	Dec. 21, 1915	50,600	†12.5
464	1917	Nov. 29, 1916	12,400	†5.6
484	1918	Dec. 18, 1917	79,300	‡16.4
514	1919	Jan. 23, 1919	51,800	†12.7
514	1920	Jan. 26, 1920	28,400	†8.8
554	1922	Dec. 12, 1921	36,800	†10.2
574	1923	Jan. 7, 1923	55,000	†13.2
594	1924	Jan. 31, 1924	26,700	†8.5
614	1925	Feb. 3, 1925	41,000	†10.9
634	1926	Feb. 6, 1926	21,300	†7.5
654	1927	Oct. 16, 1926	25,000	†8.2
674	1928	Nov. 25, 1927	60,600	†14.0
694	1929	Dec. 10, 1928	13,000	†5.6
709	1930	Feb. 7, 1930	19,400	†7.1

* Not previously published.
† From graph based on gage readings.
‡ From high-water mark.

Remarks.--No known regulation or diversion above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1914, 1918, and 1919, superseding those published in WSP 394, 484, and 514, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1914		1914-Con.		1917-Con.		1917-Con.		1919-Con.	
Jan. 5	42,800	Jan. 24	10,600	Dec. 18	68,100	Dec. 28	34,400	Jan. 19	21,300
6	33,200			19	47,600	29	35,600	20	14,800
7	30,800	1917		20	35,600	30	32,000	21	16,000
8	22,500	Dec. 13	20,000	21	30,800	31	29,000	22	34,400
9	13,600	14	26,600	22	25,600			23	41,600
10	10,900	15	16,000	23	19,900	1919		24	19,900
22	14,000	16	26,600	24	16,400	Jan. 17	19,900	25	13,000
23	13,200	17	47,600	27	19,900	18	23,900	26	12,000

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
January 1914.....	42,800	3,630	11,100	16.7	19.25	682,000
Water year 1913-14.....	42,800	910	4,510	6.78	91.97	3,260,000
Calendar year 1914.....	42,800	910	4,530	6.81	92.46	3,280,000
December 1917.....	68,100	2,470	19,100	28.7	33.09	1,170,000
Calendar year 1917.....	68,100	735	4,940	7.43	100.84	3,570,000
Water year 1917-18.....	68,100	730	4,670	7.02	95.36	3,380,000
January 1919.....	41,600	1,660	9,190	13.8	15.91	565,000
Water year 1918-19	41,600	800	4,470	6.72	91.18	3,240,000
Calendar year 1919	41,600	1,020	4,450	6.69	90.81	3,220,000

Clear Fork Cowlitz River near Packwood, Wash.

Location.--Lat 46°40'50", long 121°34'30", in NE¼ sec. 29, T. 14 N., R. 10 E., on left bank three-quarters of a mile upstream from confluence with Ohanapecosh River and 7 miles northeast of Packwood.
Drainage area.--55.7 sq mi (revised).
Records available.--August 1907 to September 1913, October 1913 to September 1917 (fragmentary), August 1930 to December 1942, June to October 1950 (discontinued). Published as "near Lewis" 1907-12 and as Clear Fork near Lewis 1913-17.
Gage.--Water-stage recorder. Altitude of gage is 1,290 ft (from topographic map). Aug. 20, 1907, to Sept. 30, 1917, staff gages at sites within a quarter of a mile downstream at different datums.
Average discharge.--17 years (1907-12, 1930-42), 237 cfs (171,600 acre-ft per year).
Extremes.--1907-13, 1930-42, 1950: Maximum discharge, 8,030 cfs Dec. 22, 1933 (gage height, 11.7 ft), from rating curve extended above 1,200 cfs; minimum, 30 cfs Nov. 2, 1935, Nov. 29, 30, Dec. 1, 1936.
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.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)†
312	1908	Mar. 15,16, 1908	1,840	5.0
312	1909	June 2, 1909	958	3.5
312	1910	Nov. 23, 1909	3,740	7.3

† Maximum observed

Remarks.--Small diversion above station for fish hatchery, 1930-42. No regulation.
Revisions (water years).--WSP 814: 1935. Revised figures of discharge, in cubic feet per second, for the water years 1908, 1910, 1913, and 1931, superseding those published in WSP 312, 362, and 724, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1908		1913		1913-Con.		1913-Con.		1913-Con.	
Mar. 15	1,840	June 1	1,460	June 13	1,120	June 25	688	July 7	610
16	1,840	2	a1,700	14	a900	26	a620	8	a560
		3	1,520	15	728	27	572		
1909		4	a1,300	16	a650	28	a620	1931	
Nov. 2	1,640	5	1,010	17	572	29	536	Jan. 22	
3	1,840	6	a800	18	a650	30	a680	23	a380
19	1,520	7	908	19	814	July 1	648	24	
23	3,740	8	a1,000	20	a800	2	a620	25	
24	1,840	9	770	21	688	3	572		
25	1,030	10	a650	22	a850	4	a550		
29	2,830	11	728	23	1,060	5	536		
30	1,580	12	a900	24	a900	6	a580		

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

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
March 1908	1,840	86	315	5.66	6.51	19,400
Water year 1907-8	1,840	53	220	3.95	53.77	160,000
Calendar year 1908	1,840	53	208	3.73	50.73	151,000
November 1909	3,740	71	768	13.8	15.38	45,700
Calendar year 1909	3,740	49	231	4.15	56.33	167,000
Water year 1909-10	3,740	49	316	5.67	77.12	229,000
June 1913	1,700	536	873	15.7	17.52	51,900
July	648	276	489	8.78	10.12	30,100
January 1931	740	54	203	3.64	4.20	12,500
Water year 1930-31	803	42	173	3.11	42.04	125,000
Calendar year 1931	803	-	188	3.38	45.88	136,000

Lake Creek at mouth, near Lewis, Wash.

Location.--Lat 46°38'00", long 121°38'20", in NE¼ sec. 11, T. 13 N., R. 9 E., on right bank a quarter of a mile upstream from mouth and 2½ miles (revised) northeast of Packwood (formerly Lewis).
Drainage area.--26.0 sq mi.
Records available.--August 1907 to September 1915 (discontinued).
Gage.--Staff gage read once-daily intermittently. Altitude of gage is 1,120 ft (from topographic map).
Average discharge.--8 years, 121 cfs (87,600 acre-ft per year).
Extremes.--1907-15: Maximum discharge observed, 1,440 cfs Mar. 15, 16, 1908 (gage height, 4.00 ft), from rating curve extended above 420 cfs; minimum observed, 36 cfs Sept. 8-19, 1910, Oct. 30 to Nov. 3, 1911 (gage height, 0.20 ft).
Remarks.--No regulation or diversion above station.
Revisions.--Revised figures of discharge, in cubic feet per second, for periods in water year 1911, superseding figures published in WSP 312, are given herewith:

Mar. 20, 1911..... 56
May 14, 1911..... 102

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
March 1911	72	40	51.0	1.96	2.26	3,140
May	170	66	117	4.50	5.19	7,190
Water year 1910-11	393	40	110	4.23	57.50	79,700
Calendar year 1911	464	36	101	3.88	52.50	72,800

Johnson Creek below West Fork, near Lewis, Wash.

Location.--Lat 46°31'50", long 121°37'00", in E½ sec. 13, T. 12 N., R. 9 E., on right bank 100 ft downstream from Deception Creek (formerly West Fork), 6 miles upstream from mouth, and 6 miles southeast of Packwood (formerly Lewis).
Drainage area.--33.3 sq mi.
Records available.--September 1911 to December 1912; May 1913 to September 1914 (fragmentary), discontinued.
Gage.--Staff gage and sharp-crested weir with full-end contractions. Altitude of gage is 2,100 ft (from topographic map).
Extremes.--1911-12: Maximum discharge not determined; minimum observed, 20 cfs Oct. 3, 1912 (gage height, 2.40 ft).
Remarks.--No regulation or diversion above station.
Revisions.--Revised figure of discharge for Jan. 23, 1912, superseding that published in WSP 394, and daily discharge for the period October 1911 to December 1912 (fragmentary record previously published), are given herein:

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	28	22	128	28	270	66	50	88	366	206	47	125
2	30	22	94	28	253	64	57	80	450	205	44	105
3	32	22	87	28	230	62	56	76	411	206	38	94
4	30	22	80	28	206	55	55	80	380	200	36	70
5	29	26	80	27	210	48	54	86	435	191	35	55
6	29	29	80	25	213	50	54	94	470	180	36	50
7	29	42	87	27	210	50	53	115	520	180	36	55
8	29	55	94	31	206	50	53	143	650	140	36	80
9	29	55	106	35	210	49	60	210	584	109	36	77
10	32	55	119	40	256	47	94	193	500	105	36	70
11	34	52	110	80	250	45	100	180	560	102	35	67
12	34	50	102	130	230	42	80	193	600	105	35	60
13	34	88	92	270	210	40	76	230	352	109	33	53
14	36	125	83	500	163	39	76	282	340	110	32	50
15	37	110	82	350	180	38	85	320	310	108	40	50
16	36	94	80	320	206	36	94	282	280	100	50	45
17	36	174	80	290	270	36	95	250	256	87	55	43
18	34	253	80	250	230	36	94	256	280	82	55	40
19	33	365	78	220	220	36	92	280	338	80	50	40
20	32	477	75	220	206	36	91	296	400	78	40	35
21	32	336	65	220	190	36	85	320	338	77	37	34
22	30	195	55	220	174	36	80	256	250	70	36	33
23	28	179	55	200	150	36	78	250	324	67	35	33
24	28	163	55	270	97	36	80	243	350	65	35	30
25	27	190	52	350	85	36	75	250	324	62	34	28
26	26	218	48	300	80	40	77	256	320	60	32	26
27	26	201	46	260	75	45	75	300	310	55	32	25
28	26	184	45	270	75	45	77	293	270	52	32	24
29	25	174	42	320	70	45	82	290	243	50	30	24
30	24	163	40	300	----	45	94	285	220	46	50	24
31	22	----	34	282	----	45	------	270	------	50	80	------
Total	937	4,141	2,354	5,919	5,425	1,370	2,272	6,747	11,431	3,337	1,238	1,545
Mean	30.2	138	76.0	191	187	44.2	75.7	218	381	108	39.9	51.5
Ac-ft	1,860	8,210	4,670	11,700	10,800	2,720	4,500	13,400	22,700	6,640	2,450	3,060

Calendar year 1911: Max - Min - Mean - Ac-ft -
Water year 1911-12: Max 650 Min 22 Mean 128 Ac-ft 92,700

Discharge, in cubic feet per second, 1912

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1	24	38	50	9	28	150	52	17	28	110	70	25	50	95	54
2	21	36	53	10	28	130	53	18	32	125	80	26	55	80	54
3	20	36	58	11	28	200	54	19	36	145	70	27	50	65	55
4	30	36	61	12	28	282	55	20	34	125	61	28	47	55	55
5	28	40	58	13	24	370	58	21	32	115	58	29	45	54	80
6	26	44	55	14	28	282	61	22	49	125	55	30	42	53	170
7	28	65	52	15	24	250	61	23	45	115	55	31	40	-	220
8	31	80	53	16	26	206	61	24	42	109	54				
Total													1,049	3,616	2,086
Mean													33.8	121	67.3
Runoff in acre-feet													2,080	7,200	4,140

Calendar year 1912: Max 650 Min 20 Mean 126 Ac-ft 91,400

Johnson Creek near Packwood, Wash.

Location.--Lat 46°34'30", long 121°42'00", in NE¼ sec. 32, T. 13 N., R. 9 E., on left bank at highway crossing, 400 ft upstream from mouth and 3 miles southwest of Packwood.
Drainage area.--49.6 sq mi. At site 1907-14, 1918-24, 49.1 sq mi (revised).
Records available.--August 1907 to March 1914, April to September 1914 (fragmentary), October 1918 to September 1924, September 1946 to November 1948, July to October 1950 (discontinued). Published as "near Lewis" 1907-11, and as "at mouth, near Lewis" 1912-14, 1918-24.
Gage.--Water-stage recorder. Altitude of gage is 1,000 ft (from topographic map). Aug. 14, 1907, to Sept. 23, 1914, staff gage, and Oct. 1, 1918, to Sept. 30, 1924, water-stage recorder, at site 1 mile upstream at different datums.
Average discharge.--14 years (1907-13, 1918-24, 1946-48), 201 cfs (145,500 acre-ft per year).
Extremes.--1907-14, 1918-24, 1946-48, 1950: Maximum discharge recorded, 2,990 cfs Dec. 11, 1946, probably higher Dec. 12, 1921; maximum gage height, 8.22 ft Dec. 11, 1946 (backwater from drift); minimum discharge, 15 cfs Oct. 17-19, 1946.
Remarks.--No regulation or diversion above station.
Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water year 1909, superseding those published in WSP 312, are given herewith:

Nov. 1, 1908..... d110
Nov. 3, 1908..... d150

d Doubtful gage-height record; discharge estimated on basis of records for stations on nearby streams.

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
November 1908.....	172	56	102	2.08	2.32	6,070
Calendar year 1908.....	1,510	48	188	3.83	52.25	137,000
Water year 1908-9.....	770	42	152	3.10	41.96	110,000

Rainy Creek near Kosmos, Wash.

Location.--Lat 46°30'30", long 122°09'15", at west line of sec. 23, T. 12 N., R. 5 E., on left bank 25 ft upstream from county bridge and 2 miles northeast of Kosmos.
Drainage area.--17.9 sq mi (revised).
Records available.--June 1950 to October 1953 (discontinued).
Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map).
Extremes.--1950-53: Maximum discharge, 552 cfs Jan. 31, 1953 (gage height, 4.59 ft); minimum, 0.3 cfs Sept. 14-24, 1951; minimum gage height, 1.05 ft Oct. 4, 5, 6, 7, 8, 15-17, 1952.
Remarks.--No regulation or diversion above station.
Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1950, superseding those published in WSP 1184, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1950		1950-Con.		1950-Con.	
Aug. 16	5.3	Aug. 24	10.5	Sept. 1	4.2
17	4.9	25	7.9	2	3.4
18	4.9	26	7.0	3	3.4
19	4.9	27	6.2	4	3.2
20	4.6	28	5.8	5	3.1
21	4.2	29	5.3	6	3.1
22	4.6	30	4.9	7	3.7
23	12	31	4.2	8	2.8

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
August 1950.....	191.2	12	4.2	6.17	0.345	0.40	379
September.....	110.2	17.5	1.0	3.67	.205	.23	219

Measurements of streamflow in the Pacific slope basins in Oregon and lower Columbia River basin made at points other than regular gaging stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. Measurements believed to have been made under base-flow conditions are identified by an asterisk (*) to the left of the discharge figure. These measurements when correlated with the simultaneous discharge of a nearby stream where continuous records are available will give a picture of the low-flow potentiality of stream. The column headed, "Measured previously" shows the water years in which measurements were made at the same, or practically the same, site.

Determinations of peak flow at points other than regular gaging stations are given in a separate table on page 274.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Oregon and lower Columbia River basin during the water year 1955

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Walla Walla River basin, Wash.						
Touchet River.	Walla Walla River.	NE¼ sec. 15, T. 7 N., R. 33 E., at site of former gaging station, 3½ miles north of Touchet.	736		Oct. 11	*47.6
					Nov. 20	*51.0
					Nov. 21	*76.8
					Jan. 3	170
					Jan. 29	149
					Apr. 14	622
					May 27	280
					July 7	*70.3
					Aug. 25	*21.6
					Sept.30	*45.9
Umatilla River basin, Oreg.						
Meacham Creek.	Umatilla River.	Mouth, 1 mile east of Gibbon.	177	1907,1910, 1912-13, 1952-54	July 8	66.1
John Day River basin, Oreg.						
Canyon Creek..	John Day River.	NW¼ sec. 25, T. 14 S., R. 31 E., 4 miles south of Canyon City.	100	1905-6, 1908-9, 1914-15, 1936, 1951-53	July 29	*9.80
Lake Creek....	East Fork Beech Creek	NW¼ sec. 7, T. 12 S., R. 32 E., at outlet of Magone Lake, 9 miles north of John Day.	1.23	1950	June 15	0
Rock Creek....	John Day River.	Mouth, 6½ miles northwest of Dayville.	292	1934, 1948-54	July 27	*1.5
Cable Creek...	Camas Creek..	Mouth, 5 miles northeast of Ukiah.	39	1942,1949, 1951-53	Aug. 18	*1.19
Wiley Creek...	Fox Creek....	SW¼NW¼ sec. 20, T. 11 S., R. 30 E., at highway crossing, 1.35 miles south of Beech Creek and 2 miles above Mine Creek.	2.43	1953	May 13	*17.4
Cottonwood Creek.	North Fork John Day River.	Mouth, at Monument.	233	1937,1948	Aug. 31	*2.34
Deschutes River basin, Oreg.						
Deschutes River.	Columbia River.	NW¼NW¼ sec. 28, T. 21 S., R. 8 E., at former gaging station below Sheep Springs, near Lapine.	256	1950-54	Apr. 28	*687
					June 16	*715
					July 1	*726
					July 18	*780
					Aug. 3	*783
					Aug. 24	*707
Davis Creek...	Deschutes River.	SE¼ sec. 5, T. 22 S., R. 8 E., about ¼ mile above unnamed spring.	141	1946-51	Aug. 30	*210
Unnamed tributary†	Davis Creek..	Southeast corner of sec. 5, T. 22 S., R. 8 E.	-	1944,1946, 1949,1951	Aug. 30	*16.6
Deschutes River.	Columbia River.	SE¼ sec. 3, T. 21 S., R. 10 E., at Big Tree at Foster Ranch, 1 mile upstream from Fall River and 8 miles north of Lapine.	523	1952	Oct. 21	*56.5
Unnamed tributary†	Deschutes River.	Sec. 4, T. 22 S., R. 9 E., at road crossing about 2 miles northeast of Wickiup Dam.	-	1952	Oct. 21	2.60
					Nov. 17	.80
North Fork Beaver Creek.	Crooked River.	Former gaging station, 12 miles east of Paulina.	64.4	1944	Oct. 19	*.65
North Fork Crooked River.	....do.....	Former gaging station above Deep Creek, 14 miles southeast of Paulina.	159	1913, 1944	Oct. 20	*3.39
Warm Springs River.	Deschutes River.	Former gaging station, 18 miles northwest of Warm Springs.	108	1912	Oct. 18	*121

* Base flow

† Not shown on any available maps.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Oregon and lower Columbia River basin during the water year 1955--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Hood River basin, Oreg.						
Green Point Creek.	West Fork Hood River.	Former gaging station below North Fork, 1½ miles west of Dee.	20.0		Oct. 8	*15.0
Willamette River basin, Oreg.						
McKenzie River.	Willamette River.	NE¼ sec. 1, T. 15 S., R. 6 E., 1 mile below Lower Falls.	148	1948-52, 1954	June 20	*1,470
Rock Creek...	Greasy Creek.	Former gaging station, 4½ miles southwest of Philomath.	14.6	1939	Dec. 28 Jan. 5 Mar. 22	39.8 98.4 208
Cox Creek....	Willamette River.	On line between secs. 4 and 5, T. 11 S., R. 3 W., at outlet of Waverly Lake at Albany, ½ mile above mouth.	15.2	1939	Dec. 29	51.0
Unnamed tributary.	South Santiam River.	SW¼SE¼ sec. 36, T. 13 S., R. 2 E., at U. S. Highway 20 crossing, 0.1 mile above mouth and 0.1 mile east of Cascadia ranger station.	0.94	1953	Jan. 5	7.70
...Do.....	Willamette River.	SE¼SE¼ sec. 13, T. 1 N., R. 1 W., at Oilton in Portland and 0.4 mile above mouth.	9.48		Feb. 4	1.35
Clatskanie River basin, Oreg.						
Clatskanie River.	Columbia River.	Former gaging station 5½ miles southeast of Clatskanie.	53.0		Oct. 28	*14.6
Big Medicine Creek basin, Oreg.						
Big Medicine Creek †	Pacific Ocean	1,000 ft above mouth and 11 miles southwest of Tillamook.	-		July 11	*.124
Rover Creek basin, Oreg.						
Rover Creek..	Pacific Ocean	At mouth, 11 miles southwest of Tillamook.	1		July 11	*1.41
David Douglas Creek basin, Oreg.						
David Douglas Creek †	Pacific Ocean	At mouth, 11 miles southwest of Tillamook.	-		July 13	*c.01
Allen Creek basin, Oreg.						
Allen Creek †	Pacific Ocean	At mouth at Camp Meriwether, 11 miles southwest of Tillamook.	-		July 11	*.56
Rocky Creek basin, Oreg.						
Rocky Creek..	Pacific Ocean	At highway crossing at mouth, 2 miles south of Depoe Bay.	5.36	1931-32, 1934-37, 1948-54	Nov. 30	*14.3
Alsea River basin, Oreg.						
South Fork Weiss Creek	Weiss Creek..	At mouth, 3½ miles southeast of Waldport.	0.24	1953	Jan. 4	3.52
Umpqua River basin, Oreg.						
Jackson Creek	South Umpqua River.	SW¼NE¼ sec. 21, T. 30 S., R. 1 W., 0.8 mile downstream from Beaver Creek and 6½ miles northeast of Tiller.	153	1951	Sept.21	*20.2
South Myrtle Creek.	Myrtle Creek.	SE¼ sec. 20, T. 29 S., R. 4 W., 0.6 mile below School Hollow and 5.5 miles east of town of Myrtle Creek.	43.9		Sept.21	*7.94
Deer Creek...	South Umpqua River.	SE¼ sec. 16, T. 27 S., R. 5 W., 0.4 mile downstream from Clover Creek, 2.8 miles east of Roseburg, and 3 miles above mouth.	53.0	1951	Sept.22	*1.62
North Umpqua River.	Umpqua River.	At former gaging station above Clearwater River near Toketee Falls.	258		Oct. 4	*492
Clearwater River.	North Umpqua River.	Former gaging station at mouth, near Toketee Falls.	75.3		Oct. 5	*81.2
Boulder Creek	....do.....	NE¼ sec. 13, T. 26 S., R. 2 E., ¼ mile above mouth near Toketee Falls.	34.4		Oct. 6	*6.24
Steamboat Creek.	....do.....	SE¼ sec. 31, T. 25 S., R. 1 E., 0.5 mile above mouth and 19 miles northeast of Glide.	227	1928-29, 1931-32, 1949, 1951	Sept.22	*53.8
Rock Creek...	....do.....	NE¼NE¼ sec. 1, T. 26 S., R. 3 W., 1 mile above mouth and 6 miles northeast of Glide.	97.4	1949, 1951-52	Sept.22	*30.7

* Base flow
† Not shown on any available maps.
c Volumetric measurement.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Oregon and lower Columbia River basin during the water year 1955--Continued

Umpqua River basin, Oreg.--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Cavitt Creek.	Little River.	NE¼ sec. 14, T. 27 S., R. 3 W., 1.5 miles above mouth and 1.5 miles south of Peel.	56.9		Sept.22	*9.20
Sutherlin Creek.	North Umpqua River.	SE¼ sec. 16, T. 25 S., R. 5 W., 1½ miles upstream from Cooper Creek, at Waite Street Bridge in Sutherlin.	16.7		Feb. 3	29.7
Calapooya Creek.	Umpqua River.	NW¼ sec. 13, T. 25 S., R. 6 W., ½ mile downstream from Williams Creek and 3.5 miles southwest of Oakland.	210	1934-36, 1949-50, 1952	Sept.22	*22.4
Yoncalla Creek.	Elk Creek....	SW¼ sec. 27, T. 22 S., R. 5 W., 1½ miles above mouth and 1.8 miles north of Yoncalla.	26.0		Sept.19	0
Elk Creek....	Umpqua River.	SE¼ sec. 21, T. 22 S., R. 5 W., 1,000 ft below Yoncalla Creek and 1.7 miles southeast of Drain.	104	1950	Sept.19	7.22
Pass Creek...	Elk Creek....	NW¼SW¼ sec. 34, T. 21 S., R. 5 W., 0.2 mile downstream from Sand Creek, 3 miles northeast of Drain, and 3 miles above mouth.	61.9		Sept.19	3.42
Brush Creek basin, Oreg.						
Unnamed tributary.	Brush Creek..	NE¼ sec. 26, T. 33 S., R. 15 W., at road crossing at mouth, 5 miles southeast of Port Orford.	0.84	1954	Dec. 30	154
Rogue River basin, Oreg.						
North Fork Little Butte Creek	Little Butte Creek.	Former gaging station above intake of Rogue River Valley Canal near Lake Creek.	38	1912,1915, 1934	Sept.22	*22.8
Evans Creek..	Rogue River..	Former gaging station at Bybee Springs near town of Rogue River.	118	1938	June 3 June 30 Aug. 4	*34.0 *21.6 *7.73
Butcherknife Creek.	Slate Creek..	NE¼ sec. 19, T. 37 S., R. 7 W., ½ mile above mouth and 2½ miles southwest of Wonder.	2.09	1937,1942, 1954	Dec. 6	41.8
Round Prairie Creek.	....do.....	At mouth, 1½ miles west of Wilderville.	3.06	1954	Dec. 6	21.6
West Fork Illinois River.	Illinois River.	Former gaging station near O'Brien.	42.4		Oct. 11 Nov. 29 Mar. 28	*9.23 44.7 *335
Illinois River.	Rogue River..	SE¼ sec. 6, T. 37 S., R. 9 W., ¼ mile downstream from Briggs Creek and 12½ miles northwest of Selma.	663		Sept.20	*98.0

* Base flow.

The following table contains determinations of peak discharge made at crest stage by indirect methods or by current meter or computed from rating curve at points other than regular gaging stations.

Determinations of peak discharge during water year October 1954 to September 1955

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Unnamed stream.	Luna Gulch...	Near center of south line of sec. 36, T. 4 N., R. 17 E., at crossing of State Road 8E, 9½ miles east of junction with U. S. Highway 97 and 10 miles southeast of Goldendale, Wash.	-		Jan. 9, 1953	123
North Fork Lacamas Creek.	Lacamas Creek	SE¼ sec. 6, T. 12 N., R. 1 E., at county road crossing, 1½ miles northeast of Ethel, Wash.	0.36		Feb.24, 1950 Jan. 1, 1951 Feb. 4, 1952 Jan.23, 1953 Dec. 9, 1953 Feb. 8, 1955	29.2 19.4 16.4 14.1 33.2 23.3
Unnamed tributary.	Rogue River..	SE¼ sec. 20, T. 36 S., R. 14 W., 1 mile above mouth and 1½ miles northeast of Wedderburn, Oreg.	1.53	1954	Dec. 30	247
Harris Creek.	Pacific Ocean	SE¼NW¼ sec. 36, T. 40 S., R. 14 W., at U. S. Highway 101 at crossing near mouth, 1.9 miles northwest of Brookings, Oreg.	1.05	1954	Dec. 30	440

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